THE EFFECT OF A LIFE SKILLS CURRICULUM ON THE PROBLEM-SOLVING ABILITIES OF TRIBAL COLLEGE STUDENTS

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OF TRIBAL COLLEGE STUDENTS

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ABSTRACT

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Title of the Study: THE EFFECT OF A LIFE SKILLS CURRICULUM ON THE PROBLEM-SOLVING ABILITIES OF TRIBAL COLLEGE STUDENTS

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Purpose, Scope and Method of Study

The purpose of this study was to examine the effect of a life skills curriculum on the problem-solving abilities of tribal college students enrolled in the ORIE 1011: Freshmen Orientation Course at the College of the Muscogee Nation (CMN). A quantitative, causal-comparative research design was employed to investigate the hypotheses. I collected student data from CMN's ORIE 1011Freshmen Orientation course during the Fall 2016 trimester. The independent variable was curriculum type, with two levels: the Life Skills group and the non-Life Skills group. The Life Skills curriculum was utilized in two of the four sections (course sections 02 and 03) of the orientation course during the fall term; the other two sections (course sections 01 and 04) of the orientation course received the existing curriculum. The dependent variable; problem-solving abilities, was assessed using the Social Problem-Solving Instrument-Revised (SPSI-R) total score. All four sections of the orientation course were administered the SPSI-R both as a pretest and posttest; the pretest was administered at the beginning of the course, while the posttest was administered at the end of the course. I calculated the change in Total SPSI-R mean scores from pretest to posttest for both the Life Skills group and non-Life Skills groups and then used a paired sample *t*-test to compare the two groups. I then calculated the change in Total SPSI-R mean scores from pretest to posttest for all four course sections and used an ANOVA to compare the sections.

Findings and Conclusions

The Total SPSI-R mean scores changed significantly for the Life Skills groups ($p < .01$), but they did not change significantly for the non-Life Skills group. There was no significant difference in the Total SPSI-R change among the four sections. This study confirmed the significance of Life Skills on the problem-solving abilities of tribal college students. Life Skills can provide students with a positive attitude of self-esteem and increase problem-solving abilities, thus providing them with the adaptive behavior to make rational decisions associated with functional problem solving.

DISSERTATION CHAIR'S APPROVAL: _____

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CHAPTER I

INTRODUCTION

Educators and psychologists have contended an essential part of being human is the capacity to solve problems (D'Zurrilla, Nezu, & Maydeu-Olivares, 2002). According to D'Zurrilla, Nezu, and Maydeu-Olivares problem-solving ability contributes to social competence and psychological well-being, which enhances a person's ability to resolve everyday problems. Researchers have formally defined this ability as social problem solving, which is a self-directed cognitive behavioral process that a person uses to discover effective or adaptive solutions for every day problem situations (D'Zurrilla & Maydeu-Olivares, 1995; D'Zurrilla & Nezu, 1982, 1999).

Social problem solving "refers to problem solving as it occurs in the natural environment or real world" (D'Zurrilla et al., 2002, p. 3). Terms such as personal problem solving and applied problem solving have been used rather than social problem solving; all of these terms emphasize personal and social context (D'Zurrilla et al., 2002). Another common term for these problem-solving skills is life skills, which were defined by the World Health Organization [WHO] (1999) as the abilities for adaptive and positive behavior that enables individuals to effectively meet the challenges of everyday life.

Within the framework of social problem solving, D'Zurrilla et al. (2002) defined a problem as being "a specific life circumstance that demands responses for adaptive functioning, but no effective response is immediately available or identifiable to

the person experiencing the situation due to the presence of various obstacles" (p. 3). These obstacles include ambiguity, unpredictability, deficient performance skills, or lack of resources. Problem situations were described to exist either as single events or a series of events and could even continue as a chronic issue. Additionally, problems could either arise from the environment or from within a person (D'Zurrilla et al., 2002).

The problem-solving process is the act of realization of a solution which can be generalized for most problem situations (D'Zurrilla et al., 2002). Solutions, as defined by D'Zurrilla et al., are coping responses as a result of the problem-solving process. Furthermore, an effective solution is described as one that achieves the desired goal with minimal negative consequences. Problem-solving ability can be cognitively assessed with a research instrument such as a behavioral test and studies on problem-solving abilities are readily available along with research instruments. Solution implementation skills, on the other hand, are assessed by a demonstration of the applied usage of cognitive problem-solving abilities.

The issue of college students' problem-solving abilities in relation to student success indicated that many students are not only deficient in problem-solving ability, but are underprepared for college level course work (Greene, 2012). The issue of underprepared students becomes compounded when students are not only deficient in the course content, but also lack basic life skills essential for success in college. Particularly at open admissions colleges, many students come to the institution underprepared for the critical thinking aspect of college level work due to their lack of life skills such as problem-solving abilities (Greene, 2012; Koruklu, 2015). Without the necessary problem-solving skills, many of these students are unaware of college procedures and resources that could assist them in being successful.

According to Becker, Krodel, and Tucker (2009), under resourced college students from low-income families lack many of the resources to become successful in college. This lack is not limited to financial resources, but also includes life skills such as registers of speech, language, abstract thought, and critical thinking, which is linked to problem solving. This phenomenon is due in part to the perpetuation of the disparities of the lack of education among family members.

Open admissions institutions serve a high population of low income students who face the disparities described by Becker et al. (2009). One such open admissions institution is the College of the Muscogee Nation. Many students at this particular tribal college also have the compounded factor described by Greene (2012) of being deficient in college level course work as demonstrated by a high percentage of students not meeting the ACT college readiness standards. In an attempt to address this lack of life skills, CMN has incorporated the American Indian Life Skills Development Curriculum into one of its courses, Freshmen Orientation ORIE 1011 College Cornerstone.

Background of the Study

During the mid-twentieth century, as higher education became more accessible to the American population, higher education officials realized that many students would require academic support. The Truman Commission Report was the first official policy to implement academic assistance to underprepared college students (The President's Commission on Higher Education, 1947). The report suggested that college graduates were trained in one field of work, but could not perform as a citizen while facing life's problems. Under this policy, community colleges were officially mandated to provide developmental education for many students, which meant that colleges would need to go

beyond remediation in college level course work and teach basic skills necessary for life's problems.

Currently, the open admissions policy of many colleges allows entrance into their institutions for nearly every student who applies, and these institutions continue to face the challenges of students who enter college without the basic academic and life skills to succeed in college-level coursework (Bahr, 2008). According to Greene (2012), first-time college students at open admissions colleges face more challenges integrating into the college environment and are less successful than those students accepted into institutions with stricter admission standards. For many students, the first-time freshmen experience is their first opportunity to live on their own. Students who lack the life skills to solve problems find it difficult to persist through the rigors of college courses, let alone the task of maintaining a healthy life.

Several studies have investigated the benefits of utilizing life skills lessons that include self-esteem and problem based learning in developmental education. Germano (2007) recommended that life skills be incorporated into an orientation course to acclimate first-time freshmen to the rigor of college courses and to provide support services. According to WHO (1999), every educational system has a duty to support the development of life skills in order for students to effectively function within the social and economic demands of society.

Research has indicated that the first-year college experience can have a major effect on student development and persistence towards graduation (Engstrom & Tinto, 2008; Tinto, 1993). The first six weeks of the first college year are the most critical for retaining first-year students as they struggle to adapt to a new environment and academic challenges (Engstrom & Tinto, 2008; Tinto, 1993). However, the difficulty lies in that

life skills is not a standalone teaching subject and educators must integrate life skills in the teaching processes that are already established (WHO, 1997). Contextualized curriculums utilizing real world problems faced in everyday college situations would benefit the student's adaption to higher education.

Statement of the Problem

Corda (1991) indicated problem solving has historically been underemphasized in the assessment of a student's ability to be successful in an academic setting. Self-esteem and self-confidence are two of the most important problem-solving attitudes that affect a person's success. A recent study by Gomes and Marques (2013) examined the effects of a life skills training program on students' life skills and expectations about academic achievement. The researchers indicated that students who received life skills interventions reported a tendency to be more optimistic and had higher expectations about academic achievement. Rotter (1966) suggested that those with a higher perception of self-confidence in their ability to control other aspects of their environment tend to be better problem solvers. Research on the casual elements of locus of control in relation to academic achievement showed a significant positive correlation between the two constructs (Cobo, 2013; Uguak, Elias, Uli, & Suandi, 2007).

Researchers have indicated that problem solving is more intuitive and less planned out (Hogarth, 1987; Mitchell & Krumboltz, 1984). However, Perri and Richards (1977) asserted that successful problem solvers are deliberate and systematic, rather than impulsive. D'Zurilla and Goldfried's (1971) research indicated that the most effective problem solvers were those who attributed problem solving to a learned behavior. D'Zurrilla, Nezu, and Maydeu-Olivares (2002) later revised the Social Problem-Solving

Inventory to expand on the definition of the rational problem-solving abilities to further define the learned skills approach. This research by D'Zurrilla et al. (2002) continued to assert a connection between effective problem solving and self-efficacy. Additionally, Hay, Byrne, and Butler (2000) indicated that self-concept and problem-solving skills were connected. Thus, students with low self-concept showed poor planning skills, generated fewer constructive alternative solutions to problems, and recognized fewer consequences associated with their behaviors (Hay et al., 2000; Bernhardt, Yorozu, & Medel-Añonuevo, 2014).

Tribal college students with minimal life skills education lack problem-solving abilities and have difficulty being successful in higher education (Mainor, 2001). LaFromboise (1996) identified a need to develop a model for American Indian Life Skills Development Curriculum to introduce the population to strategies such as problem-solving skills to battle an epidemic of youth suicides among Zuni Pueblo Public School students. To assist the underprepared tribal student at CMN, the American Indian Life Skills Development Curriculum originally developed by LaFromboise was integrated into the orientation course. However, since this integration was new to the orientation course, the impact of the Life Skills on student problem-solving abilities had not been investigated.

Purpose of the Study

LaFromboise (2006) contended that American Indians have a more difficult time adjusting to life's problems in the educational settings due to the lack of life skills. The purpose of this study was to analyze the effect of a Life Skills curriculum on the problem-

solving abilities of tribal college students enrolled in the Orientation ORIE 1011 College Cornerstone class at CMN during the Fall 2016 trimester.

Research Questions

I sought to answer the following research questions:

1. Is there a change in problem-solving skills from pretest to posttest for tribal college students who received the American Indian Life Skills Development Curriculum (Life Skills Curriculum) in a freshman orientation course at CMN?
2. Is there a change in problem-solving skills from pretest to posttest for tribal college students who did not receive the Life Skills Curriculum in a freshman orientation course at CMN?
3. Is there a change in problem-solving abilities from pretest to posttest among four sections of a freshman orientation course at CMN?

Methodology

This study utilized a causal-comparative design to investigate the effect of the Life Skills Curriculum on the problem-solving abilities of first-time college students enrolled in the Fall 2016 Freshmen Orientation class at CMN. The research study focused on data collected by the college's administration. The data consisted of a Social Problem-Solving Instrument-Revised (SPSI-R) taken by students enrolled in all sections of the ORIE 1011 College Cornerstone courses. The course sections numbered 02 and 03 were designated as the Life Skills group which received the Life Skills Curriculum and the course sections numbered 01 and 04 were designated as the non-Life Skills group

which did not receive the curriculum. The tribal college conducted the administration of the SPSI-R and Life Skills curriculum. Each class was provided with a description of the study, a letter of support from the CMN President, and a consent form. Each class was administered the SPSI-R at the beginning of the trimester and again at the end. I later contacted the Office of the President of CMN to utilize the data for my causal-comparative study. I utilized the Statistical Package for Social Sciences (SPSS) software to calculate descriptive statistics and to compute inferential statistics.

The creator of the Life Skills Curriculum, Dr. LaFromboise (personal communication, February 23, 2016), indicated through an email to the CMN administration that it could be adapted and implemented into a college curriculum for tribal college students. The curriculum covered five areas of life lessons, with each lesson emphasizing an aspect of Native culture. The curriculum addressed low self-esteem, the negative consequences of adversity, communication, problem solving, and built on the positive perceptions of living a healthy life.

The teaching and assessment practices of the Life Skills Curriculum were designed to provide a set of skills and knowledge that were relevant to the students' lives and needs. In order for students to actively apply the skills to specific real-world tasks and contexts, the curriculum was embedded in the already established orientation course content. Methods of contextualized learning from noted constructivist philosophers, Piaget (1963) and Vygotsky (1978) were utilized within the curriculum development of the embedded Life Skills. Methods included real world problems and community based learning environments that incorporated problem based learning which provided opportunities to address life's problems. The embedded Life Skills Curriculum also

constructed learning situations based on the prior knowledge that students already had (Adkins, 1970).

Connections to Educational Leadership

This study contributes to college faculty and staff's knowledge base of the growth and development during a student's first year of college, and it increases current information and awareness of problem-solving abilities during this important period for students. Several factors contributed to the need for this study, but two primary factors were: (a) the continuing interest and research about the first-year college experience for at-risk students, and (b) the aspect of problem-solving abilities during the first college year experience for at-risk students. Laskey and Hetzel (2011) stated at-risk students enter college underprepared and may lack the motivation to pursue a college degree. Additionally, they may also lack soft skills needed to be successful (i.e., attending class, using effective study strategies and using social skills necessary to ask questions) (Laskey & Hetzel, 2011).

The primary focus of literature regarding problem-solving and life skills education is with secondary schools. The results from this study provide information for staff, deans, faculty, student affairs administrators, and disability support staff about first-year at-risk college student involvement with campus services and the first-year at-risk student's problem-solving abilities. Further, it adds to the literature regarding first-year at-risk student development by comparing problem-solving abilities of both at-risk students who received the Life Skills Curriculum embedded into a college orientation class and those at-risk students who did not receive the Life Skills Curriculum embedded in a college orientation class.

In addition, the results from the study will assist faculty and college support staff by providing ideas and interventions to help at-risk students connect with campus resources in order to become more integrated with the college community. It also aids in the establishment of a strong support base for these students. With this information, faculty and staff can further promote recommendations to help with the retention and attrition of first year at-risk college students.

Data analysis of the student responses from the SPSI-R will assist student life professionals in identifying causes for growth in student retention. Moreover, the results from the study will help foster improvement in professional development programs, student development programs, student service programs, and student orientation seminars as well as student activities to promote more student involvement and social development for all students. As noted by Tinto (1993), student involvement with campus life is a crucial component to student success by creating a sense of community.

Definition of Key Terms

American Indian Life Skills Development Curriculum: A curriculum that addresses Native American culture and teaches life skills which are self-esteem, emotional stress, communication and problem solving, identifying self-destructive behavior, suicide prevention, and planning for the future (LaFromboise, 1996).

At-risk College Student: A student who enters college underprepared for the rigor of college level courses and may lack the motivation to pursue a college degree (Cobo, 2013).

College Cornerstone: A freshmen orientation course that focuses on providing the foundation for students during their initial college years. The assignments reflect the transition into and fundamentals of college life (CMN Catalog, 2016).

Indian College Student: A student that is a member of a federally recognized Indian Tribe, also synonymous with the term Native or Native American (American Indian College Fund, n.d.).

Life skills program: An education program aimed at facilitating the development of psychosocial skills that are required to deal with the demands and challenges of everyday life. Psychosocial skills relate to both psychological and social aspects and include self-esteem, emotions, communication, and problem solving (WHO, 1999).

Problem: A specific life circumstance that demands responses for adaptive functioning, but no effective response is immediately available or identifiable to the person experiencing the situation due to the presence of various obstacles (D'Zurrilla et al., 2002).

Problem-solving abilities: A cognitive response of adaptive functioning to utilize positive problem orientation and rational problem-solving behaviors, while diminishing negative problem orientation, impulsivity/carelessness style, and avoidance style behaviors as measured by the SPSI-R (D'Zurrilla et al., 2002).

Social Problem-Solving Inventory-Revised (SPSI-R): A scale that provides a global indicator of the level of a person's social problem-solving ability. Higher total SPSI-R scores indicate more constructive or effective problem solving, whereas lower scores indicate more defective or dysfunctional problem solving. This assessment of a person's aptitude to solve problems addressed the areas of positive problem orientation,

negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style as a part of the Total SPSI-R score (D'Zurrilla et al., 2002).

Tribal College: A college that is an institutional member of the American Indian Higher Education Consortium and designated by the Bureau of Indian Education to have 51% Native American student enrollment. The College of the Muscogee Nation is the institution of higher education that serves a federally recognized Indian tribe (CMN Catalog, 2016).

Assumptions of the Study

An assumption of the study is that the participants answered the questionnaire honestly and to the best of their ability. As noted by D'Zurrilla et al. (2002), the SPSI-R is a self-report instrument based on the subject's behaviors and is susceptible to response bias. Response bias is intentionally or unintentionally giving false responses to enhance or diminish the participant's SPSI-R score (D'Zurrilla et al., 2002). A person may have a response bias in order to obtain positive results or to avoid negative consequences.

Limitations of the Study

This study is limited in scope to the assessment of students' self-reported problem-solving abilities of primarily first-time freshmen enrolled in the Freshmen Orientation course at CMN during the Fall 2016 trimester. While students are advised to take this course in the first trimester, it is not always possible and because of this issue, some students were not first year students. In addition, not all of the participants of the study persisted to the end of the trimester thus, data could not be gathered from the post-questionnaire for these students.

Another limitation to the study, as stated by D'Zurrilla et al. (2002), was that social problem solving is made up of two constructs; problem-solving abilities and solution implementation. The SPSI-R instrument adequately assesses a person's problem-solving abilities through problem orientation and problem-solving styles, but it does not assess solution implementation. In addition, the college classroom setting is a one hour per week class which limited the amount of time given to the Life Skills curriculum in order to be consistent with the course's regular learning outcomes.

Summary

This research study focused on the modified implementation of American Indian Life Skills Development Curriculum lessons, created by LaFromboise (1996), into the Fall 2016 Orientation ORIE 1011 College Cornerstone course at CMN. For this study I analyzed the effect of the Life Skills Curriculum on the problem-solving abilities of tribal college students. Chapter Two provides a review of the literature relevant to this study: Native American historical trauma; life skills; development of problem-solving education, and; life skills and problem solving as applied to Native American populations. Chapter Three explains the methodology of the study, including collection of the data and specific procedures of data analysis. Chapter Four is a presentation of the results for each step of the data analysis. Chapter Five relates the results of the study to the research questions and review of literature for the purposes of interpretation, recommendation for practice, and implication for future research.

CHAPTER II

REVIEW OF THE LITERATURE

This chapter is a review of the literature regarding the effects of historical trauma on Native Americans to provide a background regarding the disparities in this population concerning health, education, and socioeconomic status as they relate to problem-solving ability. The review will also introduce life skills and the American Indian Life Skills Development Curriculum. Literature surrounding the issue of problem solving will also be discussed. Finally, the history of the development of the Social Problem-Solving Instrument-Revised will be reviewed.

Native American Historical Trauma

Native American historical trauma is an important element of the background of this research because the events that took place during the assimilation era can be correlated with the disparities in life skills and problem solving as shown in the following literature and research. Evans-Campbell (2008) studied the effects of historical events leading to psychological trauma, which would be later identified in other research as historical trauma (Brave Heart & DeBruyn, 1998; Grayshield, Rutherford, Salazar, Mihecoby, & Luna, 2015; Tucker, Wingate, & O'Keefe, 2016). The impact of historical trauma on the Native American community has manifested in multiple challenges. Some of the challenges include loss of land related to economic disparities, a disruption in family continuity, and loss of languages. Historical trauma is passed from generation to

generation through extended family-child interactions and includes symptoms of poor emotional tolerance, psychic numbing, substance abuse, and depression (Evans-Campbell, 2008; Hawkins & La Marr, 2012).

Historical trauma is not exclusive to, but is attributed to, the Native American boarding school experiment, which was one of the most devastating policies of the United States government specific to American Indians. It was the belief of the Bureau of Indian Affairs that American Indian children would learn to be self-sufficient participants in the larger society if they were reared away from their homes in residential schools (Evans-Campbell, 2008). The program, which began in 1879 and continued into the 20th Century, forcibly separated children as young as 5 years old from their families and sent them away for many years under the premise of promoting education, spiritual conversion, and other forms of civilization (Noel, 2002).

In boarding schools American Indian children were often harshly punished for speaking their language or practicing any of their tribal customs. Most tragically, traditional American Indian parenting practices were severely compromised. Not only were these children denied the opportunity to be taught natural ways of living, they were also denied ongoing contact with their loved ones and opportunities to be nurtured through traditional childrearing practices. When the children returned to their communities after lengthy separations, they were welcomed, at times, by family members who did not know how to relate to them (Evans-Campbell, 2008). Disruptions in family living have produced generations of American Indian parents with a sense of uncertainty about how children should be raised (Evans-Campbell, 2008).

The recent history of American Indians in the United States has been associated with a number of dramatic and distinctive risk factors, including acculturation

> stress, repeated traumatic loss, poverty, social disorganization, political disempowerment, high rates of school dropout, alcohol abuse, chronic health conditions, and corresponding decline in resources, opportunities, and support. (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006, p. 195)

Further research has indicated a relationship between historical trauma and the development of problem behaviors due to an increased number of risk factors in comparison to the number of protective factors such as positive thinking (Dunst & Trivette, 1994; Whitbeck, Adams, Hoyt, & Chen, 2004). However, many American Indian youth do become engaged in pro-social activities and successfully avoid problem behaviors with involvement in ceremonies, speaking Native languages, and conforming to traditional values (Beauvais, 2000). Thus, behavioral problems can be deterred and social success established by the presence of positive outcomes and with the resilience of American Indian people (LaFromboise, Hoyt, Oliver, & Whitbeck, 2006).

Native American culture, communities, and family have been identified as contributing factors of resiliency leading to the well-being of youth (LaFromboise et al., 2006; Hawkins & La Marr, 2012). According to Gordon (1996), an important trait of resiliency is self-esteem, which can be described as the belief that there is no distinction between one's perceived self-image and actual self-image. Self-esteem is thought to serve as a psychological protective factor against the harmful effects of stress and the tendency to engage during adolescence in risky behavior, such as drug use and poor academic performance (LaFromboise et al., 2006). People with high self-esteem and a strong sense of self-efficacy were reported to have positive feelings about themselves, their social environment, and their ability to deal with life's challenges (Werner, 1992; Whitesell, Mitchell, & Spicer, 2009).

In contrast, a recent study of Native American college students identified historical trauma as a correlate of negative cognitive abilities (i.e. distracted thoughts about people they have lost due to alcoholism) and depression (Tucker, Wingate, & O'Keefe, 2016). Research from Tucker et al. (2016) associated depression with historical trauma and proposed methods to increase resiliency and self-esteem. Tucker et al. suggested cultural competence training for educators and clinicians to better understand the continued transmission of historical trauma and its effects on the current generation of Native American people. Native Americans today face a future of continued loss of identity and self-esteem as a result of more than a century of repeated maladaptive behaviors and dysfunctional abilities to cope with the stress caused by the many disparities of life.

Life Skills

In the 1960s, Winthrop Adkins (1970) questioned conventional counseling practices for disadvantaged adults and adolescents, which resulted in a collection and categorization of common problems in helping them deal with their problems more efficiently. Adkins (1970) suggested there was not a program to assist those students and workers with life skills, nor was there a program to help develop psychological and social skills to address life's problems on the job, in the home, and in the community. Out of his concern for these marginalized groups, Adkins pioneered life skills education. He used small-groups and combined teaching and counseling as the means to introduce a new curriculum of applying knowledge to practical life situations.

Adkins (1970) created life skills education to first solve problems and gather information from life experiences. Life skills education consists of a problem-centered,

experience-based curriculum model, which Adkins based on the work of John Dewey and Donald Super. The small-group method provides an opportunity for the student to acquire new experience, knowledge, and skills as he or she gains practice in solving problems in living. The group method also created peer support in order to build self-confidence of the participants. Students are also introduced to a style of learning about themselves in order to build on personal strengths. This process led to the development of a life skills program for disadvantaged adolescents living in New York City, N. Y.

The life skills program was designed to be implemented with adults and/or adolescents enrolled in basic education, vocational education, or on-the-job training (Adkins, 1970). The program is divided into four stages: 1) Stimulus, 2) Evocation, 3) Objective Inquiry, and 4) Application. These stages were designed to enhance motivation and apply knowledge of past learning. The Adkins Life Skills program (1970) uses a life problem model that integrates counseling and teaching to facilitate problem solving through application.

Life skills have also been viewed through a multidisciplinary lens, shifting from a medical perspective of pathology to a model of psychological functioning regarding competence in daily living tasks (Gazda & Brooks, 1985; Wine & Smye, 1981). However, Gazda and Brooks (1985) quoted Adkins in a statement that also described life skills as "the kind of behavior-based psychological learning needed to help people cope with predictable developmental tasks" (p. 2). In addition, Gazda and Brooks (1985) and Himsl (1973) have suggested that problem solving has been a common theme within the life skills education curriculum. Similar to Adkins (1970), Himsl (1973) provided a definition of life skills as "problem-solving behaviors [that are] appropriately and responsibly used in the management of personal affairs" (p. 13). Furthermore, life skills

are generally acquired through social learning during childhood and early adulthood, but individuals can fail to adequately develop life skills due to a variety of environmental, cognitive, or emotional factors (Himsl, 1973; Prajapati, Sharma, & Sharma, 2017).

The term *life skills* was also determined by consensus of various life skills programs from WHO to refer to a person's psychosocial skills. According to WHO (1999), keywords used to describe psychosocial skills include personal, social, interpersonal, cognitive, affective, and universal. Life skills curriculum has taken various forms since its conceptualization; life skills are more recently defined as the skills necessary for a person to overcome everyday obstacles (Gazda, Ginter, & Horne, 2001; Koruklu, 2015).

Research on Life Skills Curriculum in P-12 Schools

King (1999) described a life skills program as one that develops and enhances social skills, self-esteem, and empowers people to engage in acceptable behaviors. King's study on "The Effect of a Cultural-based Life Skills Curriculum on American Indian Adolescent's Self-esteem and Locus of Control" explored 3 groups of Native American elementary students through a pre-and posttest experimental design. One group received a personal and social responsibility curriculum with an embedded American Indian Life Skills Development Curriculum component, a second group received a personal and social responsibility curriculum only, and the third group did not receive any intervention. Two instruments measured the effect of the coping skills curriculum on self-esteem and locus of control. Significant conclusions from the study were that the Life Skills group showed the least increase in failed courses and least absences. The effect of the treatment by gender on self-esteem indicated that male students increased self-esteem post scores at the end of the treatment.

Wurdinger and Rudolph's (2009) study of life skills through project-based learning (PBL) indicated that students, alumni, teachers, and parents of a Minnesota charter school ranked skills such as creativity and the ability to find information higher than academic skills. Alumni of the school reported that 50% were college graduates and that they rated academic skills such as test taking and note taking lower than the life skills taught during their time there. Wurdinger and Rudolph asserted that a better indicator for success of high schools should be college graduates and not ACT test scores. Furthermore, the authors contended that academic skill development is less important than life skill development such as creativity and problem solving.

The PBL approach allows students to take control of their learning through projects that are meaningful and related to their life. The theoretical structure of the PBL curriculum came from Dewey's (1939) "Pattern of Inquiry." Dewey (1939) stated that this approach was similar to scientific reasoning and related it to a four-step process of problem solving. He explained that a relevant problem was discovered and there was a desire to solve it (step 1). This led to the creation of a plan (step 2), testing of the plan (step 3), and finally, the evaluation and reflection of the process (step 4). This approach was student centered and allowed for considerable student development in areas of life skills such as time management, problem solving, and communication (Wurdinger & Rudolph, 2009). Wurdinger and Rudolph's (2009) study used a category of life skills under the heading of Thinking Skills and Personal Quality Skills as identified by the Secretary's Commission on Achieving Necessary Skills Report (1991). Results from the study indicated that 85% of the questionnaire respondents stated that life skills were the most important items learned in this PBL approach.

The PBL approach to learning may create a real world environment for student learning, but many schools have fallen behind in traditional teaching practices in order to stay ahead of the technological curve (Wurdinger & Rudolph, 2009). Kiran, Seshadri, and Thomas (2007) contended that educational systems today are catering to newly emergent informational based societies. This environment created by industry standards have failed to develop students' abilities to face, understand, and negotiate everyday life situations.

Kiran et al. (2007) further indicated that the home lives of a younger generation of parents do not provide the model necessary to teach children about day to day realities in an effective manner. Therefore, youth have created their own behavioral approach to solving issues which have resulted in risk taking life style choices. Kiran et al. acknowledged the realization of this deficiency by WHO in its definition of life skills. According to WHO (1997), life skills is defined as the competencies of adaptive and positive behavior that enable people to deal with the challenges of everyday life.

Kiran et al. (2007) indicated a collaborative approach to curriculum was used to successfully integrate social development. Vygotsky's (1978) social constructivism philosophy was used to create a community of learners that also created a sense of reality and knowledge in the classroom. By engaging the students socially, they were better able to create solutions to real world problems. Students constructed their own sense of problem solving by managing the issues they face in a facilitated classroom environment.

Another secondary classroom study by Vicary et al. (2006) investigated the effectiveness of a life skills module on substance abuse prevention of high school students. The 3-year longitudinal study utilized three different levels of implementation of the module: 1) a separate life skills class; 2) a life skills curriculum infused into the

structure of the classes; and 3) no treatment. While results from this study indicated no significant results between the two life skills approaches, results for female participants were better overall. After a series of life skills lessons, the researchers suggested that the program was more effective using a real world approach. These outcomes support other life skills research that utilized the methods of Piaget's and Vygotsky's constructivism philosophies whereby students create their own style of learning through experiences.

Life skills training has been described as one of the best known programs to target the risk and protective factors of drug use by promoting social skills, personal self-management skills, and drug resistance skills (Botvin, Baker, Dusenbury, Botvin, & Diaz, 1995). A decision-making skills measure of a study by Vicary et al. (2006) used five items that assessed the participant's ability to follow a logical decision-making strategy (get the information needed to make the best choice, make the best choice, and then do it, etc.). The results of the study showed that the life skills training program improved decision making, communication skills, coping skills, normative beliefs, attitudes, and assertiveness skills (Vicary et al., 2006).

Curriculum studies have also been conducted with life skills infused into the regular class curriculum (Smith et al., 2004). Smith et al. described infusing life skills into the regular curriculum as the process of combining content from several disciplines into a lesson that covers one specific theme. The ideal form of infusion follows a constructivist philosophy of using a life centered approach for each lesson rather than using the parameters of the subject matter. Smith et al. stated their research did not show significant results between the course teaching standard life skills and those with infused life skills. The results did show better results for the females in the area of social skills (Smith et al., 2004).

Kivunja (2015), citing the Partnership for 21st Century Skills (2009), argued that students need more than the traditional teachings of the 3-Rs (Reading, Riting, and Rithmatic). Kivunja further asserted the need for students to learn critical thinking skills, problem-solving skills, collaboration, and creativity in order to meet the demands of the technological age. Trilling and Fadel (2009) took the Partnership for 21st Century Skills further and stated that students need to learn Traditional Core Skills (3-Rs) plus Learning and Innovative Skills, Career and Life Skills, and Digital Literacies Skills. Kivunja (2015) used this model as the basis for a new learning paradigm. Kivunja described this new learning paradigm as having 5 areas of emphasis, which includes: 1) Flexibility and adaptability skills; 2) Initiative and self-direction skills; 3) Social and cross-cultural skills; 4) Productivity and accountability skills; and 5) Leadership and responsibility skills.

A life skills curriculum that utilized a new paradigm for a specific cultural group was the American Indian Life Skills Development Curriculum created as a result of research conducted by LaFromboise in 1987. The research was later developed and implemented a culturally appropriate Life Skills curriculum for Zuni Pueblo high school students (LaFromboise & Howard-Pitney, 1995). The community in the Zuni Pueblo had experienced a high rate of suicides and suicide attempts. LaFromboise introduced an experimental research design in which the experimental group received the Life Skills curriculum while a control group did not receive the treatment. The research hypothesized that the experimental group would have better results in suicide prevention and problem solving than the control group. The study reported significant differences between the two groups regarding suicide probability, hopelessness, and depression at posttest (LaFromboise & Howard-Pitney, 1995). While the results did not indicate a

posttest difference for problem-solving skills, behavioral observations did indicate better results with the students who received the curriculum than those who did not. The researchers concluded a cultural reasoning for this occurrence was that students may have reported lower scores for skills as a result of cultural humility. LaFromboise and Howard-Pitney (1995) discussed the effectiveness of the culturally appropriate Life Skills curriculum and recommended more and earlier life skills programs.

A study conducted by Lindsey and Mabie (2012) focused on African-American male students in a California high school who were required to take a life skills course. The course design, based on the Motivational Framework for Culturally Responsive Teaching by Ginsberg and Wlodkowski (2000), created four tenets: 1) establish inclusion, 2) build security, 3) enhance meaning, and 4) engage competence. The main aspect of the life skills curriculum was to craft and link the lessons to the identities of the students. The teachers also sought to establish a sense of security for the students while raising their expectations of the students. This sense of security created a higher sense of self-efficacy for the students by increasing their self-esteem. The students were able to relate to the curriculum, which allowed for an easy transfer of knowledge. The life skills curriculum was successful in raising student reading levels, which in turn raised grade point averages of all the participants.

Many schools face escalating problems which impede academic focus. Anxiety and depression are common physiological disorders with a correlation to poor academic performance (Ghasemian & Kumar, 2017). Life skills education has many applications for schools to assist students and graduates in helping them learn to think critically and solve problems in today's constantly changing society and job markets (WHO, 1999).

Life skills embedded into school's curriculum have been shown to decrease the problematic areas of academics associated with maladaptive behaviors.

Life Skills in College Studies

Cullinane (1985) conducted a study to examine the effects of the Adkins Life Skills Program on the career development of community college students. Two different experimental groups of students participated in a college course that used the life skills program as its core curriculum. One group consisted of students who were placed in a mandated remedial program known as "College Skills" because they had low reading scores. The other group consisted of typical mainstream students who were taking the life skills course for college credit. Measures used to assess career development progress included Super's Career Development Inventory and the behavioral and knowledge learning objectives of the life skills. Pre-and posttest scores on these measures for the experimental group were compared to scores of two comparison groups of community college students. The results indicated that both experimental groups, remedial and mainstream students, had significant gains in readiness for career choice, knowledge of preferred occupation, certainty of choice, attitude toward career choice, planning and exploration, self-assessment and use of resources for career exploration.

Another college study by Chweu and Schultz (2010) suggested that mentorship in life skills could increase student success and pass rates. A factor analysis was used to determine the most important issues regarding mentorship in life skills. By looking at the mentor as a facilitator for success, Chweu and Schultz reviewed the work of O'Hara, Bourner, and Webber (2004), who indicated the set of life skills as follows:

- Questioning skills – to help people to find their own solutions to their problems

- Active listening skills – to communicate to people that they are being understood; to help them work out their own solutions but not give solutions; to help them clarify their situation, the facts, their thoughts and their feelings; and to hear without judging or evaluating
- The ability to give and receive feedback – to help people learn and develop, to increase their self-esteem and to make them feel valued
- An understanding of the group process – to appreciate the difference between task and process and between helpful and sabotaging behaviors
- Creative problem-solving skills – to provide a range of tools to help the students when they are stuck
- The skill of reflection – to plan for future action and to help derive the learning from action
- Understanding the process of learning – to enable people to appreciate the variety of ways in which people can learn. (p. 686)

The factor analysis applied a data-reduction or structure-detection technique to pull out the underlying factors in the data set. The research showed that students received the mentorship program well and were encouraged by the communication skills of the mentor. The mentors communicated effectively and also encouraged the students to make their own decisions based on the guidance of the mentor. The study indicated that students benefited academically and personally from the life skills program in the areas of motivation and communication. Chweu and Schultz (2010) recommended student support services at higher education institutions implement life skills programs to improve success and completion rates.

A study by Efthimiadis-Keith (2007) introduced a life skills module for special admittance college students needing academic support. The study indicated through a student questionnaire that the module was well received by the students and proved to increase student success. The life skills approach used the social constructivism philosophy of Vygotsky to construct learning created by student collaboration and incorporated personal experiences as a means of learning. Vygotsky's approach to academic leadership theory was emphasized and the teachers took on the responsibility to lead students to develop leadership skills and to improve and transform the college/university. This model of life skills, as indicated by Efthimiadis-Keith, cultivated modern leadership characteristics in students and equipped them with the skills to become agents of change in their respective communities.

Further research by Bushong (2009) showed that colleges and universities are preparing students for more than a career, but for life, which is more than just a job at graduation. This sentiment prompted colleges to offer more life skills courses. In doing so, Vermont College has not only required students to take life skills courses, but has incorporated it into the college's general education courses. At the time of the study, Bushong stated that freshmen were participating in life skills, but all levels of student classification would learn the curriculum.

A community college study by Holland (2005) stated that over the last century, community colleges have adapted to the societal needs of its constituents. Many students enrolled at community colleges are first-generation students, the first in their family to attend (Holland, 2005). According to McConnell (2000) and Schuman (2005), many community college students have low academic skills due to the lack of preparedness by the public school system and the lack of guidance from family members. Many colleges

have created academic programs to support the needs of its students. However, there continued to be a need for more innovative approaches that could also be used as social strategies to assist with needs other than academics. Holland (2005) claimed that the family structures of students from low-income, first generation college students perpetuated the disparities of education amongst themselves.

Holland (2005) introduced a skills model that examined the life-style influences for at-risk students and further introduced interventions to assist students. The model had four sections: 1) family life, 2) intimate relationships, 3) the world of work, and 4) how a student's belief system impacted their perceptions and approach to life. Discussion of the issues of family conflict better prepared students to solve problems within his or her family and allowed them to focus on their educational attainment. The model also included personal behavior skills that addressed issues of self-esteem, resiliency from challenging life experiences, and positive and negative self-talk. The intimate relationship skills provided ways to improve the home life for more support in the educational setting.

The world of work was an important part of the curriculum that focused on adaptability to change, communication, and problem solving (Holland, 2005). Additionally, the work-related skills emphasized the use of proper language to be used in a work setting and for the students in the educational environment. Those students who lacked academic skills often lacked the ability to distinguish between the environments and the usage of Standard English. Finally, the belief systems approach supported student's abilities to use a positive mental thought processes to overcome unexpected setbacks. Holland suggested that as colleges expand to include more minority students, there will be a further need to expand services for issues of family life skills.

Life Skills in Native American Studies

Life skills in Native American research by Mainor (2001) described a community based model of support for tribal colleges to strengthen and promote families' involvement in college activities. Mainor stated that the typical tribal college student was a single mother of two or three children. Mainor cited a questionnaire by HeavyRunner and Morris (1997), which indicated family as the primary source of strength for Montana tribal college students. A study of Montana tribal colleges demonstrated a need for social work and educational practices to help students succeed and persist through college. A family-based approach was used to adapt a Head Start Family Support Model to strengthen families' resilience to overcome stressful situations including financial issues, substance abuse, and domestic violence. This was groundbreaking work because HeavyRunner and Morris took well established ideas that have succeeded with Head Start children and demonstrated that the same approach was equally valid for students at colleges and universities (Mainor, 2001). The program consisted of four components which were: 1) Cultural/family activities; 2) Counseling; 3) Mentoring; and 4) Life skills. At the time of publication of the article in the Tribal College Journal, the study was not concluded.

LaFromboise (2006) described her previous American Indian Life Skills Development Curriculum with the Zuni Pueblo in 1987 to assist with teen suicide prevention efforts in updated work. LaFromboise noted that past researchers had not had success with ethnic minority intervention programs utilizing activities targeted for mainstream communities. Native Americans are more receptive to programs that involve their norms, world views, values, and communication styles. LaFromboise and a host of Zuni community members developed an American Indian Life Skills Development

Curriculum that included problem solving, self-esteem, communication, goal setting, and stress management.

Posttest results from the study showed an increase in positive psychological dimensions that resulted in reduced feelings of helplessness and suicidal thoughts (LaFromboise, 2006). A behavioral study showed an increase in problem-solving abilities and suicide intervention skills. Further studies of the American Indian Life Skills Development Curriculum include the Sequoyah School of the Cherokee Nation in Oklahoma and the Blackfeet Tribe of Montana which have resulted in increased protective factors of personal self-care, belongingness, and spiritualism. These and other studies have shown the Life Skills curriculum was easily adapted and effective with other Native American tribes. The varied success of the curriculum lends to the validity and sustainability of the curriculum.

In light of other research indicating less effective behavioral health programs with Native American populations, LaFromboise and Rowe (1983) showed their research on skills training for bi-cultural competence for mental health services was needed to encourage more participation from Native Americans to receive these services. The research showed that many Native Americans were apprehensive about mental health services because it is not seen as culturally responsive to their needs. In particular, LaFromboise and Rowe asserted that a skills training program was needed for Native Americans that focused on assertion training. The researchers claimed that assertive behavior is linked to social problem solving. LaFromboise and Rowe contended that the proactive problem-solving process for Native Americans has been lost due to the effects of historical trauma. The trauma not only has caused many disparities in economic and health factors, but has also led to social problem-solving disparities.

Due to the effects of historical trauma, particularly past reliance on government agencies, Native Americans' decision making processes of problem identification, problem definition, personal feelings about the problem, generating alternatives, and evaluating the effectiveness was found to be foreign in some cases (LaFromboise & Rowe, 1983). Assertion training as it related to personal efficacy was linked to the effects of why Native Americans were not comfortable with mental health services. Many Native Americans, due to the loss of problem solving as described by LaFromboise and Rowe, lacked confidence and self-esteem. The American Indian Life Skills program focused on areas of self-esteem, personal feelings, problem solving, self-destructive behavior and assertiveness.

Another Native American life skills program designed by the Saskatchewan Newstart Life Skills program defined these skills to mean problem-solving behaviors appropriately and responsibly that are used in the management of personal affairs (Curtiss, Warren, & Saskatchewan NewStart, 1974). This definition included a person's behaviors since they were useable in many life situations. According to the Newstart program, the appropriate use of behaviors required an individual to adapt the behaviors to time and place. Responsible use required maturity, or accountability. Furthermore, the program indicated that behaviors used in the management of personal affairs and life skills should be applied to five areas of life responsibility identified as self, family, leisure, community, and job (Himsl, 1973, p. 13). The Saskatchewan life skills program was cofounded by Adkins and Himsl, replicating aspects of the Adkins Life Skills approach to serve a disadvantaged population with life skills on the job, in the home, and community (Himsl, 1973).

Life Skills Curriculum

Life skills education has been used in many areas for social development. Allen and Williams (2012) described a life skills curriculum that utilized group work with youth who were transitioning from foster care to independent living. Particularly, this program focused on youth who "aged out" of foster care and the impact this effect had on that person's self-esteem. Life skills were shown to be crucial in not only providing skills for everyday living, but it also provided self-esteem and problem-solving skills as well. Allen and Williams (2012) discussed the importance of life skills to not only provide skills to manage a person's job, home life, money, and education; these acquired skills helped these young people to build capacity to believe in themselves and carry out action plans. Allen and Williams emphasized the importance of positively managing failure and overcoming adversity in order for the youth to transition from foster care to independent living.

Bellotti (2005) described a similar life skills program designed to help inmates being released; this program was developed by the Norfolk County Sheriff and the St. Francis House in Boston, MA to address recidivism of offenders and a growing homeless population. The program presented a new paradigm of the delivery of mental health and substance abuse through a 14-week life skills program. Inmates had previously been released to half-way house facilities with no transitional education, the new paradigm provided education to prepare the inmate for release and then after release. The Moving Ahead Program (MAP) included life skills and career development designed to address issues of addiction, post-incarceration, and coping skills. The program primarily served adult male offenders with drug and alcohol related problems. Participants were selected by their release date from the Norfolk County Detention Center. The 14-week program

was divided into two, 7-week sections. The first section began prior to release and the program was administered by the Norfolk County Sheriff's Department. The second section was implemented after release and administered by the St. Francis House. The program reported success in that 61 of the 68 participants completed the 14-week program and 100% of those who completed found employment.

A meta-analysis of a life skills program that worked with incarcerated subjects conducted by Cecil, Drapkin, Mackenzie, and Hickman (2000); the researchers evaluated previous research and indicated that life skills have become an important component to correctional education. Cecil et al. gathered from the studies that increased educational levels and enhanced life skills would decrease offender's recidivism by increased employment. Offenders may have difficulties in areas of controlling anger and, establishing interpersonal relationships; the life skills program was designed to address skill deficiencies that might hinder the attempts of offenders to function successfully in everyday life. The actual components of the life skills programs in the research evaluated by Cecil et al. varied widely. Some of the common components include budgeting, building interpersonal relationships, conflict resolution, tax and credit management, job search skills, cultural diversity training, anger and stress management, decision-making and goals setting. While this analysis did not produce significant results, conclusions from the previous research with life skills training only showed a reduction in recidivism. However, when compared against educational programs that included cognitive skills as well as life skills, the participants' recidivism of those with more training was lower. In reviewing other research Cecil et al. recommended focused research with rigorous evaluations that included statistical tests to determine the significance of the effects between life skills programs and life skills plus other forms of educational training.

Horn (2001) conducted a study regarding development of general life skills for managing daily living. Horn contended that a complete list of the skills and knowledge important for people to possess would be unmanageably large and nearly uninterpretable. However, Horn proposed a checklist derived from the Ansell-Casey Life Skills Assessment (ACLSA), which adopted principles of psychometric measurement and assessed the person's fundamental attributes, behaviors, or traits. Horn posited that the checklist from the ACLSA was not an assessment of behavioral performance; it was more an assessment of a general life skills ability. The ACLSA assessed this fundamental "life skills" construct using test items that sampled various life skills domains. These domains represented the expression of general life skills ability with in categories of adaptive behavior (e.g. managing resources like money, adapting to life, and demands like problem solving).

Life skills training has been increasingly recognized as an important preventive approach for offsetting the underlying factors of vulnerability that contribute to high-risk behavior among adolescents (Hamburg & Takanishi, 1989). These broadly focused programs are designed to teach social competencies and life skills needed to foster positive social, emotional, and academic development. They set out to enhance protective factors such as self-esteem and to provide students with general social competence skills such as problem solving (Danish, Galambos, & Laquatra, 1983).

Low self-esteem among low-income ethnic groups encourages high risk behaviors which further destructive behavior among youth (LaFromboise, 2006). The American Indian Life Skills Development Curriculum, also known as the Zuni Life Skills Development curriculum, is a school-based, culturally sensitive, suicide-prevention program for American Indian adolescents. The curriculum was tailored to American

Indian norms and values, and was designed to reduce behavioral and cognitive factors associated with suicidal thinking and behavior. The Zuni Life Skills Development (ZLSD) curriculum (LaFromboise, 1991) was structured around 7 major units: (a) building self-esteem, (b) identifying emotions and stress, (c) increasing communication and problem-solving skills, (d) recognizing and eliminating self-destructive behavior such as pessimistic thoughts or anger reactivity, (e) receiving suicide information, (f) receiving suicide intervention training, and (g) setting personal and community goals (LaFromboise, Howard-Pitney, 1995).

LaFromboise and Howard-Pitney (1995) reported that among American Indians/Alaska Natives from age 15 to 34, suicide was the second-leading cause of death (U.S. Congress, Office of Technology Assessment, 1990) as a result of a lack of cultural ties, increased hopelessness, and low community involvement, which Life Skills aimed to improve. In 1987, the Zuni Pueblo reservation in New Mexico had approximately 9,000 tribal members in which LaFromboise and Howard-Pitney claimed that the Zuni people became concerned with the sudden rise in the number of youth and young adult suicides. The researchers believed the increase may have been associated with the fact that Zuni youths were losing touch with their traditions as families and communities became more fragmented. For Zuni people, suicide was an especially distressing incident because it was forbidden to speak of in their traditional culture (LaFromboise & Howard–Pitney, 1995). Zuni leaders initiated the development of a suicide prevention program for students in high school with the goal of reducing the risk factors related to suicidal behavior.

LaFromboise (1996) indicated that ethnic populations required culturally sensitive training programs, such as the American Indian Life Skills Development Curriculum, to

teach students ways to cope with situations that contribute to behavioral and emotional problems. Two Indian communities, the Zuni Pueblo and the Cherokee Nation had utilized a life skills program for their curriculum. LaFromboise asserted this approach was useful for all students, not just those with behavior issues, to broaden their coping skills and become better problem solvers.

The ZLSD curriculum also served as an intervention tool for the Zuni Pueblo that consisted of lessons in self-esteem enhancement and life skills development (including problem solving, communication skills, goal setting, and depression, anger, and stress management) (LaFromboise, 2006). LaFromboise utilized risk and protective factors specific to American Indian youth suicide in the development of the skills training lessons of the curriculum. All sessions followed a social learning skills training format and contained material relevant to students in general, as well as students at risk for suicide. This tribal-specific intervention was implemented in language arts classes three days per week for one academic year. The ZLSD curriculum was found to reduce feelings of hopelessness, and suicidal thoughts and behaviors among Zuni students upon posttest results. A behavioral study of the efficacy of this intervention was also incorporated and found to increase the student's problem-solving skills and suicide intervention skills (LaFromboise, 2006).

Problem Solving

In the 1960s and 1970s, Shure and Spivack (1982) conducted some of the earliest and most significant programmatic research in applied problem solving, which focused directly on psychological adjustment. Conceptualizing problem solving as a constellation of relatively discrete thought processes, Shure and Spivack (1982) pioneered research on

cognitive problem-solving skills within interpersonal situations, such as problem sensitivity, alternative solution thinking, causal thinking, and means-end thinking.

Within the realm of problem solving, D'Zurrilla and Goldfried (1971) originated the model of Social Problem Solving to include two general independent components of problem orientation and problem-solving abilities. Their approach broke problem solving down into a five-stage model: 1) general orientation to the problem, 2) problem identification, 3) generating alternative solutions, 4) decision making, and 5) verification. Their concept of stages of problem solving allowed other researchers to identify specific problem-solving activities within each stage.

The problem orientation stage described the person's beliefs and feelings towards problems including their problem-solving ability (D'Zurrilla & Goldfried, 1971). This was also shown to be related to a person's motivation and self-esteem. Problem-solving abilities were the cognitive and behavioral activities that a person performed to find effective solutions or the ability to cope with the situation.

Within the model of problem solving, Phillips, Pazienza, and Ferrin (1984) found that decision making was the process a person used to identify, respond, and act in a decision-making situation. The most effective approach in the decision-making process was described to be the rational decision-making approach (Phillips et al., 1984). In this approach, processes such as systematic appraisal and logical deliberation were used in contrast to impulsive feelings and emotional stress. Phillips et al. concluded that students with a systematic and logical approach to rationalize decisions were better problem solvers.

The term *social problem solving* was described by D'Zurrilla, Nezu, and Maydeu-Olivares (2004) as a process of solving problems in the real world environment. The

social problem-solving model was identified as the most researched and assessed through an instrument (Social Problem-Solving Inventory-Revised) that measured problem-solving abilities. The term social did not intend to limit the study of problem solving, but to qualify the adaptive functioning in the real life social environment. As stated in the natural environment, problem solving was defined as the cognitive behavioral process whereby an individual identifies an effective solution for a specific problem encountered in everyday life. Problem solving was originally designated as either the concept of solving the problem or the solution implementation. However, the two processes were found to be different. Further research has concluded that problem solving refers to the process of finding solutions and solution implementation was the process of carrying out the performance. Furthermore, D'Zurrilla et al. redefined the model to include a five-factor model with two problem orientations and three problem-solving styles. The two problem orientations were identified as positive (adaptive functioning) and negative (maladaptive functioning). The three problem-solving styles were rational problem solving (effective problem solving), impulsivity/carelessness style, and avoidance style (dysfunctional problem solving). D'Zurrilla et al. also stated that in research and practice it was important to not only assess problem-solving abilities, but to also define the strengths and weaknesses of each component. According to D'Zurrilla et al. (2004) the process and outcome of problem solving must be distinguished:

> Process measures directly assess the general cognitive and behavioral activities (e.g., attitudes, skills) that facilitate or inhibit the discovery of effective or adaptive solutions for everyday problems, whereas outcome measures assess the quality of specific solutions to specific problems. Hence, process measures are used to assess specific strengths and deficits in social problem-solving ability, and

> outcome measures are used to evaluate problem-solving performance or the ability of a person to apply his or her skills effectively to specific problems. The assessment of social problem-solving abilities was facilitated by the Social Problem-Solving Inventory-Revised (SPSI-R), which included the redefined five factor model. (p. 18)

Instruments to Measure Problem Solving

The primary problem-solving instruments discussed in this section are the Problem-Solving Inventory, the Means Ends Problem-Solving Procedure, and the SPSI-R used in this research. Investigators have postulated the existence of stages of learning within the problem-solving process (D'Zurilla & Goldfried, 1971). Most problem-solving models include five stages which are general orientation, problem definition, alternative generation, decision making, and evaluation.

The Problem-Solving Inventory (PSI) developed by Heppner and Petersen (1982) was described as a 35-item Likert-type inventory. The instrument was described by the authors as a measure of "problem-solving appraisal," or an individual's perceptions of his or her problem-solving behavior and attitudes (Heppner, 1988). The PSI was derived from an initial pool of 50 items that were based on D'Zurilla and Goldfried's (1971) original social problem-solving model, which consisted of a general orientation component (later renamed "problem orientation") and four specific problem-solving skills (problem definition and formulation, generation of alternatives, decision making, and verification). The PSI identified a three-factor model of problem-solving abilities that included problem-solving confidence, personal control, and approach – avoidance style (Heppner & Petersen, 1982).

The Means Ends Problem-Solving Procedure (MEPS) is a measure of means ends thinking, which has three major components: 1) the ability to conceptualize the sequential steps or "means" that are necessary to satisfy a need or achieve a particular goal; 2) the ability to anticipate obstacles to goal attainment; and 3) the ability to appreciate that successful problem solving takes time or that appropriate timing is important for successful solution implementation (Platt & Spivack, 1975). Means end is the deliberate execution of a sequence of steps to achieve a goal. Many times the ability to anticipate the obstacle preventing achievement of the goal must initially be removed in order to achieve the desired end.

The SPSI–R five factor model of assessing problem-solving abilities was determined to show two problem-solving orientations and three problem-solving styles. The SPSI-R is a 52 item Likert scale inventory (D'Zurilla, et al., 2002). The problem-solving orientations were positive and negative and the styles were rational problem solving, impulsivity/carelessness style, and avoidance style.

The first orientation of two included in the SPSI-R was the Positive Problem Orientation Scale (PPO), which is a constructive, problem-solving cognitive set (D'Zurilla et al., 2002). Individuals with higher scores on this scale were more likely to: (a) approach a problem as a "challenge" (i.e., opportunity for benefit or gain) rather than a threat, (b) believed that problems are solvable (positive outcome expectancies or optimism), (c) believed in their ability to solve problems successfully (self-efficacy expectancies), (d) believed that successful problem solving takes time, effort, and persistence, and (e) committed themselves to solving problems rather than avoiding them.

The second orientation of the SPSI-R, in contrast to the PPO, was the Negative Problem Orientation Scale (NPO), which measures a dysfunctional or inhibitive

cognitive-emotional set. Individuals with high Standard Scores on this scale were more likely to: (a) view a problem as a significant threat to well-being, (b) doubted their own personal ability to solve problems successfully (negative self-efficacy expectancies), and (c) became frustrated and upset when confronted with problems in living (low frustration tolerance).

One of the three styles of the SPSI-R was the Rational Problem-Solving Scale (RPS), which assessed the rational, deliberate, and systematic application of effective problem-solving strategies and techniques. Higher scores on this scale represented individuals who carefully and systematically gathered facts and information about a problem, identified demands and obstacles, set a realistic problem-solving goal, generated a variety of alternative solutions, anticipated the possible consequences, and systematically compared and judged the alternatives. After these initial steps the individual chose and implemented a solution while carefully monitoring and evaluating the outcome. This scale not only assessed the knowledge of effective problem-solving skills, but also the extent to which individuals actually used them when confronted with problems.

A second style of the SPSI-R, was the Impulsivity/Carelessness Style Scale (ICS) which indicated a deficient problem-solving pattern characterized by active attempts to apply problem-solving strategies and techniques that were narrowed, impulsive, careless, hurried, and incomplete (D'Zurilla et al., 2002). Higher scores on this scale indicated individuals who considered only a few solution alternatives, often impulsively going with the first idea to come to mind resulting in scanned alternatives and consequences quickly, carelessly, and unsystematically. These individuals also monitored and evaluated solution outcomes carelessly and inadequately.

The third and final style of the SPSI-R was the Avoidance Style Scale (AS) which assessed another defective problem-solving pattern characterized by procrastination, passivity or inaction, and dependency (D'Zurilla et al., 2002). Individuals with higher scores on this scale are more likely to avoid problems rather than confront them, put off solving problems for as long as possible, wait for problems to resolve themselves rather than attempt to solve them, and attempt to shift the responsibility for solving their problems to others.

The standard scores of the SPSI-R ranged from 47 to 135 for PPO, and 68–165 for NPO on the Orientation, while for the Styles scores ranged from 52–144 for RPS, 61–177 for ICS, and 69–156 for AS (D'Zurilla et al., 2002). Scores in the range of 86–114 are considered to be the 'norm group average' for each scale. A score of 100 is considered the median with scores above or below the median distributed with a 15 point standard deviation plus or minus indicated above or below average.

The problem-solving process assessment includes self-report instruments that provided information on a person's attitudes, strategies, and techniques (D'Zurrilla et al., 2004). Problem-solving inventories also include the level of which a person possesses the skills. All of the assessments combined are calculated to score the person's positive and negative problem orientation and his or her rational problem solving and impulsive/carelessness style and avoidance style. A summative evaluation indicates the person's total SPSI-R score in relation to adaptive or maladaptive problem-solving abilities.

Problem-solving behaviors have been investigated by Hay, Byrne, and Butler (2000) with the Attribution, Behavior, Life skills Education (ABLE) curriculum that incorporated problem solving and conflict resolution to evaluate adolescents' formation

of self-concept. Hay et al. (2000) defined self-concept as the descriptive aspect of the self (e.g. "I do well on reading tests") while self-esteem referred to the evaluative aspects (e.g. "I like reading"). The research utilized an experimental design with two treatment groups and a control group. The adolescents in the treatment group of the study made significant improvements in the areas of self-concept as a result of conflict-resolution and problem-solving skills.

A different instrument developed to assess self-perceptions of interpersonal problem-solving behaviors and attitudes is the Problem-Solving Inventory (PSI), which was constructed to measure each of the five problem-solving stages developed by D'Zurilla and Goldfried (1971). The original instrument was developed and standardized on a college population comprised principally of freshmen and sophomores. The PSI included a self-rating questionnaire on which low scores indicated attitudes and behaviors typically associated with "effective" problem solving. A factor analysis was utilized to derive one's self-rating on three distinct constructs: problem-solving confidence, approach–avoidance style, and personal control. However, scores on these factors were not considered synonymous with an actual level of problem-solving skills (Corda, 1991).

Previous research has indicated that PSI factors do demonstrate some relationship to classroom achievement. In addition, "PSI factors may bear a relationship to achievement variables such as standardized test scores and overall grade point average, which can be considered barometers of demonstrated competence" (Corda, 1991, p. 7). Results from the study indicated a correlation between effective problem solving and higher academic performance.

Another study on the PSI by Suzuki and Ahluwalia (2004) reviewed Heppner, Witty, and Dixon's (2004) meta-analysis of the past two decades of research on the

Problem-Solving Inventory (PSI). Suzuki and Ahluwalia (2004) determined that the PSI could be used for problem-solving appraisals as well as for psychological diagnosis, treatment, and evaluation. Heppner et al. (2004) stated that a review of the literature of the PSI studies revealed that the majority of the subjects was Caucasian. They suggested that more studies should be conducted with ethnic minorities. The researchers noted a cultural bias with the concept of identity negotiating, in which a minority respondent may have to decide between two competing cultural norms of decision making. In addition, the researcher included a recommendation that cultural responses to collective problem solving may be better addressed. The PSI measured an individual's problem-solving abilities, but did not take into account the cultural norms of minorities to solve problems as a community.

In a study on 21st century skills conducted by Trilling and Fadel (2009), students were taught from a pedagogical paradigm shift where technology was used as an education tool. The researchers found that students graduating at all levels, from public schools to universities, lacked most of the skills needed in today's industries. These skills include critical thinking, problem solving, effective communication, creativity, leadership, professionalism and collaboration. Trilling and Fadel (2009) proposed that "In our recently arrived Knowledge Age, our world of connected knowledge work, global markets, tele-linked citizens, and blended cultural traditions, demands a fresh set of skills" (p. 16). Trilling and Fadel argued that "Achieving education's goals in our times is shaped by the increasingly powerful technologies we have for communicating, collaborating, and learning" (2009, p.16). Students have become critical thinkers and problem solvers and have acquired skills for their success in workplaces, trades, occupations, and professions of the 21st century, while the standard educational settings

have fallen behind (Kivunja, 2015). Graduates will learn these skills, as the job market now demands it.

In Cobo (2013), it was cited that Levy and Murnane (2004) analyzed the most universally needed competencies for a modern economy in a longitudinal study spanning the period from 1960 to 2000. The "expert thinking" profile was used to describe a person who was capable of working in a changing environment by utilizing creativity, communication, collaboration, and problem-solving skills (Cobo, 2013). "A Nation at Risk: The Imperative for Educational Reform" (Gardner, 1983), compared the performance of American students and the American educational system to those of other industrialized nations. Cobo (2013) further cited that Gardner (1983) documented the importance of problem-solving skills of everyday life; understanding the computer as a tool to deliver information, computation, and communication. Despite these tools, people still are in dire need of problems-solving skills in order to better communicate and collaborate.

Gencel (2015) inferred that learning styles were similar to the approaches and levels of problem-solving skills in that each differ from individual to individual. He defined "problem" as the complexity faced in any situation, and the term "problem solving" was the process of overcoming that complexity. Gencel reviewed Heppner's process of problem solving and the five constructs. The first construct was to encounter a problem and to specify a general approach to deal with it and the second step was to identify the problem and limit it. The third step was to brainstorm solutions to the problem, while the fourth step was to choose the best solution from among the options. The last step was to assess whether the solution solved the problem or not (Cobb & Steffe, 2011). According to D'Zurrilla's (2002) impulsivity style, an individual may

adopt a hasty approach in the problem-solving process which contrasts Heppner's process. During this approach, the first idea that is developed is used. Consequently, in this approach, a person does not consider the problem completely and weight all the possible outcomes of the solutions. The hasty approach was regarded as inferior when compared to other approaches (Cobb & Steffe, 2011; Heppner & Petersen, 1982).

Samson (2015) indicated that creative problem solving was a teaching method that utilized student engagement to find answers to life's real world problems. An aspect of the creative problem-solving teaching method, as described by Samson was self-directed learning. Motivation was also associated with this, in which the students took a more active role in their education by formulating goals, identifying resources, implementing strategies, and evaluating outcomes. Samson referenced Maslow's (1954) idea of self-actualization and self-directed learning and increased the student's motivation to reach their full potential. This form of problem solving demonstrated a student's readiness to learn and as a result reinforced the need for the instructor to serve as a facilitator instead of a teacher (Samson, 2015). The creative problem-solving approach also incorporated the problem based learning style in which students used real world problems to work instead of lecture based teaching. Three triads were related to solving these real world problems that included the Fundamental Triad (familiarization, functionality, and testing), Harmonizing Structure (communication, visualization, and collaboration), and Theoretical Environment (narrative, participation, and inquiry).

Heppner and Petersen (1981) conducted an exploratory factor analysis to examine the problem-solving process and validate the development of a Problem-Solving Instrument (PSI). Reliability and validity was established for the 32-question PSI through test-retest and pre-and posttest process on four samples of college students.

Heppner and Petersen stated that five stages were found to be common to most models of problem solving, which were: 1) Orientation, 2) Definition of Problem, 3) Generation of Alternatives, 4) Decision Making, and 5) Evaluation. Based on the factor analysis testing, Heppner and Petersen identified three factors of significance which were: problem-solving confidence, avoidance – approach style, and personal control. They compared the PSI to other problem-solving instruments such as the Level of Problem-Solving Skills by Heppner (1979), Rotter's (1966) Internal – External Locus of Control, Myers-Briggs Type Indicator by Myers (1962), the Means-End Problem-Solving Procedure by Platt and Spivack (1975), and Unusual Uses Test by Torrance (1966). Heppner and Petersen (1981) indicated the previous problem-solving instruments lacked the constructs of applied problem solving. The results of the study raised questions about the ability to enhance a person's problem-solving skills and focused on the three underlying dimensions identified in the study associated with problem solving in general.

In a study about problem solving, Gregg (1998) discovered that making a decision eliminates a divergence of paths. Through an observational study that implemented a life skills curriculum to three groups of high school students, Gregg found that each path had inherent benefits and risks. Results from the study indicated that effective decision makers identified the benefits and risks, weighed them logically, made a decision, and moved onward. Gregg acknowledged that there were several decision-making techniques available in the literature, each with a particular set of terminology and procedures; however, all decision-making generally followed five basic steps: 1) Identify the Problem or Issue, 2) Generate Alternative Solutions, 3) Research each Alternative Solution for Risks/Rewards, 4) Make the Decision, and 5) Evaluate the Outcome. Furthermore,

Gregg indicated this process resembled other research results that identified rational problem-solving processes.

A meta-analysis by Heppner, Witty, and Dixon (2004) reviewed 20 years of the problem-solving appraisal using the PSI. They indicated that applied problem solving was a goal directed sequence of cognitive, affective, and behavioral operations needed to adapt to life's problem situations. The reviewed research revealed that in relation to psychological, educational, vocational adjustment and physical health, the more positive a person's problem-solving appraisal, the more he or she tends to report (a) positive self-concepts, (b) higher levels of self-efficacy/assertiveness/personal agency, and (c) low levels of social uneasiness, worry, depression, anxiety, hopelessness, suicidal ideation, and irrational beliefs. In addition, the PSI was related to a number of physical health indices; most of these studies were guided by the social problem-solving theory (D'Zurilla, 1986; D'Zurilla &Nezu, 1999). Heppner et al. (2004) stated that the way people responded to difficult situations in complex manners were dependent on personal and environmental factors.

Heppner et al. (2004) further posited a relationship between problem solving and stress which included a person and his or her relationship to their environment. This relationship was one that included a delicate balance of the person's resources and environmental demands. The perceived effective (as opposed to ineffective) problem solvers reported more positive health expectancies, fewer health complaints, lower levels of chronic pain, and fewer health problems. Among college students and adults, Heppner et al. suggested that the studies showed a positive relationship between coping and problem solving. Effective problem solvers were better able to manage stress, locate resources for assistance, and have a social network of support, which in turn related to

academic success. The PSI research also concluded that skills related to effective problem solving were a result of influences that could be controlled by a set of practiced skills not related to psychosocial behaviors.

Studies on Problem Solving in College

A problem-solving experimental study conducted with college students by Heppner and Anderson (1983) used a self-appraisal of the student's problem-solving skills in relation to his or her psychological adjustment. They reported that during the 1970s several studies supported a relationship between problem solving and psychopathology in which a person who perceives to be an ineffective problem solver indicated more personal problems. In addition, Heppner and Anderson cited that most studies used subjects that suffered severe mental conditions or hospitalization, which created less generalizable findings. The study involved college student's responses to the PSI and the Minnesota Multiphasic Personality Inventory. Heppner and Anderson found a connection between self-perceived lack of problem-solving abilities and psychological stress. The researchers reported the more a person was dissatisfied with life, was worrisome, and confused, the less likely they were to bounce back from problems without the assistance of another and more likely to depend on help from other people. Conversely, students with a positive self-appraisal tended to have fewer self-doubts and had positive expectations as a problem solver. The positive self-appraisal was linked to self-efficacy of problem-solving skills.

Yen and Lee (2011) investigated problem-solving activities within the classroom and discovered them to be effective mechanisms to engage students in active learning. According to Yen and Lee, problem-solving activities shifted the focus of the class to a student-centered orientation, which provided the setting for students to engage in more

creative and interactive ways. These problem-solving activities in a course gave students the chance to build needed skills in working collaboratively with their peers; this process of collaborative learning has been associated with increased levels of course satisfaction among students (Memory, Yoder, & Williams, 2003). Research findings on problem based learning (PBL) versus lectures indicated that levels of student engagement were significantly higher in the PBL portions of the course (Ömer, 2012). While being identified as something that is difficult to define, PBL has been identified as a type of experiential learning in "real life" situations and is reported to help students engage in an active learning process (Hmelo-Silver, 2004). Pease and Kuhn (2011) noted that a key feature of this approach to learning is the contextualization of learning via a problem that is presented to students who have no prior preparation on the topic. Generally, the problem is both the stimulus and context for learning, where small groups of students are given a problem to address by identifying what they need to determine a course of action to solve the problem (Hmelo-Silver, 2004; Parton & Bailey, 2008; Pease & Kuhn, 2011). According to Hmelo-Silver (2004), students formulate and analyze the problem assigned, gain an understanding and generate hypotheses surrounding possible solutions, and identify areas where knowledge is lacking relative to the problem. These gaps in knowledge then become the focus of the student's self-directed learning process. Creative problem solving, as a teaching methodology that incorporates these components of problem based learning but going well beyond, can be seen as an effective way to engage students in learning.

An additional PBL experimental study found a method of instruction to develop the learners' knowledge and problem-solving skills through real world problems (Albanese & Mitchell, 1993; Pecore, 2013; Weizman et al., 2008). During PBL

instruction, students were led through a process that involved objectives, problems, research experiences, solution development activities, and assessments (Torp & Sage, 1998). Students working in groups were presented with a problem and asked to analyze preliminary data. With instructor assistance, the group determined the issues which are to be researched. Groups then shared their research with the class, received additional information and/or conduct an exploratory activity, and continued researching the problem. For PBL assessment purposes, groups pulled together their knowledge and prepared a final solution to the problem (Pecore, 2013).

Citing results from studies by Fitch (1970) and Hair and Graziano (2003) that a positive self-confidence affected academic success positively, Gursen Otacioglu (2008) investigated the relationship of problem-solving abilities and self-confidence levels of teacher trainees in psychological counseling and guidance and music education. Problem solving was described as a means of selecting and using the correct tools to reach the desired response. The researcher used the PSI by Heppner and Peterson (1982) and the Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969). Teaching using a problem-solving approach was determined to be a scientific method that required imaginative and scientific thinking skills. Results from the study indicated a positive relationship between self-confidence and problem-solving skills. Gursen Otacioglu concluded that individuals with a higher level of self-confidence had a higher level of problem-solving abilities, because a person who feels positive about his or her problem-solving ability creates a higher level of learning.

Timothy, Frank, John, and Thomas's (1990) study of the problem-solving self-appraisal of study habits and academic performance of 63 college students revealed a relationship between problem solving and academic performance by way of positive

study habits. Furthermore, the researchers indicated that problem-solving abilities were comprised of more than social skills (Timothy et al., 1990). The researchers cited the works of D'Zurrilla and Nezu (1987), who stated that problem-solving appraisal occurred in the social environment and required development of adaptive social behaviors. However, Heppner and Krauskopf (1987) asserted that problem-solving appraisal particularly in the academic setting was not restricted to social behaviors. Heppner and Krauskopf further stated that college students required adaptive behavior in organization, time management, and study skills to be successful. Timothy et al.'s (1990) study utilizing the PSI demonstrated that perceived effective problem solvers were able to incorporate positive study habits and were able to increase their academic performance.

Anderson, Goddard, and Powell (2009) examined real life problem solving in three groups of college students: non-depressed/non-anxious in the control group; anxious in one treatment group; and mixed depressed/anxious in the other treatment group. Participants completed a diary of the interpersonal problems they encountered, and their attempts to solve them. Participants also completed the SPSI-R. Anderson et al. stated research has consistently linked depression, anxiety and worry with poor problem orientation. Consistent with results from previous studies, the mixed depression/anxiety group reported poorer problem orientation than the control, as indexed by both problem orientation scales of the SPSI-R. Thus, the depression/anxiety group viewed problems as significant threats to well-being and lacked self-confidence in their ability to solve them. The pattern of findings from the SPSI-R suggested potential explanations for the mixed depression/anxiety participants' poor real life problem-solving performance. They exhibited a clear deficit in problem orientation indicating negative attitudes towards their problems and their ability to solve them. D'Zurilla et al. (2004)

suggested that a positive problem orientation facilitates rational problem solving, making positive outcomes more likely; conversely, a negative problem orientation contributes to impulsive/careless or avoidant problem-solving styles, making positive outcomes less likely.

Problem Solving in Native American Studies

A problem-solving study with Native American participants conducted by Yetter and Foutch (2014) utilized a factor analysis to determine the structural and convergent validity of the SPSI-R with Native American youth. Yetter and Foutch contended that no known research had been conducted on the validity of the SPSI-R with Native Americans and the impact of social problem solving on high risk behaviors and mental health. The study was conducted with the Choctaw Nation of Oklahoma summer youth program and included 701 youth participants ranging in ages from 15 to 21. All participants self-identified as Native American. Ninety-three percent were Choctaw. The remainder identified as Choctaw mixed with other tribes (2.7%); Cherokee (1.7%); Chickasaw (0.9%); Muscogee (Creek) (0.6%); Seminole (0.4%); White Mountain Apache (0.3%); or as Chickasaw/Cherokee, Kiowa, or Pottawatamie (0.1% each).

Results from the study showed that when situations arose that challenged the individuals with weaker social problem-solving skills, they were more likely to evidence academic difficulties. The SPSI-R validity was confirmed with European American and Latino American college students, but with culturally diverse groups the instrument was not as strong (Yetter & Foutch, 2014). The researchers determined the integrity of the instrument to be upheld.

Yetter and Foutch (2014) noted the need for the study to include a cultural variant that identified the fact that Native Americans utilize a collectivist style of problem

solving. This style incorporates the use of seeking the advice of elders, relying on extended family and community during times of adversity as a means of resilience. The researchers indicated one major inconsistency with previous research of the SPSI-R scale, (Item 42, "When I am faced with a difficult problem, I go to someone else for help in solving it") demonstrated a cultural bias towards the collectivist approach to resilience of the Native American population. While the integrity of the instrument was upheld, the researchers concluded with that more culturally diverse research was needed on the SPSI-R instrument to further validate it with the Native American population.

Summary

The review of the literature covers Native American historical trauma and how the impact of policies to educate and assimilate this population actually created the disparities of education seen today (Evans-Campbell, 2008). The literature indicated this trauma was transferred from generation to generation and is reflected in the maladaptive problem-solving functioning. In response to the effects of historical trauma of Native Americans, a Native American Life Skills Development Curriculum was created as described in the Life Skills section of the literature review (LaFromboise, 1996).

The development of life skills education by Adkins (1970) was designed to address the disparities of unemployment in under educated populations. Adkins brought together concepts of psychological and social skills training to build on the knowledge of experience that individuals brought with them. Next, Gazda and Brooks (1985), Himsl (1973), Wine and Smye (1981) and the World Health Organization (1999) helped to bring the definition of life skills to the forefront by implementing the skills needed to

address everyday problems. Research had shown a need to create a localized life skills curriculum to fit the needs of the population it served.

Later, LaFromboise (1996) created an American Indian Life Skills Development Curriculum that utilized Native American cultural practices to bridge the gap between the Native population and services of the psychological community. The Zuni Pueblo had experienced tremendous casualties of teen suicides during the 1980s. The cultural practices of the tribe excluded the very mention of the word suicide, which created a barrier for many of the non-Native health care professionals. Many of the Tribal elders and reservation school staff reached out to noted educational psychologist, Dr. LaFromboise (2006) to assist with the development, implementation, and assessment of the Life Skills Curriculum. LaFromboise created the seven stage culturally appropriate American Indian Life Skills Development Curriculum that included lessons on self-esteem, emotional stress, communication and problem solving, identifying self-destructive behavior, recognizing suicidal thoughts, suicide prevention, and planning for the future.

The problem-solving construct was reviewed by beginning with an original problem-solving model developed by D'Zurrilla and Goldfried (1971). The first social problem-solving inventory included two concepts problem-solving orientation and problem-solving skills. This model introduced four skills: 1) problem definition, 2) generation of alternative solutions, 3) decision making, and 4) implementation and verification.

Heppner and Petersen (1981) built on this model to create a problem-solving inventory that included three concepts of problem-solving abilities. These concepts included problem-solving confidence, personal control, and approach – avoidance style.

Heppner and Petersen's model suggested that personal problem solving was developed from skills and not social behaviors. However, D'Zurrilla et al. (2002) contested this theory and asserted that problem solving consisted of managing problems in all aspects of everyday life that included social behaviors.

D'Zurrilla et al. (2002) revised the original problem-solving instrument to expand on the rational problem-solving function and identified a positive and negative problem orientation and problem-solving styles that could either be adaptive or maladaptive. The instrument was determined to be reliable and valid through testing. The reading level of the instrument was stated to be at a fourth grade level. Finally, the SPSI-R was shown to be the better instrument for this study because of its assessment of social behaviors related to the lessons of life skills education. The five areas of the Life Skills curriculum addressed the five areas of the instrument as stated:

- Life Skills lesson 1) Who am I? Building self-esteem was addressed by the SPSI-R section 1) Positive Problem Orientation;
- Life Skills lesson 2) What am I feeling? Emotions and Stress was addressed by the SPSI-R section 2) Negative Problem Orientation;
- Life Skills lesson 3) How can I communicate with others and solve problems effectively? Communication and Problem Solving was addressed by the SPSI-R section 3) Rational Problem Solving;
- Life Skills lesson 4) How can I recognize self-destructive behavior and find ways to eliminate it? Identifying Self-Destructive Behavior was addressed by the SPSI-R section 4) Impulsivity/Carelessness Style;
- Life Skills lesson 5) How can I plan ahead for a great future? Planning for the Future was addressed by the SPSI-R section 5) Avoidance Style.

CHAPTER III

METHODOLOGY

This study investigated the effects of the Life Skills curriculum on the problem-solving abilities of tribal college students. I specifically examined the students' abilities in the following key areas: positive problem orientation, negative problem orientation, rational problem solving, impulsivity/carelessness style, and avoidance style. In this research, the study group was students in a freshmen orientation course who were administered a pre-and posttest SPSI-R instrument.

I sought to answer the following three research questions:

1. Is there a change in problem-solving skills from pretest to posttest for tribal college students who received the American Indian Life Skills Development Curriculum (Life Skills Curriculum) in a freshman orientation course at CMN?
2. Is there a change in problem-solving skills from pretest to posttest for tribal college students who did not receive the Life Skills Curriculum in a freshman orientation course at CMN?
3. Is there a change in problem-solving abilities from pretest to posttest among four sections of a freshman orientation course at CMN?

To answer the research questions, research hypotheses to be tested were as follows:

Null hypothesis one: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

H_0: $\mu_D = 0$

Alternative hypothesis one: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

H_1: $\mu_D \neq 0$

Null hypothesis two: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

H_0: $\mu_D = 0$

Alternative hypothesis two: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

H_1: $\mu_D \neq 0$

Null hypothesis three: There is no significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_0: $\mu 1 = \mu 2 = \mu 3 = \mu 4$

Alternative hypothesis three: There is a significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_1: not all means are the same

Type of Study

A causal-comparative methodology was utilized for this study to gather existing quantitative data of a cross-sectional questionnaire instrument and demographic data

from CMN's student information files. According to Gay, Mills, and Airasian (2012), this type of research includes at least one grouping variable that is believed to cause or influence the behavior of a group of individuals. In this study, one group of students received the Life Skills curriculum administered by CMN, while another group did not. The independent variable was the Freshman Orientation course curriculum with two levels: those freshmen whose introductory course included the Life Skills Curriculum and those freshmen whose introductory course did not change from its previous structure. The dependent variable was problem-solving abilities.

Gay et al. (2012) stated that the challenge to a casual-comparative study is the cause being studied has already occurred, and the researcher has no control over it. The tribal college administration and faculty member implemented the Life Skills curriculum in the Freshmen Orientation class to gauge the need of such curriculum among its students. The Life Skills curriculum was adapted from the American Indian Life Skills Development Curriculum book by LaFromboise (1996). The Life Skills curriculum was integrated into the regular curriculum of the Life Skills group's orientation classes.

Population and Sampling

The majority of first-time freshmen at CMN who are typically enrolled in Orientation are also usually enrolled in developmental courses and fit the criteria as at-risk students. According to the National Center for Educational Statistics (2013), the percentage of students who were placed in a developmental course in 2007-08 was 20%; according to CMN's records, the percentage of students enrolled in developmental courses during 2015-16 was 60%. The target population for this study was all students who were enrolled in each of the four sections of the Freshmen Orientation course during

the Fall 2016 trimester at CMN. As designated by the tribal college, "Students enrolling in eight or more credit hours for the first time are required to enroll in the orientation course" (CMN Course Catalog, 2016, p. 9). The four sections of the orientation course were taught during the Fall 2016 trimester to determine the effect of the Life Skills curriculum on problem-solving abilities. Orientation sections 02 and 03 were selected to use the Life Skills curriculum because all lessons were held in class. Whereas, sections 01 and 04 received the non-Life Skills curriculum because some class sessions were provided online and out of class due to scheduled holidays according to the fall academic calendar.

Each course section received the pre-and posttest survey instrument to measure the effect of the independent variable on students' problem-solving abilities. First-time freshmen students were advised by CMN staff to enroll in the orientation course, but each student determined the section he or she enrolled in according to his or her schedule. The groups had homogenous characteristics, which included the following traits: students were in the first-time freshman cohort, Native American, average age, similar education levels, and taking the Freshmen Orientation course.

Creswell (2002) defined a population as "a group of individuals who comprise the same characteristics" (p. 644). When the population of the study is small and completely identifiable, then Creswell (2002) suggested that a study be completed with the entire population rather than a sample. With a study of the population, the results from the data analysis are generalizable to the entire target population. In this study, the entire target population was identified as all of the students enrolled in the freshmen orientation course for the fall 2016 trimester.

Instrument

According to Creswell (2014), questionnaire instruments are particularly useful in capturing the current attitudes of the subjects. The questionnaire instrument administered for this study was the Social Problem-Solving Inventory-Revised (SPSI-R) questionnaire (see Appendix A) with permission granted by Multi-Health Systems Inc. (MHS). The tribal college administration purchased the instruments to be used in this study to determine the effectiveness of the Life Skills curriculum (see Appendix B). MHS is a leading publisher of scientifically validated assessments serving educational research. The SPSI-R was developed by Thomas J. D'Zurilla, Ph.D., Arthur M. Nezu, Ph.D., and Albert Maydeu-Olivares, Ph.D. (2002).

As a cross-sectional questionnaire, the SPSI-R is a self-report instrument that measures a person's ability to solve everyday problems. The questionnaire designer utilized exploratory and confirmatory factor analyses that led to the 52-item Likert-type response question instrument (D'Zurrilla et al., 2002). A 5-point response scale with a textual response continuum format ranging from "not at all true of me" (0) to "extremely true of me" (4) was used to identify the participant's problem-solving abilities. The questionnaire covers five key areas of problem solving: Positive Problem Orientation (PPO), Negative Problem Orientation (NPO), Rational Problem Solving (RPO), Impulsivity/Carelessness Style (ICS), and Avoidance Style (AS). The scoring system utilizes a total score of all key areas.

According to D'Zurrilla et al. (2002), the SPSI-R assesses two constructive problem-solving areas (PPO and RPO) and three dysfunctional problem-solving areas (NPO, ICS, and AS). The SPSI-R has a large normative sample (N = 2,312), a fourth-grade reading level, and is appropriate for males and females 13 years of age and older.

The instrument measures maladaptive/adaptive functioning with an analysis of the total score. A lower score indicates maladaptive functioning such as psychological distress, poor interpersonal relationships, inadequate or ineffective performance, and self-defeating behaviors. Higher scores indicate adaptive functioning such as psychological well-being, good interpersonal relationships, adequate or effective performance, and self-enhancing behaviors. The paper-and-pencil format of the questionnaire is designed to be a "QuikScore" format of multilayered paper score sheets. The external layers of the form transfer the results to the concealed scale-item content of the inner layers, so the administrator only needs to separate the forms to reveal the scores and calculate the final results.

The instrument originators conducted two forms of reliability tests for the SPSI-R, internal consistency and test-retest reliability (D'Zurrilla et al., 2002). Both tests of reliability were measured with four normative samples being: a) adolescents; b) young adults, c) middle-aged adults, and d) elderly adults. All five areas of the SPSI-R demonstrated adequate internal consistency (alpha) scores throughout the four samples. The test-retest reliability measures were taken from two subsamples over: a) 3-week period and b) 6-week period. The test-retest measured adequate (Pearson r) scores suggesting a stable instrument.

The validity of the instrument has been verified for structural, concurrent, predictive validity, and convergent and discriminant validity (D'Zurrilla et al., 2002). The structural validity has been measured with two separate samples using confirmatory factor analysis. The concurrent validity was measured with an assessment between the SPSI-R and the Problem-Solving Inventory created by Heppner and Peterson. The predictive validity was evaluated by examining the relationship between the SPSI-R and

measures of psychological distress. Finally, convergent and discriminant validity were determined by evaluating the relationship between SPSI-R and constructs that are believed to be related to and overlap with social problem solving to avoid redundancy).

Data Collection

CMN is a higher education institution that is continuously improving its teaching methods and programs to address the needs of its students. The institution's Orientation students were involved as receiving the Life Skills curriculum to measure an effect on problem-solving abilities as determined by the SPSI-R instrument. Permission was granted from the CMN President to participate in the study (see Appendix C). Both groups were comprised of first-time freshmen enrolled in the Freshmen Orientation course during the Fall 2016 trimester at CMN. The groups were homogenous with the exception that course sections numbered 02 and 03 received the Life Skills curriculum and the course sections numbered 01 and 04 did not receive the Life Skills curriculum. As the researcher of this study and a CMN faculty member, I taught all four Freshmen Orientation courses to maintain consistency in the curriculum presented in both the Life Skills and non-Life Skills classes. Furthermore, a paper version of the SPSI-R pre-and posttest was administered to each student at the beginning and at the end of the 15 week trimester. The results were coded for confidentiality and all personal information was maintained in a secure electronic filing system.

CMN provided me demographic information for each student in the following areas; gender, age, and previous educational information. In addition, SPSI-R scores, course and cumulative grade point averages (GPAs) for each student in every orientation class were also provided. All student information was provided by the tribal college's

internal and secure student information system, Campusvue, and student identification numbers were used to keep student identity confidential. I utilized an Excel spreadsheet to sort the information for input into SPSS to answer the research questions.

Internal validity and sufficient exposure to treatment for the study were addressed through the administration of both a pre-and posttest instrument administered 15 weeks apart. According to D'Zurrilla et al. (2002), at least one week should elapse between repeated administrations of the instrument. Fifteen weeks was a sufficient amount of time between the administrations of the two separate questionnaires. Additionally, the treatment was provided to the Life Skills group during the 15-week fall trimester, which according to LaFromboise's (1996) research was adequate time to implement the Life Skills curriculum.

The students' well-being was also addressed by the letter of support from the CMN President, which stated that the pre-and posttest surveys were not a part of the student's grade, but was only an assessment of each participant's problem-solving abilities. Providing a statement indicating the questionnaires were not a part of the course grade ensured students would not be penalized and encouraged honest answering of the questions. The course syllabus also verified the total amount of points earned in the course, which did not include the questionnaire.

Data Analysis

According to Creswell (2002), "a variable is a characteristic or attribute of an individual or an organization that can (1) be measured or observed by the researcher and (2) varies among individuals or organizations studied" (p. 129). I utilized SPSS to compute descriptive statistics from the questionnaire results for both the Life Skills group

and non-Life Skills group, as well as for the four individual class sections. I then calculated a paired sample *t*-test to determine the difference between the pre-and posttest Total SPSI-R mean scores of the Life Skills group. Next, another paired sample *t*-test was calculated to determine the difference between the pre-and posttest Total SPSI-R mean scores of the non-Life Skills group. Finally, a one-way ANOVA was used to determine whether there was a significantly different change from pretest to posttest Total SPSI-R mean scores among the four course sections. The independent variable was Freshman Orientation course curriculum with two levels: the non-Life Skills group, which consisted of the two course sections not receiving the new curriculum, and the Life Skills group, which included the two course sections with the American Indian Life Skills Development Curriculum embedded into the Freshmen Orientation course curriculum.

Summary

The purpose of this study was to examine tribal college students' problem-solving abilities after a trimester of a Life Skills curriculum embedded into the Freshmen Orientation course. This chapter presented the research design and methodology, which was a casual-comparative research study with quantitative analysis of the Total SPSI-R mean scores. It identified the target population being first-time freshmen cohort students enrolled in the Freshmen Orientation course at CMN during the Fall 2016 trimester. The population included 47 students enrolled in the orientation course. The independent variable was the Life Skills curriculum integrated into Life Skills group course curriculum and the non-Life Skills group which received the original orientation curriculum. The dependent variable was the problem-solving abilities which was tested by the SPSI-R pre-and posttest questionnaire. The selection of the instrument was based

on the tested reliability and validity, and it consisted of five key areas of problem-solving dimensions. Finally, this chapter presented the data collection procedures, and the data analysis methods.

Chapter Four will present the data I collected via the tribal college's records. Chapter Four will also present results from the data analysis which tested the hypotheses using SPSS. Chapter Five will present conclusions based on the results from the data analysis and how these conclusion connect to the review of the literature. In addition, the final chapter will provide recommendations for the use of the information and recommendations for future research.

CHAPTER IV

RESULTS OF THE STUDY

The purpose of this study was to determine whether there was a difference in problem-solving abilities between tribal college students receiving the Life Skills curriculum and tribal college students who did not in the Freshman Orientation course at CMN. A quantitative, causal comparative research design was employed by using data from the SPSI-R instrument administered during the Fall 2016 trimester in the CMN Freshmen Orientation course. The independent variable was Freshman Orientation Life Skills course curriculum which was provided to those whose Orientation course included the Life Skills Curriculum and those whose Orientation course did not. The dependent variable for this study was problem-solving abilities.

The sample included 47 students enrolled in the four sections of the Freshman Orientation course at CMN during the Fall 2016 trimester. As part of the Freshman Orientation experience, CMN implemented the American Indian Life Skills Development Curriculum in two of the four course sections. Every student in all four course sections took the SPSI-R as a pretest at the beginning of the course to measure his or her problem-solving abilities. At the end of the 15-week course, in which the classes met once a week for 55 minutes, students took the SPSI-R posttest. The questionnaire results were coded and scored according to instrument instructions. The scores were later analyzed to determine the effect of the Life Skills Curriculum on the problem-solving abilities of those in the Life Skills group compared with the problem-solving abilities of those in the

non-Life Skills group. The results were filed in CMN's internal student information files for future analysis.

The research hypotheses for this study were:

Null hypothesis one: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

H_0: $\mu_D = 0$

Alternative hypothesis one: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

H_1: $\mu_D \neq 0$

Null hypothesis two: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

H_0: $\mu_D = 0$

Alternative hypothesis two: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

H_1: $\mu_D \neq 0$

Null hypothesis three: There is no significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_0: $\mu 1 = \mu 2 = \mu 3 = \mu 4$

Alternative hypothesis three: There is a significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_1: not all means are the same

Results

Freshman Demographic Information

Student demographics for the four orientation course sections are shown in Table 1. A 16% difference is noted in the percentage of high school graduates between section 01 and section 03. There was also a difference in the number of students enrolled in section 03 and section 04. The highest mean age of the students was in section 02 at 23; this section also had the lowest mean GPA among the four sections and is the only section below the Total average GPA.

Table 1

Freshman Orientation Demographics

Freshman Orientation Course Section	N	Average age	% of males	% of females	% of high school graduates	Average high school GPA
Section 01: Non-Life Skills	12	22	34%	66%	84%	2.97
Section 02: Life Skills	11	23	36%	64%	90%	2.83
Section 03: Life Skills	9	20	34%	66%	100%	3.01
Section 04: Non-Life Skills	15	22	34%	66%	94%	3.10
Total	47	22	34%	66%	92%	2.96

Descriptive Statistics for Pretest and Posttest SPSI-R Scores for Each Group

According to D'Zurilla et al. (2002), the mean score for the SPSI-R is 100 with a standard deviation of 15 points. I used SPSS to calculate descriptive statistics, which

included the pre-and posttest Total SPSI-R mean scores, standard deviations, and standard error of the means for both groups (See Table 2).

Table 2

Group Descriptive Statistics for Pre- and Posttest SPSI-R Mean Scores

Group	Pretest Mean	Pretest SD	Pretest SE	Posttest Mean	Posttest SD	Posttest SE
Life Skills	96.70	15.77	3.53	103.05	14.43	3.23
Non-Life Skills	101.33	10.00	1.92	101.52	10.16	1.95

The Life Skills group had the lowest mean pretest score of 96.70. The mean posttest score of 103.05 for the Life Skills group was higher than the Non-Life Skills group. The descriptive statistics seemed to indicate very little change in the mean score from pretest to posttest for the Non-Life Skills group. However, to determine whether the change from pretest to posttest for either group was significant, I employed a paired sample *t*-test.

Paired Sample *t*-test Results for Each Group

A paired sample *t*-test was utilized to compare the change in SPSI-R Mean Scores from pretest to posttest for each group. Sections One and Three were taught using the Life Skills Curriculum while Sections Two and Four received the existing curriculum. For each analysis, I used an alpha level of .05. Results from the paired sample *t*-test are displayed in Table 3.

Table 3

Paired Sample T-Test Results for Change from Pretest to Posttest for Each Group

Group	Mean Change	SD	SE	T	df	Sig. (two-tailed)
Life Skills	6.35	8.76	1.96	3.24**	19	.004
Non-Life Skills	.19	11.70	2.25	.08	26	.935

**$p < .01$

The Life Skills group Total SPSI-R mean score increased from pretest to posttest by 6.35 points, while the non-Life Skills group Total SPSI-R score increased from pretest to posttest by 0.19 point. The Life Skills group's mean change indicated a statistically significant increase in the Total SPSI-R mean score ($p < .01$). Though the mean change from pre- to posttest scores for the non-Life Skills group showed a positive increase, the change was not significant.

In regard to the null hypothesis one, since the mean change from pretest to posttest for the Life Skills group was significant, I rejected null hypothesis one. Thus, I accepted the alternative hypothesis stating there is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group. The results indicated a significant change in the Total SPSI-R mean for the Life Skills group at the .01 confidence level.

In regard to the null hypothesis two, since the mean change from pretest to posttest for the non-Life Skills group was not significant, I failed to reject null hypothesis two. Thus, the non-Life Skills group exhibited no significant difference between the means of the pre-and posttest Total SPSI-R scores. The results did not indicate a

significant change in the Total SPSI-R mean for the non-Life Skills group at the .05 confidence level.

Descriptive Statistics for Each Section of the Freshman Orientation Course

Null hypothesis three states there is no significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections. Before testing the hypothesis, I again used SPSS to calculate the descriptive statistics for the four sections (See Table 4). The largest Total SPSI-R mean change was in Section 02, with the next largest Total SPSI-R mean change in Section 03; these two sections were taught using the Life Skills Curriculum.

Table 4

Descriptive Statistics for All Four Sections of Freshman Orientation

Freshman Orientation Course Sections	Total SPSI-R Mean Pretest	Total SPSI-R Mean Posttest	N	Mean Change	SD	SE
Section 01: Non-Life Skills	99.58	101.42	12	1.84	12.49	3.61
Section 02: Life Skills	93.73	103.00	11	9.27	9.56	2.88
Section 03: Life Skills	100.33	103.11	9	2.78	6.48	2.16
Section 04: Non-Life Skills	102.73	101.60	15	-1.13	11.28	1.59

Though it appeared the mean change for at least one section might be significantly different from the others, I could not be certain the null hypothesis should be rejected until I conducted an inferential test. Thus, I utilized a one-way ANOVA to compare the mean change in scores from pretest to posttest among the four course

sections. Table 5 shows the results of the one-way ANOVA of the Total SPSI-R mean scores between the course sections. The test did not indicate significance with a value of .111.

Table 5

One-Way ANOVA Results for Mean Score Change between Sections

Total SPSI-R Mean Score Change	Sum of Squares	df	Mean Square	F	Sig.
Between Course Sections	704.14	3	234.71	2.13	.111

The results of the one-way ANOVA test indicated no difference in the mean change in Total SPSI-R scores from pretest to posttest when compared by course section. Thus I failed to reject null hypothesis three. The mean change in Total SPSI-R scores among all course sections were relatively similar as indicated by the one-way ANOVA.

Summary

The purpose of this study was to determine the effects of a Life Skills curriculum on the problem-solving abilities of tribal college students enrolled in the Freshman Orientation course. Two of the four Freshman Orientation courses at CMN during the Fall 2016 trimester received an American Indian Life Skills Development Curriculum. All four course sections were administered a pre-and posttest SPSI-R.

Results from the paired sample *t*-test indicated a significant difference between the Total SPSI-R mean scores from pretest to posttest for the Life Skills group. There was not a significant difference between the Total SPSI-R mean scores from pretest to

posttest for the non-Life Skills group. ANOVA results indicated no significant difference in the mean change in Total SPSI-R mean scores from pretest to posttest among the course sections. The summary of this study, conclusions, and implications for future practice and research are discussed in the Chapter Five.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Problem-solving skills were defined by D'Zurrilla et al. (2002) as the ability to work towards a positive resolution of real life situations with minimal negative outcomes. Effective problem-solving skills are essential to successful functioning in everyday life. Social problem solving is regarded as the cognitive-behavioral process in which an individual engages in identifying effective strategies of coping with real life problems in social situations (D'Zurilla & Nezu, 1982).

I conducted this study to determine the effects of a Life Skills curriculum on the problem-solving abilities of tribal college students. Two groups of students enrolled in a freshmen orientation course received either the Life Skills curriculum or the traditional curriculum of this first year course. Both groups were administered the SPSI-R as both a pretest and posttest; the dependent variable was the change in problem-solving abilities as determined by the Total SPSI-R score. I sought to answer the following research questions:

1. Is there a change in problem-solving skills from pretest to posttest for tribal college students who received the American Indian Life Skills Development Curriculum in a freshman orientation course at CMN?

2. Is there a change in problem-solving skills from pretest to posttest for tribal college students who did not receive the Life Skills Curriculum in a freshman orientation course at CMN?

3. Is there a change in problem-solving abilities from pretest to posttest among four sections of a freshman orientation course at CMN?

Summary

The study sample included a total of 47 students enrolled in one of four Freshmen Orientation sections at CMN during the Fall 2016 trimester. Each student took the SPSI-R survey as a pretest during the first week of the trimester and then again as a posttest during the fifteenth week. The surveys were self-scoring instruments designed to provide raw scores for the two problem orientation key areas and the three problem-solving style key areas. The raw scores for these key areas were then summed to calculate the Total SPSI-R score which indicates problem-solving abilities.

Summary of SPSI-R Statistics

The study was designed to first determine whether there was a significant difference in the pre-and posttest Total SPSI-R mean scores for both the Life Skills group and the non-Life Skills group. Results from the paired sample *t*-test indicated a significant difference in the Total SPSI-R mean scores from pretest to posttest for the Life Skills group at the .01 level of confidence. However, results from the paired sample *t*-test did not indicate a significant difference in the Total SPSI-R mean scores from pretest to posttest for the non-Life Skills group.

The study was also designed to determine whether there was a significant difference in the Total SPSI-R mean scores from pretest to posttest among the four course sections. Course sections 02 and 03 were identified as the Life Skills group while sections 01 and 04 were the non-Life Skills group. Results from the one-way ANOVA

indicated no significant difference in the Total SPSI-R mean scores between the course sections.

Summary of Findings

Hypotheses and findings in response to research question one. The hypotheses for research question one were as follows:

Null hypothesis one: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

$H_0: \mu_D = 0$

Alternative hypothesis one: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the Life Skills group.

$H_1: \mu_D \neq 0$

Results from the paired sample *t*-test indicated *a* p-value of .004. Since .004 < .05, which was the alpha level used for this study, I concluded there was a significant change in the paired population means from pretest to posttest Total SPSI-R scores of the Life Skills group. Thus, I rejected null hypothesis one.

Hypotheses and findings in response to research question two. The hypotheses for research question two were as follows:

Null hypothesis two: There is no significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

$H_0: \mu_D = 0$

Alternative hypothesis two: There is a significant difference between the means of the pre-and posttest Total SPSI-R scores of the non-Life Skills group.

$H_1: \mu_D \neq 0$

Results from the second paired sample *t*-test indicated *a* p-value of .935. Since .935 > .05, which was the alpha level used for this study, I concluded there was not a significant change in the paired population means from pretest to posttest Total SPSI-R scores of the non-Life Skills group. Thus, I failed to reject null hypothesis two.

Hypotheses and findings in response to research question three. The hypotheses for research question three were as follows:

Null hypothesis three: There is no significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_0: $\mu 1 = \mu 2 = \mu 3 = \mu 4$

Alternative hypothesis three: There is a significant difference in the change in Total SPSI-R scores from pretest to posttest among the four course sections.

H_1: not all means are the same

The results from the one-way ANOVA indicated *a* p-value of .111. Since .111 > .05, which was the alpha level used for this study, I concluded there was not a significant change in the paired population means from pretest to posttest Total SPSI-R scores among the course sections. Thus, I failed to reject null hypothesis three.

Integration of the Findings with the Review of the Literature

Results from this study suggest the importance of having a Life Skills curriculum embedded in the curriculum of an ongoing college course (WHO, 1999). The Native American Life Skills Development Curriculum was embedded into the curriculum of the Freshmen Orientation course for 15 weeks during the Fall 2016 trimester at CMN. Greene (2012) asserted that supplemental life skills training is needed to assist underprepared college students at open admission institutions. Particularly, Native

American populations have higher disparities from the general population in education, physical and behavioral health, and economic status due in part to the effects of historical trauma (Brave Heart & DeBruyn, 1998). Because of the effects of historical trauma, some Native Americans require a culturally appropriate life skills curriculum to increase self-worth, community engagement, and problem solving (LaFromboise, 2006). The Native American Life Skills Development Curriculum utilized life situations recognizable to the tribal population it served (Koruklu, 2015; LaFromboise, 2006). As a result, CMN tribal college students received culturally sensitive Life Skills lessons that increased their problem-solving abilities.

Social problem solving is the process by which a person develops adaptive behavior to overcome problematic situations in everyday life social environment (Chang & D'Zurilla, 1996; D'Zurilla & Goldfried, 1971, D'Zurilla et al., 2002). Students who received the Life Skills curriculum were given tools to enhance their cognitive abilities, which in turn enhanced their self-esteem, ability to control emotional stress, communication and problem-solving skills, techniques to avert self-destructive behaviors, and vision to plan for the future.

The social problem-solving model is comprised of two general, partially independent components of abilities: problem orientation and problem-solving style (D'Zurilla & Goldfried, 1971; D'Zurilla & Nezu, 1982, D'Zurrilla et al., 2002). Problem orientation is made up of two aspects: positive problem orientation and negative orientation. Problem-solving style is made up of three aspects: rational problem solving (adaptive functioning), and impulsivity/carelessness style and avoidance style (both maladaptive functioning) (D'Zurrilla et al., 2002). The Life Skills lessons were connected with the problem-solving instrument as self-esteem referenced a positive

orientation and managing emotional stress limited the negative orientation. In addition, communication and problem solving contributed to a rational problem-solving model, while preventing self-destructive behaviors sought to eliminate impulsivity/carelessness. Finally, planning for the future intervened the avoidance style.

The Life Skills group created real life problem situations in which resiliency was strengthened in students by increasing self-esteem, engaging community involvement in the classroom, and developing problem-solving abilities. Wismath, Orr, and Good (2014) suggested that students need to learn how to think, how to learn, and how to cope with changing situations. Methods included lessons created from shared experiences of the students such as cultural practices for healing and cleansing the mind and body. Teaching such life skills can be integrated into every aspect of the curriculum through problem based learning methods that include inviting student input in lesson planning, integrating peer tutoring into the learning process, and applying knowledge to real life problems (Cobo, 2013).

Conclusion

The effect of a Life Skills curriculum on the problem-solving abilities of tribal college students was the focus of this study. My research results indicated the Life Skills curriculum had a positive effect on the problem-solving abilities of students enrolled in the two course sections that received the Life Skills curriculum. The curriculum was integrated into the course through a social constructivist approach by creating lessons based on life experiences (Vicary et al., 2006). The Life Skills curriculum increased the Total SPSI-R scores, which measure problem-solving abilities as a culmination of problem orientation and problem-solving style (D'Zurrilla, 2012). One of the non-Life

Skills course sections increased its Total SPSI-R score only slightly and the other did not increase at all.

The Life Skills group pretest mean Total SPSI-R score was 4.63 points below the non-Life Skills group pretest mean Total SPSI-R score. Conversely, the Life Skills group posttest mean Total SPSI-R score was 1.53 points higher than the non-Life Skills group posttest mean Total SPSI-R score. The non-Life Skills group Total SPSI-R mean score increased by only 0.19 points. The students not receiving the Life Skills curriculum maintained an average level of adaptive and functional behaviors of problem-solving abilities. However, the Life Skills group increased Total SPSI-R mean scores by 6.35. With the Life Skills curriculum, the students in this group increased their adaptive and functional behaviors, thereby increasing their problem-solving abilities.

The Life Skills curriculum demonstrated an effective positive increase in problem-solving abilities in students by strengthening the skills needed to make rational decisions. In addition, the curriculum was effective in reducing students' trends of poor decision-making. Overall, the Life Skills curriculum helped students reduce the negative aspects of problem-solving orientation and had a positive impact on the students' progress towards adaptive problem-solving abilities.

Recommendations for Practice

The following are recommendations for practice based on the conclusions and results of this study.

1. The negative problem orientation and impulsivity/carelessness style and avoidance style should be targeted as a primary area to be strengthened with at-risk students in order to perpetuate success in college completion. Noting

the positive increase in problem-solving abilities as a result of decreased negative orientation and maladaptive problem-solving styles in this study, it is important to focus on those two negative areas.

2. The study supported the positive relationship between Life Skills and problem-solving abilities. An increase in positive problem orientation and the rational problem-solving style increased the student's abilities to problem solve. It is useful to continue to encourage students to use positive self-talk and work through the steps of rational problem solving, which are: Stop—identify the problem; Options—generate alternative solutions; Decide—decision making, and; Act—solution implementation.
3. As demonstrated by the results of my study and as confirmed by Greene (2012), the Life Skills curriculum should be embedded into the curriculum of open admission institutions from orientation to completion. General Education courses that provide a foundation for core and specialization courses would provide the skills for decreasing maladaptive and dysfunctional behaviors. Exit level courses could provide real world situations to demonstrate positive problem orientation and rational problem solving.

Recommendations for Further Research

Further research is justified in order to strengthen existing studies and to identify more effects of life skills and other factors contributing to the enhancement of students' problem-solving abilities. The following are recommendations for further research based on the results of this study.

1. This study focused on the Freshmen Orientation course for the Fall 2016 trimester. Further research is needed on the longitudinal effects of life skills on the freshmen cohort.
2. This study used the SPSI-R survey instrument to measure the problem-solving abilities of the students. Further research is needed to study solution implementation through a qualitative behavioral observation to support the effectiveness of life skills education.
3. Considering the disparities faced by low income and minority students attending open admission institutions, further research is needed to measure the effectiveness of life skills embedded throughout the entire program of study.

Higher education institutions, particularly those with open admission policies, are facing the issues of student populations who enter higher education underprepared for the rigors of college level work. These issues are complicated further when underprepared students also lack the life skills to overcome the obstacles experienced in everyday life situations. This study confirmed increased problem-solving abilities of tribal college students who received an embedded Life Skills curriculum. The Life Skills group did have a significant increase in problem-solving abilities as measured by their Total SPSI-R scores. This study indicated a need, based on improved problem-solving abilities, to reinforce life skills that enhance positive adaptive and functioning behaviors, which in turn empower students to overcome problems faced in everyday life situations.

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APPENDICES

Appendix A

Social Problem-Solving Inventory-Revised

Social Problem Solving Inventory-Revised: Long (SPSI-R:L)

Thomas J. D'Zurilla, Ph.D., Arthur M. Nezu, Ph.D., & Albert Maydeu-Olivares, Ph.D.

Client ID: _____ Age: _____ Gender: M F (circle one)

Date of Birth: ____/____/____ (mm dd yyyy) Today's Date: ____/____/____ (mm dd yyyy)

Instructions: Below are some ways that you might think, feel, and act when faced with problems in everyday living. We are not talking about the ordinary hassles and pressures that you handle successfully every day. In this questionnaire, a problem is something important in your life that bothers you a lot, but you don't immediately know how to make it better or stop it from bothering you so much. The problem could be something about yourself (such as your thoughts, health, or appearance), your relationships with other people (such as family, friends, teachers, or boss), or your environment and the things you own (such as your house, car, property, or money). Please read each statement carefully and choose one of the numbers below that shows how much the statement is true of you. See yourself as you usually think, feel, and act when you are faced with important problems in your life these days. Circle the number that is the most true of you. Do not erase if you want to change an answer, instead put an "X" through the answer you wish to change. Try to answer all of the questions.

		Not at All True of Me 0	Slightly True of Me 1	Moderately True of Me 2	Very True of Me 3	Extremely True of Me 4
1.	I spend too much time worrying about my problems instead of trying to solve them.	0	1	2	3	4
2.	I feel threatened and afraid when I have an important problem to solve.	0	1	2	3	4
3.	When making decisions, I do not evaluate all my options carefully enough.	0	1	2	3	4
4.	When I have a decision to make, I fail to consider the effects that each option is likely to have on the well-being of other people.	0	1	2	3	4
5.	When I am trying to solve a problem, I often think of different solutions and then try to combine some of them to make a better solution.	0	1	2	3	4
6.	I feel nervous and unsure of myself when I have an important decision to make.	0	1	2	3	4
7.	When my first efforts to solve a problem fail, I know that if I persist and do not give up too easily, I will eventually find a good solution.	0	1	2	3	4
8.	When I am attempting to solve a problem, I act on the first idea that occurs to me.	0	1	2	3	4
9.	Whenever I have a problem, I believe that it can be solved.	0	1	2	3	4
10.	I wait to see if a problem will resolve itself first, before trying to solve it myself.	0	1	2	3	4
11.	When I have a problem to solve, one of the things I do is analyze the situation and try to identify what obstacles are keeping me from getting what I want.	0	1	2	3	4
12.	When my first efforts to solve a problem fail, I get very frustrated.	0	1	2	3	4
13.	When I am faced with a difficult problem, I doubt that I will be able to solve it on my own no matter how hard I try.	0	1	2	3	4
14.	When a problem occurs in my life, I put off trying to solve it for as long as possible.	0	1	2	3	4
15.	After carrying out a solution to a problem, I do not take the time to evaluate all of the results carefully.	0	1	2	3	4
16.	I go out of my way to avoid having to deal with problems in my life.	0	1	2	3	4
17.	Difficult problems make me very upset.	0	1	2	3	4
18.	When I have a decision to make, I try to predict the positive and negative consequences of each option.	0	1	2	3	4
19.	When problems occur in my life, I like to deal with them as soon as possible.	0	1	2	3	4
20.	When I am attempting to solve a problem, I try to be creative and think of new or original solutions.	0	1	2	3	4
21.	When I am trying to solve a problem, I go with the first good idea that comes to mind.	0	1	2	3	4
22.	When I try to think of different possible solutions to a problem, I cannot come up with many ideas.	0	1	2	3	4
23.	I prefer to avoid thinking about the problems in my life instead of trying to solve them.	0	1	2	3	4
24.	When making decisions, I consider both the immediate consequences and the long-term consequences of each option.	0	1	2	3	4

Items continue on the back page...

Social Problem Solving Inventory-Revised: Long (SPSI-R:L)

Thomas J. D'Zurilla, Ph.D., Arthur M. Nezu, Ph.D., & Albert Maydeu-Olivares, Ph.D.

		Not at All True of Me 0	Slightly True of Me 1	Moderately True of Me 2	Very True of Me 3	Extremely True of Me 4
25.	After carrying out my solution to a problem, I analyze what went right and what went wrong.	0	1	2	3	4
26.	After carrying out my solution to a problem, I examine my feelings and evaluate how much they have changed for the better.	0	1	2	3	4
27.	Before carrying out my solution to a problem, I practice the solution in order to increase my chances of success.	0	1	2	3	4
28.	When I am faced with a difficult problem, I believe that I will be able to solve it on my own if I try hard enough.	0	1	2	3	4
29.	When I have a problem to solve, one of the first things I do is get as many facts about the problem as possible.	0	1	2	3	4
30.	I put of solving problems until it is too late to do anything about them.	0	1	2	3	4
31.	I spend more time avoiding problems than solving them.	0	1	2	3	4
32.	When I am trying to solve a problem, I get so upset that I cannot think clearly.	0	1	2	3	4
33.	Before I try to solve a problem, I set a specific goal so that I know exactly what I want to accomplish.	0	1	2	3	4
34.	When I have a decision to make, I do not take the time to consider the pros and cons of each option.	0	1	2	3	4
35.	When the outcome of my solution to a problem is not satisfactory, I try to find out what went wrong and then I try again.	0	1	2	3	4
36.	I hate having to solve the problems that occur in life.	0	1	2	3	4
37.	After carrying out a solution to a problem, I try to evaluate as carefully as possible how much the situation has changed for the better.	0	1	2	3	4
38.	When I have a problem, I try to see it as a challenge, or opportunity to benefit in some positive way from having the problem.	0	1	2	3	4
39.	When I am trying to solve a problem, I think of as many options as possible until I cannot come up with any more ideas.	0	1	2	3	4
40.	When I have decisions to make, I weigh the consequences of each option and compare them against each other.	0	1	2	3	4
41.	I become depressed and immobilized when I have an important problem to solve.	0	1	2	3	4
42.	When I am faced with a difficult problem, I go to someone else for help in solving it.	0	1	2	3	4
43.	When I have a decision to make, I consider the effects that each option is likely to have on my personal feelings.	0	1	2	3	4
44.	When I have a problem to solve, I examine what factors or circumstances in my environment might be contributing to the problem.	0	1	2	3	4
45.	When making decisions, I go with my "gut feeling" without thinking too much about the consequences of each option.	0	1	2	3	4
46.	When making decisions, I use a systematic method for judging and comparing alternatives.	0	1	2	3	4
47.	When I am trying to solve a problem, I keep in mind what my goal is at all times.	0	1	2	3	4
48.	When I am attempting to solve a problem, I approach it from as many different angles as possible.	0	1	2	3	4
49.	When I am having trouble understanding a problem, I try to get more specific and concrete information about the problem to help clarify it.	0	1	2	3	4
50.	When my first efforts to solve a problem fail, I get discouraged and depressed.	0	1	2	3	4
51.	When a solution that I have carried out does not solve my problem satisfactorily, I do not take the time to examine carefully why it did not work.	0	1	2	3	4
52.	I am too impulsive when it comes to making decisions.	0	1	2	3	4

Appendix B

CMN Order Invoice from Multi Health Systems

MHS
Multi-Health Systems Inc.

P.O. Box 950
North Tonawanda, NY 14120-0950
Tel: 1-800-456-3003
Fax: 1-888-540-4484
Email: customerservice@mhs.com
www.mhs.com
Head Office:
3770 Victoria Park Ave.
Toronto, ON M2H 3M6
Tel: (416) 492-2627, 1 (800) 268-6011
Fax: (416) 492-3343, 1 (888) 540-4484

US Banking Info:
Bank Name: M&T Bank
Bank Address: One M&T Plaza, Buffalo, NY, 14203-2399
Account Name: Multi-Health Systems Inc.
Bank Account#: 150185
ABA: 022000046
Swift Code: MANTUS33

INVOICE

Invoice No.	I856542
Date	May 20, 2016
Customer ID	204688
Order No.	861195
Shipper ID	S674806
Order Type	Sales Order
Terms	Due on receipt

REPRINT

INVOICE ADDRESS	DELIVERY ADDRESS
College of the Muscogee Nation 2170 Raven Circle Okmulgee, OK 74447	College of the Muscogee Nation 2170 Raven Circle Okmulgee, OK 74447

Notes:

ORDER DATE	DELIVERY METHOD	ENTERED BY	CUSTOMER P.O. NO.
May 19, 2016	UPS US Ground	LISA.CRANE	2763

PART NO.	DESCRIPTION	QTY ORDERED	QTY SHIPPED	PRICE	DISC %	NET. PRICE
SPS05	SPSI-R Technical Manual	1	1	81.00	30.00	56.70
SPS060	SPSI-R:L QuikScore Forms (25/pkg)	4	4	60.00	30.00	168.00

FREIGHT	Shipping and Handling	25.68

This is your proof of purchase; please retain for your records.

Sales Total		224.70
Misc. Charges - see above		25.68
Oklahoma Sales & Use Tax		0.00
		250.38
Less Paid Amount		
TOTAL	**US$**	250.38

Please note our EIN: 98-0369592

Appendix C

CMN President Letter of Permission and Support for Research

PRESERVING THE PAST, CULTIVATING FUTURES
OFFICE OF THE PRESIDENT

College of the Muscogee Nation
2170 Raven Circle
Okmulgee, OK 74447
Phone: 918.549.2800
FAX: 918.549.2880
www.mvskte.org

August 29, 2016

Permission and Support for Life Skills and Problem Solving Research

CMN Students,

The College of the Muscogee Nation (CMN) will be conducting a pilot project during the fall 2016 trimester to incorporate a life skills curriculum into the orientation course. I have granted permission for this research on life skills and problem solving abilities. I give my full support and the support of the College to engage in research that will benefit CMN and all Tribal Colleges across the nation.

You will be asked to complete a pre and post-questionnaire of the Social Problem-Solving Instrument-Revised (SPIS-R) as a part of this pilot project. The questionnaire will be scored to identify your problem solving abilities. This score will not be factored into your overall grade and will only be used for the purposes of this research. All of your personal information will be kept completely confidential and no identifying information will be published.

Thank you for your unbiased participation in this important study. Please feel free to contact myself at 918-549-2801 or the Dean of Academic Affairs, Monte Randall, at 918-549-2806 if you have any questions.

Mvto,

Robert Bible

Robert Bible
President, College of the Muscogee Nation
rbible@mcn-nsn.gov

ORAL ROBERTS UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW
APPROVAL STATUS FORM

Approval Date: 4/21/2017 **IRB #:** SP2017-14

Proposal Title/Subject: *The Effect of a Life Skills Curriculum on Problem Solving in Native American Students*

Principal Investigator(s): **Monte Randall**

Reviewed and Processed as:
[X] Exempt **[ ] Expedited** **[ ] Full Board**

Approval Status Recommended by Reviewer(s):

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.

APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Total Project Period: May 1, 2017 to December 1, 2017

Signature: Mary Lou Miller
Chair of Institutional Review Board

4-21-2017
Date

cc: Faculty Sponsor
Dean of School

VITA

Name:	Monte Lee Randall
Education:	Doctorate of Education in Higher Education Administration, Oral Roberts University, Tulsa, Oklahoma, May 2017; Master of Arts, University of Oklahoma, Norman, Oklahoma, May 2010; Bachelor of Science in Business Administration, Haskell Indian Nations University, December 2006
Professional Experience:	Dean of Academic Affairs, College of the Muscogee Nation, Okmulgee, Oklahoma, 2015-present; Dean of student affairs, College of the Muscogee Nation, Okmulgee, Oklahoma, 2015-2015; Tribal Services Instructor, College of the Muscogee Nation, Okmulgee, Oklahoma, 2010-2011