5-2014

Knitting as a Therapeutic Group Technique with 4th Grade Elementary School Students

Cassandra Marie Dominick
University of Arkansas, Fayetteville

Follow this and additional works at: https://scholarworks.uark.edu/etd

Part of the Counseling Psychology Commons, Educational Assessment, Evaluation, and Research Commons, and the Elementary Education Commons

Knitting as a Therapeutic Group Technique with
4th Grade Elementary School Students

Knitting as a Therapeutic Group Technique with
4th Grade Elementary School Students

A dissertation submitted in partial fulfillment
of the requirements of the degree of
Doctor of Philosophy in Counselor Education

by

Cassandra M. Dominick
Truman State University
Bachelor of Science, 2002
University of Arkansas
Masters in Counseling, 2009

May 2014
University of Arkansas

This dissertation is approved for recommendation to the Graduate Council.

_____
Dr. Kristin Higgins
Dissertation Director

_____   _____
Dr. Roy Farley   Dr. Ketevan Mamiseishvili
Committee Member   Committee Member

_____
Dr. Michael Loos
Committee Member

ABSTRACT

The primary purpose of the current study was to explore the use of knitting as an expressive arts technique. Knitting groups were conducted with 4th grade elementary school students. Each group met for 8 sessions on a weekly basis. Participants were randomly assigned to either the experimental group or control group. The experimental group received knitting instructions in the group format first. Prior to beginning the group, all participants, their teachers, and their parents completed the Social Skills Improvement System assessment (Gresham & Elliot, 2008). This measure was repeated following the end of the experimental group and again approximately 8 weeks later, after the control group received the intervention. Results were analyzed using the Mann-Whitney-Wilcoxon test, due to the small sample size ($n = 10$) in this study. The results indicated significant effects for Social Skills and Engagement as measured by the Student form. Many variables had medium and large effect sizes, which may indicate information helpful for clinical applications.

ACKNOWLEDGEMENTS

There are many people that have provided me with a tremendous amount of support during my academic journey. I would not be here without the support and encouragement of these folks. First, I would like to thank Dr. Kristin Higgins, my dissertation chair. She has been an exemplary teacher since I first began taking her classes, and she was a calming, consistent, humorous, and dedicated dissertation chair for me over the past months. Thank you, Dr. Higgins for helping me grow and succeed as a student for many years, and for being one of my biggest helpers to get to the finish line.

I would also like to thank the members of my dissertation committee. Thank you to Dr. Roy Farley. Your calm and wise guidance was a comfort to me during this process. Thank you to Dr. Ketevan Mamiseishvili for your knowledge and support. Thank you to Dr. Michael Loos for your energy and creative input. All of you helped shape this dissertation and I would not be here without your guidance.

Along with my professors, my husband Matthew has been the biggest behind the scenes help. I appreciate all of the emotional support, brainstorming, task juggling, hugs, and calm that you provided during times when I was very excited about this process and when I was feeling completely overwhelmed. I love you. Thank you to my daughter, Zooey, because you provide me with so much joy on a daily basis and you help me remember how to savor the small moments.

Deep thanks and heartfelt appreciation also go out to my dear friend, Missy Haley. You have been one of my biggest encouragers as long as I've known you, and I don't think I could have gotten through this process with some semblance of sanity without your friendship and

validation. Thank you for your empathy, your listening ears that never seemed to get tired of my thoughts, your injections of confidence, and your courage as we both went through this journey.

I also want to thank Elizabeth McKee, who has been my supervisor and one of my mentors for many years. You made it possible for me to continue my education, and you taught me very well about the library resources that would help me along the way. On a more personal note, you provided me with an excellent amount of support and advice about motherhood and fining personal balance. I admire you deeply.

Special thanks also go out to the interlibrary loan staff at Mullins Library. You made it possible for me to get every resource I needed over my academic career, and a few that were just for fun too. Thank you to Deborah Brown for your humor and helpful hints along the way. Thank you to my mom, Abby Dominick, for all the caretaking you provided for Zooey that made it possible for me to get back to school and work. Thank you to my dad, Mike Dominick, for instilling me with a good sense of humor early on in life. Thank you to William Symes, for your energy and excellent life guidance. Thank you to many other friends and family. I would not be here without the love, friendship, and support of many and I am grateful for you all.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

Expressive arts are a therapeutic tool that can harness creativity and enhance mind-body awareness simultaneously (Malchiodi, 2012). When a client creates art for part of his/her therapeutic process, he/she puts form to thoughts and emotions, representing them with a concrete object that serves as physical participation in the therapeutic process. This process can help make underlying emotions or goals more clear (Gladding, 1998). Art making can also stimulate several different areas of the brain, including the midbrain/brainstem, limbic, and cortical areas. These areas are associated with sensory elements, affect, and decision making (Malchiodi, 2012), each of which can aid in helping clients uncover desires, needs, and goals. This study will examine knitting as a potential expressive arts tool with elementary school children. Knitting combines sensory and creative elements with bilateral brain stimulation as participants use both hands to create (Malchiodi, 2012).

Statement of the Problem

At least 20 percent of children experience some emotional, developmental, or behavioral difficulties (Schectman, 2004). Many of these students receive services in a school setting (Schectman, 2002). School counselors and school-based counselors can greatly impact a student's success with behavior problems and academic issues, but especially at the social interaction level. School counselors may do this by offering classroom guidance, working directly with an individual student, or through group counseling.

Student success can be shaped by direct influence from teachers, counselors, other mentor adults, and peers. Shectman (2002) writes that group psychotherapy is one of the most cost-effective therapeutic modalities that can help students simultaneously build social skills with their peers. Group counseling can also help students learn to increase positive interpersonal

relationships, prevent negative relationships, assist in development, and help students learn about themselves. Children in group counseling settings benefit by learning that other peers have struggles, and group counseling situations may also decrease feelings of isolation (Berg, Landreth, & Fall, 2013). Berg, Landreth, and Fall call counseling groups "a microcosm of children's everyday world," where children may practice interacting with others and receive immediate feedback (2013, p. 152). In a school environment where counselors may struggle to meet the needs of many students, while balancing administrative tasks, group counseling can meet the needs of several children at the same time.

A population of students that can often benefit from direct influence are at-risk students. In the current study's setting there are eight elementary schools that are eligible for Title 1 benefits. In these schools, at least 40% of the students qualify for the free and reduced lunch benefits (National Center for Educational Statistics, 2013). These schools also have a greater population of at-risk students, due to the higher levels of poverty. At-risk students are typically ethnic minorities, students with disabilities, students whose second language is English, and students from low socioeconomic backgrounds. At-risk students often have academic challenges, behavioral challenges, and lack somewhat in social skills (Lagana-Riordan, et al., 2011).

Student success can be enhanced in many ways. Brigman and Campbell (2003) discuss several skill areas that can create positive influence in a student's outcomes. These areas are cognitive and metacognitive skills (memory skills, progress monitoring, goal setting), self-management skills (managing anger, motivation, and attention), and social skills (listening, teamwork, interpersonal skills, and social problem solving). All of these skills can be increased with a therapeutic knitting group for at-risk students. Knitting is a unique craft that gives students the opportunity to enhance each of the skills discussed by Brigman and Campbell

because it requires memorization in learning new stitches, progress monitoring as the knitted piece grows between the knitters fingers, attention to the task at hand, listening as the group members learn how to make the stitches and they listen to group members, and teamwork as they help each other.

Knitting has begun to be examined as a therapeutic tool for several different populations for a variety of purposes like anxiety reduction (Clave-Brule, Mazloum, Park, Harbottle, & Birmingham, 2009), distraction from addiction (Duffy, 2007), help with dementia (Adam, Van, Juillerat, & Salmon, 2000), empowerment (Rebmann, 2006), and restorative justice (Christiansen, 2003). Knitting has the benefit of increasing a relaxing or meditative response (Benson, 2001; Clave-Brule et al., 2009; Duffy, 2007; Dittrich, 2001) and provides a myriad of other benefits like fostering a connection with others (Clave-Brule et al., 2009; Christiansen, 2003), distraction from ruminating thoughts (Clave-Brule et al., 2009; Duffy, 2007), providing a sense of accomplishment and achievement (Christiansen, 2003; Duffy, 2007; Rebmann, 2006), a reduction in boredom (Dittrich, 2001; Duffy, 2007), and it is also an opportunity for a creative outlet (Christiansen, 2003; Duffy, 2007; Dittrich, 2001). In many of the studies mentioned above, the use of knitting has been informal and the format for using knitting as a therapeutic technique is unclear. No formal examination of knitting with at-risk students has yet been conducted.

By further examination of knitting as a therapeutic activity, we can better understand the elements of knitting that make it applicable to therapeutic work, and identify specific mental health populations that could benefit from this activity. Knitting has potential for both children and adults for a variety of disorders to improve their mental health functioning, in either a group setting or through individual use. It is important to continually examine new therapeutic tools

because no single technique is going to reach every kind of population or work for every disorder.

Background of the Study

Theoretical Background

Knitting is an activity that can operate as a recreational device, a form of art, as well as a kind of meditation. The bulk of this study focuses on knitting as an expressive art device, with some additional focus on ways that knitting can elicit relaxation in the user, or harness creative energy and focus in a way that makes time stand still for the user. Expressive arts therapy can include traditional elements of art therapy like art, music, dance/movement, drama, and poetry/writing (Malchiodi, 2012). Knitting draws on both artistic elements and movement elements of expressive arts therapies in its application.

In the most basic application of the craft, knitting is done through use of a single stitch, so it can be easily learned and can be soothing through repetition. The nature of knitting can also provide more stimulation in several ways. It can stimulate the creative process through the use of unique types of fibers and a myriad of colors, as well as application of different kinds of techniques like lace, cables, and color work. Dr. Robert Maurer, as interviewed by Borgnes-Giramonti, (2012) notes that knitting can provide a sense of accomplishment and in turn activate the nucleus accumbens, a pleasure center in the brain, while turning the "mundane" (in this case a ball of yarn) into something beautiful. Knitters can also learn to design their own garments and further the creative process if they wish to do so.

Knitting can enhance positive emotion among those that engage in the activity. It can provide a situation that meets the requirements for engagement (Seligman, 2011) or flow (Csikszentmihalyi, 1997) when the user has a high level of skill and is facing a high challenge. It can provide meaning by allowing the knitter to participate in something bigger than the self.

Knitters can also use knitting to participate in political movements (Mazza, 2012; Sayeg, 2012), donating to charities (Christiansen, 2003), and participation in a wider world of knitting through writing or reading knitting weblogs.

Knitting also provides a way for the user to gain accomplishment and achievement for its own sake on a regular basis. Knitting gives instant feedback and accomplishment as the knitter makes each new stitch and watches the fabric grow. Positive relationships are also often enhanced as knitters interact both in-person and online with others. Many yarn stores have designated knit nights that customers attend for socialization. During these nights members enhance friendships and aid each other with knitting projects. Online, there are a myriad of different ways for knitters to interact with each other. A site called Ravelry serves as a way for knitters to engage in social networking by allowing knitters to befriend others, show off their finished projects, participate in different interest groups, and engage in larger group contests and events (Ravelry, 2013).

Another aspect of knitting that is applicable in working with clients is the potential for knitting to operate as a meditative device. Dr. Herbert Benson cited knitting as a device that could elicit the relaxation response (1975, 2001). He said more specifically that the "relaxation response can be elicited by a number of techniques, such as diaphragmatic breathing, repetitive prayer, qi gong, yoga, progressive muscle relaxation, jogging—even knitting," (2001, p. 56). He went on to say, "These kinds of activities can decrease breathing rates, metabolism, and brain wave frequencies, inducing a relaxation response. In this way, knitting can be a form of meditation for many people," (2001, p. 56). Lutz et. al. (2009) found that meditation enhances attentional stability, amplifies the phase consistency of the brain responses to task-related sensory inputs, and reduces task effort.

Personal background

I have been a knitter for 9 years and have experienced a multitude of benefits in my own life by participating in this activity. Knitting has increased my self-esteem, helped me cope with anxiety and stressors that arise in my occupational and academic realms, provided me with a way to create and design, increased my social circle and connection with others, and has helped me reach out to others around the globe by maintaining a weblog and reading the weblogs of others.

Knitting has also helped me focus by providing me with more stimulation. This applies during times when I am listening intently to a friend, focusing during class, or even as a way to stay interested enough to sit still for two hours in a movie theater. I find it allows me to stay relaxed, engaged, and absorb more while my hands are engaged in a rhythmic motion.

Many knitters in my regular social circle comment about how therapeutic knitting is. I regularly attend a knit night and I have off and on for 7 years. I am often surprised how deeply personal our conversation topics become, even among members that are fairly new. Recently, we were all shaken when a member of the group attempted to commit suicide. She shared her story with us afterward, and it seems that our group and our common craft-created bond have helped her heal some.

While this is an anecdotal example, it led me to start thinking about knitting as a therapeutic device. During my master's program in counseling, I conducted a knitting group once a week for an hour at a therapeutic day treatment program for severely and persistently mentally ill adults. The group was focused primarily on working on knitting skills. It consisted of 5 women and lasted for the final semester of my internship. Each woman learned how to knit, though some had various degrees of difficulty with this and some needed more extensive help than others. They were knitting samples without specific projects in mind, but one member of

the group purchased materials for use at home and started a secondary project there. Teaching

five members of the group at once was challenging and quite frustrating at times, but overall the

experience seemed rewarding for all of us. This inspired me to seek other ways to combine my

passions for enhancing well-being in others and my love of knitting. In these cases it may be

difficult to untangle which part of the therapy is related to the knitting, and which part can be

attributed to group participation, but beneficial aspects of knitting reach beyond group cohesion.

Purpose of the Study

The purpose of this study is to examine the use of knitting as a therapeutic device with at-

risk elementary school children, to discover whether participation in a knitting group can

enhance their social, behavioral, and academic well-being. Research that has used knitting as a

therapeutic device in the past has not been explored formally in a group setting with children.

Most of the research examples have been done in a group setting, but no group has used

elementary school children with social, academic, or behavioral problems. This can contribute to

the field of counseling by providing evidence for knitting as a therapeutic technique.

This study may also help inform others about a craft that has existed for centuries that is

often disparaged in the present day. Knitting is seen as a craft participated in by mainly women,

and is often devalued for this purpose. Turney writes, "…it is contradictory, suggesting that if

women are knitting they are bound by patriarchy, and if they choose to knit for pleasure, it is not

deemed worthwhile and is judged and compared to male pastimes, (2009, p. 10)." This study

may provide information that validates knitting as a form of therapy, art, and recreation.

Research Questions

1. Can engaging in knitting have an impact on an at-risk student's social functioning?

2. Can engaging in knitting have an impact on an at-risk student's behavioral

    functioning?

3. Can engaging in knitting have an impact on an at-risk student's academic functioning?

4. What are some of the emotions experienced by at-risk students as they learn to knit?

Definitions

   At-risk student. In this study an at-risk student is defined as having social, academic or behavioral problems that also experience marginalization as an ethnic minority, through disability, being a non-native English speaker, or coming from a low socioeconomic background (Lagana-Riordan, et al., 2011).

   Expressive arts therapy. The International Expressive Arts Therapy Association (2012) notes that "expressive arts combine the visual arts, movement, drama, music, writing and other creative processes to foster deep personal growth and community development," (p. 1, 2012).

<div align="center">Significance of the Study</div>

   This study could potentially be applicable for any counselor wanting to expand the realm of counseling techniques in their repertoire. If knitting does enhance the therapeutic experience of at-risk elementary school children, it lends further evidence for both knitting as a therapeutic device and more specifically to help enhance social skills, classroom behavior, and academic achievement. Knitting has the potential to serve as a recreational device, an outlet for art therapy, and as a way to experience meditation through movement. If knitting provides enhancement in the life of the client, it can serve as an inexpensive and potentially life-long activity that can provide pleasure to the client. If it serves as a therapeutic device, it can become a coping skill that may also provide pleasure.

Theoretical Sensitivity

   My deep love of knitting inspires me to want to teach everyone to knit, so that they may also experience the joys this craft has brought into my life. I have taught several knitting classes at my local yarn store and have taught many other individuals to knit on a less formal basis.

Throughout this study, I must keep in mind that knitting will not be a therapeutic device for every individual. I will keep in mind the elements of knitting that are therapeutic, but I must also make note of the difficulties experienced by my client. I plan to document closely the steps taken to teach the students knitting, but I understand this will not apply for every individual.

CHAPTER 2: LITERATURE REVIEW

At-Risk Elementary School Students

This literature review will begin with some information on the prevalence of at-risk students, followed by factors that help create student success. This is followed by a discussion of group counseling with elementary school children with mention of different types of groups for working with specific ages and issues. Expressive arts therapy serves as the theoretical backbone of this literature review, with general information about expressive arts, followed by a more narrow focus of knitting as an expressive art. Finally, this literature review examines previous uses of knitting in a therapeutic setting and uses of knitting with school-age children.

Prevalence

Low socioeconomic status (SES) is the greatest factor for determining whether a student is considered at-risk of academic failure (Spring, 2006). In the report, The Condition of Education, Aud et al., (2013) note that 22 percent of children in the South live in poverty; the highest level of poverty experienced in the United States. In the current study's setting 8 out of 10 elementary schools qualify for Title 1 Benefits (National Center for Educational Statistics, 2013). Title 1 schools are those with high levels of poverty. To qualify at least 40 percent of the student population must be eligible for the free and reduced lunch program (National Center for Educational Statistics, 2013).

Consequences

At-risk students often face more academic challenges, have greater behavioral problems, and sometimes lack in social skills (Lagana-Riordan, et al., 2011). Hovland, Smaby, and Maddux (1996) found that children at-risk showed a greater prevalence for acting out behaviors like blaming, need for direction in work, and negative-aggressive behavior. They found that

these students had learning and social problems that could impact the classroom as a whole. In addition, they found that at-risk girls experienced more social withdrawal while at-risk boys had increased anxiety about failure.

When low SES is combined with low educational attainment by the students' parents, frequent changes in schools, low grades from sixth through eighth grade, failing one or more grades before eighth grade, and having siblings that are dropouts, the situation is worsened. When a student has 3 or more of those risk factors, 50 percent never enroll in a postsecondary institution (Spring, 2006), meaning many of these students have little chance of moving out of poverty.

Building student success

Christiansen (1997) discusses protective factors that help to increase resilience in at-risk students. These include family support, positive relationships with significant adults, mentors, and special hobbies and interests. School counselors may serve as mentors or provide a positive relationship for at-risk children.

Brigman and Campbell (2003) delineate three key areas of success for academic and social competence: meta-cognitive skills, self-management skills, and social skills. These areas consistently appear in over 50 years of research that examines factors that contribute to student success (Hattie, Biggs, & Purdie, 1996; Masten and Coatsworth, 1998; Wang, Haertel, & Walberg, 1994). Students that possess these skills are often high achievers.

Meta-cognitive skills are those such as goal setting, memory skills, and progress monitoring (Brigman & Campbell, 2003). For at-risk populations, increased ability to reflect has is significantly correlated to school success and positive educational outcomes (Wang, 1992), and overall has the most powerful effect on learning (Wang, Haertel, & Walberg, 1994).

Self-management skills include managing anger, motivation, and attention. Children are more likely to perform well when they are able to conduct themselves in a prosocial manner. Masten and Coatsworth (1998) note that, "good attention regulation has been linked to prosocial behavior and peer popularity, whereas difficulties in regulating attention have been linked to attention-deficit/hyperactivity disorder (ADHD), antisocial behavior, and academic problems," (p. 208).

Social skills include teamwork, listening, social problem solving, and interpersonal skills (Brigman & Campbell, 2003). Exposure to positive peer affiliations can reduce the likelihood of behavioral, social, and emotional problems. When students are competent in social, behavioral, and emotional domains and have a support group of friends, they are less likely to experience victimization and are more likely to engage in prosocial acts with peers (Hoglund & Leadbeater, 2004). Adolescents have higher levels of engagement in school and report more feelings of school belonging when they also have multiple prosocial friendships (Vaquera, 2009).

Behavioral problems and emotional problems are linked. Ameliorating a student's emotional issues aids in untangling behavioral problems. Hoglund and Leadbeater (2004) found that school disadvantage (schools experiencing high levels of poverty) and children's emotional and behavioral problems were positively correlated, they also found that when students had high levels of social competence they had lower levels of behavior and emotional problems. The authors recommend ecological changes in the school environment to increase the number of prosocial peer interactions in classrooms. Interventions that help enhance social skills and increase peer acceptance may increase social development. This type of intervention may also help prevent behaviors that lead to drug use, delinquency, social problems, and academic failure (Prinstein & La Greca, 2004).

Participation in extracurricular activities can be another protective factor for students (McNeely, Nonnemaker, & Blum, 2002). When participating in extracurricular activities, students experience more academic achievement, prosocial behavior, and have more overall engagement and likelihood of healthy and positive development (Pittman, Martin, & Williams, 2007). Extracurricular activities can serve as a way for students to practice social skills and find new opportunities to connect with peers.

Group counseling

Kataoka, Zhang, and Wells (2002) note that 75%-80% of children needing mental health services do not receive them. When children do receive services, it is most likely to happen in a school setting (Rones & Hoagwood, 2000). School counselors can make greater impacts through group counseling, since there is typically 1 counselor per 400 students (DeLucia-Waack, 2000). This makes group counseling a cost-effective way to reach as many students as possible.

Group therapy is as beneficial as individual therapy for students (Schectman, 2002), and children often begin the "working" phase of the group from the outset. Initial group sessions include high levels of self-disclosure, with an average of 12 responses of self-disclosure per child when the groups included structured therapeutic activities (Leichtentritt, & Shechtman, 1998). With school counselors being in short supply, group therapy is an alternative to individual therapy that can meet the needs of more children, as effectively as one-on-one relationships. Group therapy has the additional benefit of increasing social interactions with peers and decreasing feelings of isolation.

Types of Groups

Schectman (2004) outlines three general types of groups for children and adolescents: guidance/educational groups, counseling groups, and group psychotherapy. Guidance/educational groups focus on prevention and are typically aimed at a normal

population. This type of group may have a focus on social skills and may be delivered in the classroom. Counseling groups are targeted at children and adolescents with some situational or developmental difficulties. This type of group may more specifically focus on school achievements, self-esteem, or social difficulties. This group type can help children and adolescents increase intimacy and trust with peers, as well as practice new prosocial skills. Group psychotherapy has the narrowest focus of these group types. Group psychotherapy is appropriate for children with behavior and adjustment problems. This group is often small, and sometimes conducted in outpatient or inpatient clinics.

Berg, Landreth, and Fall (2013) more specifically discusses three types of groups that are appropriate for working with children: group play therapy, activity group therapy, and structured group counseling. Berg outlines for each group an appropriate age range, some structure elements of the type of group, and recommendations for materials. This study will focus on activity group therapy as described by Berg, Landreth, and Fall (2013).

Group play therapy. Group play therapy is appropriate for children up to age nine. Play is a medium for children to express themselves through the symbolic language of play before they are able to verbally express more abstract thoughts (Berg, Landreth, & Fall, 2013). The authors note that, "For children, play is their voice, and group can become the social learning laboratory for change," (p. 155). In group play therapy group cohesion is not a necessary requirement and the play sessions are goal free.

Activity group counseling. Activity group counseling, as described by Berg, Landreth, and Fall (2013) is recommended for children from ages 9-13. They note that at this age children are still most comfortable in same-sex groups. They are also prone to acting out their emotional reactions rather than verbally expressing them (2013). This study uses activity group counseling to work with 4th grade girls, who are aged 9-11. The role of the counselor in these groups is to

be permissive and nonintervening (Berg, Landreth, & Fall, 2013). Behavioral limits should be suggestions rather than disciplinary attempts to stop behavior.   According to Berg, Landreth, and Fall, sessions in an activity group should last an hour and a half to two hours, with meetings occurring once a week (2013).

Berg, Landreth, and Fall (2013) outline several steps of the process in an activity-based group (as cited in Schiffer, 1969, p.2-3). The Preparatory Phase involves an introduction to the play group, testing reality, and discovery and relaxation. The Therapeutic Phase includes development of transference (toward the counselor and other children), aggression, regression, abatement of anxiety and guilt, and catharsis. The Reeducational Phase involves increased frustration tolerance, some capacity for delaying gratification, expansion of interest areas and development of personal skills, improved self-image, and sublimation. Finally, Success in Intragroup Participation is a phase when the individual begins to respond more to the group, group controls become more efficient, interaction resembles that of normal groups, transference may be diluted, termination, some aggression may appear due to separation anxiety, and finally this phase involves acceptance and conclusion.

Structured group counseling. Structured group counseling included presentations through structured media such as stories, games, puppets, role-playing, or highly structured question and discussion leads (Berg, Landreth, & Fall, 2013). These authors makes specific recommendations for counseling abused children, and counseling children of divorce. Berg, Landreth, and Fall (2013) recommend using games and activities followed by discussion, dividing each session between these two elements. They recommend that this type of group counseling be limited to 40-60 minute sessions. Interpersonal problems that develop during the free-play part of the sessions may become the focus of structured problem solving in another session.

Expressive Arts Therapy

Malchoidi (2012) characterizes expressive therapy as the inclusion of any art therapy like music, art, dance/movement, drama, and poetry/writing. She notes that "Expressive therapy has been defined as using the arts and their products to foster awareness, encourage emotional growth, and enhance relationship with others through access to imagination; including arts for therapy, arts for psychotherapy, the use of arts for traditional healing; and emphasizing the interrelatedness of the arts in therapy, (p. 131). Knitting combines both the elements of movement and art as it provides an outlet for creativity.

Expressive arts benefit clients in a number of ways discussed by Gladding (1998). They promote a connection between mind and body. The process of creating something and the energy put toward that is a participatory action, so it may lead the client somewhere. Using art in counseling involves concreteness, which can help assist clients in conceptualizing problems. Lastly, using art in counseling may can help clients to see what they are striving for and focus.

Expressive arts have several common elements as described by Estrella (2005). They may involve sensory-based expression, aesthetics, and creativity. They have sensory-based elements that do not require verbal expression. They have an aesthetic quality. That is, they "share principles of beauty, harmony, rhythm, dynamic tension, and other attributes; they also share the capacity to give symbolic form to feelings and experiences," (Malchiodi, 2012, p. 132-133.) Expressive arts let participants explore the creative process.

Expressive arts and the brain

Art making can stimulate many different areas of the brain simultaneously. Malchiodi (2012) discusses areas of the brain that are affected by art making. These include

midbrain/brainstem, limbic, and cortical areas. The midbrain/brainstem is associated with sensory and kinesthetic elements, the limbic area with affect and emotion, and the cortical area with symbolizing, decision making, and planning. McNamee (as cited in Malchiodi, 2012, p. 20) notes that art therapy that includes bilateral stimulation, like knitting, can "enhance integration of trauma or deficits." In an interview, Dr. Robert Maurer concurs with these effects in an interview and states, "When the midbrain is engaged by the repetitive movement involved in many crafts, the temporal lobe is unable to focus on worry or stress. The cortex—which controls conscious thought—becomes quiet and peaceful, (Borgnes-Giramonti, 2012, p. 180).

Ziff, Pierce, and Johanson (2012) created a pilot program called ArtBreak, a school-based creative group counseling program, where they explored expressive art therapy along a continnum. The expressive arts therapy continuum has three levels: Kinesthetic/Sensory, Perceptual/Affective, and Cognitive/Symbolic. Each level has different goals and recommended materials. Hinz (2009) notes that art making materials that provide less resistance support relaxation, while those that provide more resistance can help increase new skills.

The Kinesthetic/Sensory level includes expressing feelings and relaxing as therapeutic goals. The authors recommend materials like soft clay, chalk pastels, finger paint, and watercolors for working at this level. The Perceptual/Affective level is focused on improving attention, improving cognition, identifying feelings, empathic understanding, impoving cognition, and understanding cause and affect. Recommended materials include crayons, oil pastels, drawing materials, and tempera paint. The Cognitive/Symbolic level has integrating strengths and developing problem-solving abilities as two goals. Ziff, Pierce, and Johanson (2012) recommend using clay, collage, mask making, art making with two or more steps, markers, sculpture, and illustrated books with narratives.

Ziff, Pierce, and Johanson (2012) worked with children ages 6-11 years for half hour stretches of time on a weekly basis. They noted that this stretch of time did not seem sufficient. They offered materials for each level of sensory experience. Teachers, a school-based intervention team, families, or community mental health professionals served as referral sources for the children. The counselor provided objects as prompts for artwork during the first two sessions. Ziff, Pierce, and Johanson (2012) observed that in several cases the students had lasting benefits that extended beyond the art room, having an increase in prosocial behaviors in the classroom and within the group setting. They saw improvements in some children referred for behavioral goals, and some that were referred for help with concentration skills.

Knitting as a Therapeutic Device

Knitting can be easy to learn, is portable, provides immediate feedback, is rewarding, can be done in both active and passive time, it comes with a low cost (Clave-Brule et al., 2009), and can be continued and used throughout a person's life (Rebmann, 2006). The following research highlights a few of the therapeutic qualities that many life-long knitters would easily confirm. Many of the reported studies are qualitative or anecdotal. Few formal studies using knitting as a therapeutic device have been conducted. Additionally, none of the following research report adverse effects from knitting.

I have participated in a local knitting group for the past 8 years and at times it seems magical how easily we reveal our inner selves to each other, even newcomers, as we are all bonded by our common love of this art. Knitting can be beneficial to those that regularly participate in it in many ways. It can be therapeutic, meditative, inspiring, and loving. It can untangle our stressed minds as we unravel balls of yarn and turn them into wearable objects. It can hold our attention just enough to allow fuller focus during classes or meetings. It can be challenging and rewarding when we learn new skills. This literature review and study is an

attempt to provide further evidence about the therapeutic qualities of knitting that most knitters take for granted as part of the craft.

An international survey conducted by Riley, Corkhill, and Morris (2013) identified many aspects of knitting that enhance participants' well being. The authors posted a survey on an internet website for 2 weeks and had 3,514 valid responses from knitters. The sample was primarily white (90%) and made up of women (98.8%), from 31 different countries. Over half of the participants were between ages 21-40. Questions on the survey served to gather data about demographics of knitters, reasons to engage in knitting, perceived effects on mood and feelings, thinking, and social activity and skills.

Riley, Corkhill, and Morris (2013) found that many knitters reported relaxation and relief from stress. Participants reported that knitting helped them be productive during passive time, like television watching. The majority of the participants (72%) reported knitting more than 3 times per week. The authors found that increased knitting was related to increased calm, happiness, and confidence. Many participants described the feeling of calm that they experienced. One participant noted that the rhythm of knitting when working on a simple project is "hypnotic and calming" when she is stressed (p.53) and another noted that knitting can be "relaxing and yet engaging at the same time," (p. 53).

Participants in the study noted a number of positive cognitive effects. Forty-seven percent of participants claimed that knitting helps them think through problems, 37% reported that it helps them forget problems, 55% reported that it helps their thinking to flow more easily, 58% think knitting aids memory, 61% noted that knitting improves their concentration, and 39% said knitting helps them organize their thoughts. Cognitive skills that participants reported had improved for them included mathematics, visual/spatial awareness, and planning and organizing (Riley, Corkhill, & Morris, 2013).

Knitting in a social setting helped foster social connections with 86% of participants reporting a feeling of belonging when knitting with others. Ninety percent of the respondents reported making more friends due to knitting. Riley, Corkhill, and Morris (2013) noted that many participants also reported that knitting is a great conversation starter as well as a new way to connect with others.

Ferber (2005) examined reasons for participating in hand knitting. She created a Hand Knitting Survey, and the most common results encompassed many facets of wellness. From 61 surveyed knitting women, the most cited reasons were:

> "For the sheer joy and pleasure of it," (98%), "To do something creative," (92%), "For relaxation," (90%), "To extend love and appreciation to family and friends," (82%), "For the sense of accomplishment," (81%), "To express individuality and uniqueness," (70%), "To relieve stress and anxiety," (67%), and "As meditation," (46%), (Ferber, 2005, p. 100).

Ferber's survey responses encompass a few of the most salient reasons for knitting to be used in a therapeutic manner. Many of the subjects she surveyed knitted for a large number of hours per week. The greatest number of subjects knitted between 5-10 hours per week (61%), but 6% of the subjects reported knitting over 40 hours per week. Ferber's results demonstrate there is something meaningful and enthralling about this hobby for those that participate in it (2005).

Empowerment

Many individuals that knit report feeling empowered by the ability to make their own clothing. They also experience the mastery of completing a project, and pride and appreciation of a newfound ability. When knitters become more skillful they may also realize that they have something to offer to others by teaching this skill (Duffy, 2007).

Knitting fostered empowerment as part of a life skills group with homeless teen mothers in a voluntary structured group living environment (Rebmann, 2006). The mothers were in the

group home for an average of 10 months to 2 years. The author began teaching women at this facility to knit after one patient expressed interest and learned. Rebmann successfully taught her and then began to teach other women. She noticed that some of them visibly relaxed while knitting. One woman remarked, "I'm mad calm. This makes me feel real calm. I'm focused, (p. 18, 2006)." The author noticed that as these first few knitters began to help her teach others, they experienced empowerment. Some of the women had the opportunity to teach new counselors, shifting the power roles between counselors and clients, as they sat side by side and the clients taught the counselors to knit.

Male and female prisoners at many United States facilities are learning to knit and donating knitted items to local charities. Christiansen (2003) highlights several prison programs that teach both men and women prisoners to knit. Inmates in Wisconsin, Indiana, California, Texas, Minnesota, Colorado, and Massachusetts are learning to knit, and often donating many hand knit items to charities that provide for those in need. Prisoners in many of these programs improved in the areas of anger management, empowerment, accomplishment, patience, and other social skills. In a program in Dartmouth House of Corrections, a women's facility in Dartmouth, Massachusetts, the public information officer reports that women benefit from this kind of program because it increases their self-worth as they learn new skills.

At Redgranite Correctional Facility, the recreational leader comments on the ego-building properties of the activity for the men that participate. A supervisor in the Therapeutic Community at Limon reports a similar experience from the male offenders he supervises under maximum security. "You ain't seen nothin' until a guy doing 800 years comes up to you all proud and bustin' because he just crocheted his first cow, (Christiansen, 2003, p. 39). Christiansen (2003) points out that, "Such testimony gives voice to something that handcrafters have understood for generations; being able to make things gives one a sense of power, of

creative accomplishment that, once tapped, can be transformative, (p. 39)." Becoming a knitter in a community of other knitters can be empowering as a client takes on a new sense of her identity, with new potential possibilities (Duffy, 2007).

Stress Reduction

Utsch (2007) examined knitting and stress reduction with 225 subjects using the Perceived Stress Scale (PSS) along with a questionnaire about knitting behaviors designed for her study. She categorized subjects into "therapeutic" and "non-therapeutic" knitters. Knitters that reported participating in knitting while they were stressed were deemed "therapeutic knitters." She found that 72% of subjects endorsed at least one item that referred to stress reduction as a reason for knitting.

Utsch included one question about knitting in a social setting, but did not analyze subjects based upon whether they knit primarily alone or in a group to see if that was related to stress reduction. Many knitters take part in social gatherings. She noted that approximately half of the "therapeutic knitters," who made up 92% of the subjects, attend social knitting functions regularly (between once a week to once a month). The social aspect of their knitting may also help alleviate stress, rather than solely the practice of knitting.

A group in a drug and alcohol treatment center for women used knitting as a therapeutic tool with residential and outpatient clients. Duffy (2007) found that it was helpful with a number of clients with affect management, increasing self-soothing behaviors and grounding, increasing self-esteem through mastery of a task, enhancing creativity, and in a group setting it allowed clients to reduce isolation and help each other learn with a non-threatening task. One client reported that knitting was helpful with her attention deficit hyperactivity disorder (ADHD) and knitting also gave her a sense of accomplishment. The same client reported that knitting helped

keep arguments from occurring among the clients, and helped them to be more patient and grounded.

Thirty-eight clients used knitting as part of a standard recreation and leisure group at an inpatient eating disorder unit. The results of a questionnaire they were given indicated that they reported a number of benefits including distraction/distancing from eating disorder thoughts and feelings (74%), increased relaxation and comfort (74%), stress reduction, accomplishment, prevention of ruminating thoughts becoming actions (53%), and sensory enjoyment of the task such as meditative movement of the hands (32%) (Clave-Brule et al., 2009). Each knitter spent between 0-5 hours knitting during the day, with an average of 1 hours and 20 minutes a day. Others reported that knitting helped them connect with others. Clave-Brule et. al. noted that this could indicate a reduced level of social anxiety when engaging in knitting (2009). A participant in the study by Riley, Corkhill, and Morris (2013) noted, "I have extreme social anxiety and it gives me something to focus on if I have to be around people. It helps me relax so that my anxiety and panic don't overwhelm me," (p. 53).

Knitting was used for stress reduction in a program called Knit for Life (2004). Nine medical and cancer treatment centers in Seattle, Washington implemented knitting groups to help lower stress and promote health and well-being in cancer survivors. Testimonials from patients note that they were able to focus energy away from thinking about cancer treatment, while they were also provided an outlet for creativity.

An art therapist interviewed by Ferber (2005) reported using knitting with children diagnosed with obsessive-compulsive disorder (OCD). The therapist reported that knitting helped lower anxiety in her clients. Ferber reports that, "The predictable, repetitive nature of knitting, which in some ways parallels some of the obsessive qualities of OCD, affords the client

the possibility to engage in a healthier and more satisfying activity which, unlike OCD, has 'an end in sight' evidenced by the completion of the project. (p. 43-44)

Social Connections

Knitting can help a client become connected to others. This can be through teaching knitting to others (Duffy, 2007; Rebmann, 2006), feeling less social anxiety when knitting with others in a group (Clave-Brule et al., 2009), or by making knitted items that can be donated to those in need (Christiansen, 2003). A group of fifth and sixth graders at Warner Upper Elementary School worked together to donate knitted items to children in hospitals, and increased strengthened friendships while being altruistic in their knitting club (Wallace, 2011). In my own life, knitting has served to foster new friendships with people in my community, by blogging about knitting to communicate with other knitters around the world, and also through a social media site specifically for knitters and crocheters (Ravelry, 2013).

Attention

Knitting can be an aid that helps some focus, as evidenced by the experience of Dr. Klass, a doctor that used knitting to stay attentive in class or staff meetings (Dittrich, 2001). Duffy (2007) reported the experience of a 24-year old woman with a history of alcohol and heroin addiction, parental neglect, as well as a diagnosis of ADHD. The patient reports, "I have ADHD and it is hard to concentrate. When I was put on medication I would be up and down and needed to do something. [Knitting] got me through a medication trial so I didn't snap on people, (p. 72). Nelson (2005) reported about a pilot knitting project for at-risk students at Broadway Middle School and noted that the program helped students gain focus and enhance concentration.

Ferber (2005) describes an interview with an art therapist that reported using knitting with children with ADHD. Her interviewee reported that the children with ADHD had pride in

learning a new skill and it was able to help them focus. In my own experience, knitting while in the classroom keeps my hands busy and allows my mind to focus on what is being presented or discussed without wandering.

Altruism

Keyes (2002) wrote that the greater number of voluntary social roles we engage in, the higher our social and psychological well being will be. Knitting provides a number of ways to be altruistic. The Knitting Guild Association lists over 45 knitting charities on their site (2013). An organization called Project Linus provides blankets for children in need (Project Linus, 2013). An organization called Knitting for Noggins, based at Arkansas Children's Hospital, has received over 211,000 hats for children in need since the beginning of their program.

Many elementary and middle schools have gotten involved in charitable knitting. Eighty third-graders at Westwood Elementary School in Texas knit over 325 baby hats that were donated to expectant mothers in Bangladesh and Malawi. The hats help increase the chances of survival for those babies by helping to keep them warm. One of the organizers noted that the kids were amazed that they could possibly save a baby by making these hats and that making the hats had a much greater impact on the children than other volunteer efforts, like food drives (Stanton, 2007).

At Keswick Christian School sixth graders knit for penguins that were affected by an oil spill. The penguin sweaters kept the animals from cleaning themselves and ingesting harmful oils until volunteer workers could clean them (Cooper, 2001). At Boulder Bluff Elementary School, students can participate in a group called Looms of Love. The group donates to a local nonprofit that provides services to victims of domestic violence and their children (Rindge, 2012).

In prisons, the items that prisoners knit are often donated to the surrounding communities. One of the facilitators of this type of program, Sandy Hand, deems this "restorative justice," (Christiansen, 2003, p. 39). The prisoners give back to the community by donating stuffed animals to local police departments to give to children in traumatic situations.

Knitting for those in need provides the giver with an opportunity to reach out and touch another human being (or penguin), with a physical object full of love and warmth. Murphy (2002) describes the joy that she has in knitting for others. In one case she mindfully prayed with each stitch and had parishioners at her church also knit stitches and pray, as they collaborated on a garment for a woman in hospice care. Knitting for others can provide a visceral and personal way to impact others.

Dementia

Symptoms associated with dementia may be reduced with activities like knitting. In a longitudinal study with 2,040 individuals age 65 and older, regular participation in a number of activities including traveling, odd jobs, knitting, or gardening were associated with a lower risk of subsequent dementia (Fabrigoule et al. , 1995).

Adam et al. (2000) used knitting as a therapeutic technique in a case study with a 70-year old female patient with Alzheimer's. She initially suffered from depression, apathy, sleep problems, and loss of appetite. She relearned knitting. She had previously been highly skilled at knitting and had performed it on a regular basis. A teacher assisted her until she could knit for 30 minutes with no mistakes or help. The intervention lasted 13 weeks, twice a week, for one hour. By the fourth week she was able to correct her own mistakes. At 3 months her depression and apathy had completely disappeared, along with appetite and sleeping problems. Her husband also reported that his caretaking burden was reduced as the patient became more active with housework. She was overall more cheerful and less tired.

Powerful Movements

Knitting can serve as a type of movement meditation. In his book *The Relaxaton Response,* Benson (1975) writes, "Like meditation or prayer, knitting allows for the passive release of stray thoughts. The rhythmic and repetitive quality of the stitching, along with the needles clicking, resembles a calming mantra." (p. 80) Later Benson (2001) notes, "The relaxation response can be elicited by a number of techniques, such as diaphragmatic breathing, repetitive prayer, qi gong, yoga, progressive muscle relaxation, jogging—even knitting. (p. 58).

Broadbent (2005) attests to the power of knitting to help with a variety of issues for her patients,including panic attacks, nightmares, attention deficit disorders, and concentration. She writes:

> The body has an inbuilt relaxation response. When you bring about this response you are essentially blocking the stress hormones, adrenalin and nonadrenalin. Slower brain waves also occur. It's fairly straightforward. When you do something meditative like knitting, you decrease metabolism, you decrease heart rate, blood pressure, and decrease the rate of breath. (p. 16)

Repetitive movements may also reduce the risk of trauma while an emotional event is occurring. Holmes, Brewin, and Hennesy (2004) found that subjects had reduced risk of trauma when performing a visuospatial task while they watched traumatizing films. The subjects reported less emotional distress and intrusive imagery. Visuospatial tasks also helped dieters reduce imagery and craving for forbidden foods, like chocolate (Kemps et al., 2008). Hand movements may also help us connect with our verbal pathways, making it easier to verbalize thoughts (Hare, 1999; Skipper, Goldin-Meadow, Nusbaum, & Small, 2009).

Knitting work may also help your brain to relax and come up with solutions that you have been struggling with. Maurer (as cited in Borgnes-Giramonti, 2012) notes that engaging in a soothing repetitive task like knitting absorbs your midbrain in the process of making something, a solution to your struggle may appear. He says, "The brain gets tired after about 90 minutes of

trying to figure something out. When you engage in a pleasurable, relaxing activity like crafting, it gives the conscious mind a break from solution-searching, during which the unconscious mind may come up with solutions on its own. Neuroscientists don't understand quite why this happens, but it's a well-documented phenomenon (p. 180)."

Therapeutic Metaphor

Duffy (2007) writes about the power of knitting as a metaphor:

In the knitting program, rather than striving for perfection, we teach how to accept and cope with flaws. First projects with uneven edges and dropped stitches can serve as metaphors. As they look at their early knitted work it can serve as a visual reminder of their growth and development over the months, both in knitting and recovery. Clients are reminded that each day in recovery is like knitting: sometimes it seems difficult, but one day at a time, one stitch at a time produces remarkable results. This is a reminder that, while we all have imperfections, we are still whole. (p. 76)

Part of creating metaphors through knitting comes when the finished knitted object serves as a transitional object for clients. Duffy (2007) noted that when working with a group of women at a drug and alcohol treatment center, many clients wanted to make knitted handbags. They used the handbags when leaving the facility to complete errands. The handbags became transitional objects that served to remind them of their sobriety and why they should stay clean while out in the world.

Ferber (2005) interviewed an art therapist in an outpatient clinic in Wisconsin. The art therapist uses fibers as a metaphor when working with clients. "For example, when working with boundary issues, she asks them to delineate with yarns where one starts and the other begins, encouraging them to explore the edges. The tangling and untangling is a powerful metaphor for problem solving and negotiating sticky places in life," (p 43).

In my personal experience, I find that flaws in knitting are a great tool. Some flaws make fundamental changes to the garment that must be amended. Some flaws are slight and hidden

and would not show without the most careful scrutiny. As in life, we all have flaws or make mistakes, some tiny, some gargantuan. Though we cannot tear out and reknit our lives the way we can with a knitted garment, it is worth examining what things are changeable and what things must be left behind to move forward. We might scrutinize ourselves to the highest degree, but most often no one else would notice these slight imperfections. Making mistakes in knitting opens up discussion about which imperfections to overlook, and which to tackle.

Flow

Knitting may help to bring about states of flow for some individuals. Flow is a mental state that happens when an individual is completely immersed in a task, so much so that they do not have an awareness of their physical being, or notions of time passing (Csikszentmihalyi, 1997). Csikszentmihalyi (1990) delineates eight components of activities that produce flow:

1. The experience usually occurs when we confront tasks we have a chance of completing.
2. We must be able to concentrate on what we are doing.
3. The task has clear goals.
4. The task provides immediate feedback.
5. One acts with a deep but effortless involvement that removes from awareness the worries and frustrations of everyday life.
6. Enjoyable experiences allow people to exercise a sense of control over their actions.
7. Concern for the self disappears, yet paradoxically the sense of self emerges stronger after the flow experience is over.
8. The sense of the duration of time is altered: hours pass by in minutes, and minutes can stretch out to seem like hours. The combination of all these elements causes a sense of deep enjoyment. (p.49)

Ferber (2005) examined some elements of Flow in her Hand Knitting Survey. Three questions pertained to Flow. These included, "When I knit I 'step outside' my usual self and experience an entirely different state of being," "When I knit, time moves," followed by the option to choose "slower" or faster," and "When I knit I get so caught up in it that I don't notice anything else," (p. 260). A large number of her participants experienced this state. Sixty-three

percent of respondents had experienced a feeling of stepping outside of themselves, 77%

reported an experience of altered time, and 95% reported feeling that they had been caught up

with the activity and did not notice anything else, but many also noted that the experience was a

rare occurrence.

Flow is beneficial because it allows individuals to disconnect from negative thought,

alleviate self-preoccupation, and harness creative energy. These are all elements that can

enhance growth and wellness for persons involved in these activities. Martin Seligman (2002), a

proponent of positive psychology, which focuses on increasing wellness and strengths, rather

than disorders, says this about Flow:

> When we are engaged (absorbed in flow), perhaps we are investing, building
> psychological capital for our future. Perhaps flow is the state that marks psychological
> growth. Absorption, the loss of consciousness and the stopping of time may be
> evolution's way of telling us that we are stocking up psychological resources for the
> future. (p. 116)

Knitting in Schools

Knitting in schools is not new territory. Waldorf schools routinely teach knitting as part

of the curriculum. The aim of Waldorf education is to educate the whole child: spirit, soul, and

body. Part of the curriculum includes practical skills like woodworking, knitting, and gardening

that are fundamental to development of the child (Nicholson, 2000). At Waldorf schools,

children are taught to knit in the first grade, before they learn to write, read, or work with

numbers (Eugene, 2009). Eugene discusses theory by Jean A. Ayres. He notes that the "ability

to program a motor act, shows a close relation to reading skills, even though reading would

appear to be only distantly related to goal-directed movement of the body," (p. 2). Ayres (1974)

discusses that children with finger agnosia, meaning they lack control, make more errors when

tested on arithmetical ability than children without finger agnosia. At Waldorf schools, knitting

is a skill that is foundational for other skills. Eugene interviewed Anne McDonald, who shared

her account of knitting in school for soldiers around the time of World War 1. She says:

> Knitting's the best thing to steady your nerves. The boys in our room that used to sit and
>
> fumble their ink-wells, or tap their pencils, or tinker with their rulers, or maybe flip bits
>
> of art-gum at you when somebody was reciting, are so busy with their knitting that the
>
> never fidget or behave. And the girls—my, how their knitting counts up! Pauline and
>
> Esther each knit a sweater a week and keep up with their lessons as well as ever while
>
> Guy's the champion boy-knitter of the school. He has finished three sweater and four
>
> pairs of wristlets, and is knitting a helmet now. Helmets are hard, too, but we've to a half
>
> dozen boys well started on them. (p. 2)

Eugene discusses that knitting in schools can help with overly stimulated and hyperactive

children. He discusses some facets of knitting that make knitting especially beneficial:

> What occurs when a child sets about to knit? Needles are held in both hands, with each
> hand assigned its respective activity. Laterality is immediately established, as well as the
> eye's control over the hand. From the outset, the child is asserting a degree of control
> over his will. The right needle must enter a rather tightly-wound loop of yarn on the left
> needle, weave it through and pull it away, in the process tying a knot. Only a steady,
> controlled hand can accomplish such a feat, so the power of concentration is awakened—
> indeed, there is no other activity performed by seven or eight year-olds that can evoke
> such a degree of attentiveness as knitting. This training in concentration helps, to use the
> phrase of the teacher Dennis Klocek, to "teach the will to think." It will go far in
> supporting the child's problem-solving capacities in later years. (p. 2-3)

At Waldorf schools, numerical learning is enhanced when students learn to knit. They

often incorporate mathematical learning into the knitting process. Students may be instructed to

knit 3 rows of yellow, followed by 2 rows of blue, enhancing color recognition and numerical

recognition at the same time. Children at Waldorf Schools are also given the opportunity to

learn the entire process for yarn manufacturing, touching the sheep before they touch yarn, to

become educated consumers (Eugene, 2009). They learn about the history of different materials

like wool, silk, and cotton, before they learn how to work with the material. Waldorf schools aim to help children learn that clothing can be valued; divorcing the cultural notions that clothing is disposable fashion that serves a symbol of status.

Knitting with At-Risk Youth in a Group Format

Using a knitting group as an extracurricular activity for at-risk elementary school children seems like a plausible fit. Teaching children to knit opens a new pathway for potential interests, new positive peer relationships, working with an adult that might serve as a mentor, as well as increasing meta-cognitive skills, social skills, and self-management skills. Knitting groups have the potential to engage many of the protective factors discussed in the literature about at-risk students.

Engaging Protective Factors

A knitting group could provide potential for a positive relationship with a significant adult, in the form of the school counselor, or an additional leader. Christiansen (1997) pointed out that a positive relationship with an adult could serve as a protective factor for at-risk students, along with having special hobbies and interests. This group could provide an additional stable relationship with an adult, as well as new potential friendships with peers. Blum and Ellen (2002) also noted that extracurricular activities serve as a protective factor for at-risk students, and Pittman, Martin, and Williams (2007) discussed that extracurricular activity may bring about more prosocial behavior, engagement, healthy development, and academic achievement for students. Knitting is a likely activity for elementary school students because it can be learned easily, can be done at home or school, has a low material cost (Clave-Brule et al., 2009), and if desired, it can be an activity that the student returns to throughout life (Rebmann, 2006).

Meta-cognitive skills are enhanced with knitting because the task inherently involves goal setting, memory skills, and progress monitoring; factors noted by Brigman and Campbell (2003) to be key for academic and social competence. Progress monitoring is a natural part of knitting, because the fabric is being produced in front of the knitter's eyes (Clave-Brule et al., 2009). If one continues to knit on a single project or large swatch of knitted fabric, it is easy to see when the knitting becomes more even with fewer mistakes. Progress and goal setting can go hand in hand. A new knitter may have a goal of completing a hat, a fairly easy project that is often taught to beginning knitters. When the goal is met, the knitter may try something more difficult, like a sweater or sock. The individual project can be goals and measures of progress. Learning new techniques can be goals that point toward more advanced skills. Memory skills are used by learning and remembering how to perform different stitches or patterns. When a knitter becomes more proficient at the knit stitch, it requires less mental energy to produce, and has a muscle memory function. Learning new techniques creates a need to call forth memory skills again.

Self-management skills, an additional key for academic and social competence, may also be enhanced by knitting. Attention, regulating anger, and motivation are included in this skill set (Brigman & Campbell, 2003). Several authors have reported that knitting aids in working with clients with ADHD (Dittrich, 2001; Duffy, 2007; Nelson, 2005). Knitting has also been reported to help prisoners manage anger (Christiansen, 2003). Motivation can be incited by knitting as a knitter becomes excited about a new project, or working toward completing a piece.

Knitting enhances social skills (Duffy, 2007; Rebmann, 2006) and may even help decrease social anxiety (Clave-Brule et al., 2009) as it gives group participants a secondary focus. A knitting group gives the students involved a chance to create new friendships with peers, as well as enhance social skills like listening, interpersonal skills, teamwork, and social

problem solving. As some students excel, they may be able to help students that are not learning as quickly. They have the opportunity to help peers learn, or possibly figure out a solution together.

Past Examples

Knitting has been used with at-risk elementary students in several schools. The programs have been informal, yet they have had lasting effects on the participants. Nelson (2005) interviewed an organizer from a pilot knitting group project that was part of the Needle Arts Mentoring Program. She reported that the students had gains in concentration skills, self-discipline, self-esteem, and attention to detail. One of the student's teachers reported to Lively that if her student became disruptive she would instruct the student to take out their knitting to help them calm down. This example provides further evidence for knitting as a soothing device that can also enhance self-management skills.

Rindge (2012) writes about a knitting program called Looms of Love, at a Title 1 school in South Carolina. Carolyn Mullinax, a teacher at the school, created a program that teaches kids to knit and focuses on community service at the same time. Students donate goods to a local nonprofit. She anticipated that the group would have about 20 children, but it quickly grew to 30 and has a waiting list. Kids must write a paragraph about what it would mean to them to participate to be eligible for the group. She reports that many students have begun knitting at home and teaching their siblings.

Ranada Young is an English Language Development Specialist at Roberts High School, an alternative school for students with behavior issues, in Oregon. She decided to teach students to knit because knitting had helped her focus in the past and she thought it might benefit her

students as well. She found that behavior incidents in her class dropped dramatically, students began paying attention, the number of behavior incidence decreased, and for some students test scores and grades improved. The hours that students spend knitting also count toward community service requirements for graduation. Young remarked that she felt the program helped teach empathy and compassion to her students (Maiers, 2011).

Education World (2013) interviewed a counselor at North Gresham Grade School in Oregon. The school counselor discusses that she began teaching crochet to a young girl with depression that would not speak. Crocheting together helped her build trust with the student. The school counselor began to teach third through fifth grade students in her office at recess. She started an afterschool program called Loops and Stitches. The school counselor reports that the students are positively influenced by being engaged in a creative activity that is productive and allows them to use their hands. One of her proudest accomplishments in the program is teaching a boy with severe learning disabilities. He can successfully knit and has taught other students. Over her four years of teaching students to knit, the school counselor estimates that she has taught over 150 students to knit or crochet.

At Seth Boyden Demonstration School in New Jersey, Judith Symonds founded a program called Knitting Together a Community. The program began by training 85 students and 20 adults. Beginning students use white yarn to note their beginner status. Students help teach each other. Symonds reports that the school has over 250 students knitting during baseball games, while waiting for soccer practice to begin, and in other spare moments while waiting. She notes that knitting aligns well with the philosophy of multiple intelligences at her magnet school. It can enhance mathematical-logical intelligence, visual-spatial, bodily-kinesthetic, interpersonal, and naturalist forms of intelligence. Symonds says that students feel successful and have improved attitudes about school and schoolwork in this program. She notes that next

year the students plan on learning how to dye yarn by using plants from their school garden (Education World, 2013).

Conclusion

Knitting has been used in a variety of different therapeutic ways. It has been used to help clients with anxiety (Clave-Brule et al., 2009), stress reduction (Utsch, 2007), dementia (Adam et al., 2000; Fabrigoule et al., 1995), social connection (Clave-Brule et al., 2009; Duffy, 2007; Rebman, 2006; Wallace, 2011) empowerment (Christiansen, 2003; Duffy, 2007), and attention (Duffy, 2007; Ferber, 2005; Nelson, 2005). It is a low cost, easy to learn skill that has great potential for a number of populations.

The aim of this study is to explore the impact of knitting with at-risk students, and to further explore the knitting as a potential expressive arts tool. Knitting has the potential to engage them at several levels that form core tenets of positive psychology as it may stimulate creativity, love of learning, altruism, optimism, self-control, appreciation of beauty and excellence, and flow in the students that participate.

Key components of student success like self-management skills, social skills, and meta-cognitive skills can be enhanced as this visuospatial activity engages concentration skills, motivation, memory, progress monitoring, and goal setting. Those skills can enhance academic and social success for students, and may have the added benefit of improving the classroom environment for the students. A group format will allow for strengthening of peer relationships that increase empowerment and reduce victimization.

CHAPTER 3: METHODS

Research Design

This study employs a quantitative design to help gain a fuller picture of the impact of therapeutic knitting in an after school program for the children that participate. The Social Skills Improvement System (SSIS) (Gresham & Elliot, 2008) provides a quantitative assessment of any changes for each child's behavioral, social, and academic profile prior to beginning the program. This assessment takes place at three points of the program: prior to beginning, at eight weeks, and again at 16 weeks. A checklist, called the "I Feel" checklist (Dominick, 2013) was given to each participant to fill out at the beginning and end of each group session as well.

Sample

For this study, the population included any 4th grade student at a local elementary school experiencing social or behavioral problems at school or home. The study included 10 children. The school counselor recommended students that had an interest in learning to knit, who also experienced some academic, behavioral, or social difficulties at school. The school counselor is a knitter, so many of the students have some knowledge about knitting, and several had previously expressed an interest in learning how to knit. The group included all female students. Schectman (2004) notes that most practitioners recommend same-sex and same-age groups to eliminate tension between the genders and include children with similar developmental levels.

The children in the group were chosen from students that the school counselor deemed as "at-risk," meaning that they might have challenges behaviorally, socially, or academically. At-risk students are typically ethnic minorities, students with disabilities, students whose second language is English, and students from low socioeconomic backgrounds (Lagana-Riordan, et al., 2011). Each student in this group had challenges in at least one of these areas: social skills,

behavioral problems, or academic problems. Eight of the ten students were from a low socioeconomic background. In this case, that was measured by a student's eligibility for free and reduced lunch programs. All of the students were female and in grade 4. Nine of the students were age nine, and one student was age ten. Six of the girls live with one biological parent. One student lives with both biological parents. Two students live with a biological parent and a step parent. One student lives half time with one biological parent and half time with the other biological parent and a step parent.

Procedures

Before beginning this study, the procedures and materials were reviewed by the Institutional Review Board. The parents of each child were contacted to discuss the program and obtain consent for their child to participate. In addition, students were asked for their assent. Teachers were also asked for consent to participate by completing the SSIS (Gresham & Elliot, 2008) for each child that participated in the group. Students could leave the group of their own volition. I formed the group and worked as the group leader with permission from the school administration. My position as group leader ended after the 16 weeks of the study. See appendices A, B, and C for examples of the student, parent, and teacher informed consent.

The participants were randomly divided into two groups of 5 students. Berg, Landreth, and Fall (2013) recommends that groups of children age nine and younger should be limited to 5-6 students. Half of the students met for 8 weeks from the final week of September until the beginning of November. The second group of 5 students met from the beginning of December until the end of January. Each group met every week, excluding school breaks or school cancelations. During the study, I met with each group for one and a half hours on Thursday afternoons immediately after school. Each session began in the cafeteria, where participants had

an afterschool snack and completed the I Feel Checklist (Dominick, 2013). This lasted approximately 15 minutes each time. After a snack, we moved to the classroom to knit.

Instruments

Social Skills Improvement System (SSIS). Prior to beginning the program, the Social Skills Improvement System (SSIS) (Gresham & Elliot, 2008) was given to the parents, students, and teachers to complete. It is an assessment appropriate for children ages 8-12. The SSIS is a multi-rater, norm-referenced rating system that has rating scales for parents, students, and teachers to examine social, behavioral, and academic factors. The SSIS Social Skills scales include Assertion, Cooperation, Communication, Responsibility, Empathy, Engagement, and Self-Control. The Problem Behavior subscale includes Autism Spectrum, Hyperactivity/Inattention, Internalizing, Externalizing, and Bullying. The Academic Competence scale is on the teacher form only (Gresham et. al, 2010). The student form consists of 75 items. The parent form consists of 79 items, and the teacher form has 83 items. Gresham and Elliot (2008) estimate that the test takes about 15 minutes for participants to complete.

Teachers and parents rate the frequency that the student exhibits different social skills and problem behaviors. The scale is 4-point with ratings of *never*, *seldom*, *often*, and *almost always*. Students rate themselves on these scales by indicating *not true*, *a little true*, *a lot true*, and *very true*. Each rater also assesses how important each skill is to the student's development (Gresham et. al, 2010).

Reliability. Internal consistency reliability for the scales and subscales is high with median scale reliabilities of the Social Skills and Problem Behavior scales in the mid to upper .90s for every age group on the Teacher, Parent, and Student forms. For the Academic Competence scale coefficient alpha is in the upper .90s. For the subscales, the median reliabilities are in the high .80s for the Teacher form, near .80 for the student form, and in the

mid .80s for the Parent form. Alpha coefficients for each of these equal or exceed .70, making

them appropriate for analyzing weaknesses and strengths, as well as choosing intervention plans

(Gresham & Elliot, 2008). For the present study, alpha coefficients were not analyzed due to the

small sample size of the groups.

Test-retest reliability for the Teacher Form has a median adjusted coefficient of .81. For

the parent form the median subscale reliability is .80. The student form has a median adjusted

reliability of .71. For the Teacher and Parent forms, the reliability was highest on Social Skills

and Problem Behaviors scales. Gresham and Elliot (2008) noted that there was lower internal

consistency on the Student Form.

Interrater reliability on the Teacher Form had adjusted reliability coefficients for the

subscales between .36 to .69 with a median of .58. Gresham and Elliot (2008) examined

interrater reliability by having more than one teacher rate the same student. In this case, the

mean interval between ratings was 63 days for the Teacher Form. For the Parent Form the

reliability coefficients for the subscales range from .37 to .69, with a median of .59. The mean

interval between parent ratings was 58 days. In this case, students were evaluated by two close

caregivers (Gresham & Elliot, 2008).

Validity. For each form Gresham and Elliot (2008) explain that the pattern of

coefficients among the scales is as expected. The correlation between the Social Skills scale and

Problem Behaviors is moderate and negative, ranging between -.42 to -.65. The correlation

between Academic Competence and the Social Skills scale is moderate and positive: .50 in the 5

to 12 age group and .53 in the 13 to 18 age group. The subscales also show internal consistency

for the items in each subscale with moderate or high coefficients. The test demonstrates

convergent validity with moderate and positive coefficients between the matched subscales on

two forms. These are between .30 to .40s for each age group. There are low or negative

correlations among dissimilar scales or subscales, showing discriminant validity for SSIS. Gresham and Elliot (2008) note that these range between .20 to .34 and are lower on average than correlations among matched subscales.

I Feel Checklist. The I Feel Checklist (Dominick, 2013) is an 18-item list containing 6 positive emotions, 6 negative emotions, and 6 neutral emotions. Participants are asked to choose all of the emotions they are feeling at that moment. The test is written at a 4th grade Flesh-Kincaid reading level. The test is scored by counting the number of positive, neutral, and negative emotions experienced by the participant.

Intervention

The intervention took place at a Title 1 elementary school in northwest Arkansas in several different rooms. The first group began in the school counselor's room, then moved to the music teacher's room, and finally to a second grade classroom. The second group took place solely in the second grade classroom. The school counselor, currently has an after school program in place called "Crafty Kids" for at-risk students. She was in the building as an available resource during the group time, but she was not present in the classroom. Bus rides were provided for all students participating in the Crafty Kids program. They were also provided for students participating in my program.

The intervention lasted for approximately 16 weeks total, 8 weeks per group. Hoag and Burlingame (1997) note that groups with children and adolescents are often short-term, with an average of 10 weeks. When school holidays or inclement weather conflicted with a session, the group could not meet for consecutive weeks, but each still met for 8 weeks total. During the second group, the school was closed on the day of the group meeting for several weeks. In order to make up the sessions, for the last three weeks of the second group, we met two days in a row.

I taught all of the knitting skills in person. I also provided handouts with diagrams and descriptions to aid in the knitting instruction. In the first session of each group, I explained the group expectations and asked members what their expectations were for the group. My expectations included: Respect other group members by taking turns talking, and staying in control of our bodies. Look to the group leader for group guidance. Try our best to stay on task. Have fun and learn a new activity. We covered these expectations during the first session. The first session also included knitting instruction. I helped the students learn how to cast-on stitches onto a knitting needle, and knit into these stitches.

The sessions started with basic knitting elements, such as how to hold the yarn and needles, how to "cast-on," (make the first row of knitting), how to complete the knit stitch, and how to make a purl stitch. Learning the basic elements varied for each student, depending on the speed at which the children learned, their relative interest, and whether or not they practiced at home. I provided all knitting materials, and the students had the opportunity to take them home to practice with them if they wish. Students each had a project they could take home, and one they left at school. I kept spare materials available each week in case a student forgot to bring their materials to the group.

I let the participants' interest guide a first project and choice of materials. I provided yarn in a variety of colors. The goal for this intervention was to teach the participants knitting to a level they feel comfortable starting and completing a project, and working with them for enough hours that the motion of knitting becomes comfortable and rhythmic.

Before seeking participants, I submitted the details of my study to the Institutional Review Board for approval. I implemented the intervention during the fall semester, starting in September and ending in late January. Prior to forming the group, each potential participant, their parents, and their teachers received informed consent about the nature of the study. They

were assured that their identity remained anonymous throughout the study and the reported outcomes. The school counselor and I had the most information about the purpose of the group. Since the study relied on some input from the teachers, group members, and parents at the culmination of the study, we did not provide them with all of the information about what I wished to examine about the treatment: changes in academic, behavioral, and social skills for the students. I did not wish to influence the input of the teachers or parents or skew them to provide this type of information. The study did not harm the participants in any way, and if they wished to quit the program at any time, they had that option.

<div align="center">**Data Analysis**</div>

Sources

As part of this study, I recorded my observations on a weekly basis. This information was helpful to keep track of what happened in each session and to observe changes in the group over time. The information also provided me with information about the relative similarities or differences between the two groups and themes that appeared in the sessions. This information was kept in a password-protected file that was not shared with anyone.

For the quantitative portion of the study, the Mann-Whitney Wilcoxon test was performed with Statistical Analysis Software (SAS) to compare the results of the SSIS scores for each group to see if the there was any difference between the academic skills, social skills, or behavioral skills for each group. The Mann-Whitney-Wilcoxon is a nonparametric test appropriate for use with small sample sizes when normality cannot be assumed (Korosteleva, 2014). Group 2 served as a control group with SSIS scores collected at two points before they began the group intervention. Due to the dropout of two group members in Group 2, the final SSIS collection point was not included in the analysis.

To summarize, the current study examined the Social Skills, Problem Behaviors, and Academic Skills of 10 4th grade elementary school students using the Social Skills Achievement System (SSIS), an assessment with good reliability and validity (Gresham & Elliot, 2008). The students were randomly assigned into either the control group or the experimental group. Each participant, their teacher, and their parents completed the SSIS prior to beginning the first group. Group meetings were once a week for 1.5 hours, except in the case of school holidays or inclement weather closings. The experimental group learned how to knit and participated in the group for 8 sessions. Following this group, all participants, their teachers, and their parents completed the SSIS assessment a second time. After the first group ended, the control group learned how to knit and met for 8 sessions. Following the completion of both groups, all participants, their teachers, and their parents completed the SSIS assessment a final time.

CHAPTER FOUR: RESULTS

This chapter will describe the statistics used to analyze the data in this research, as well as the statistical findings for each test. Though data was collected at three points for each group, the following statistical analysis examines only the data at the first two collection points due to low retention rates in the second intervention group and the small sample size. The data includes information from the SSIS (Gresham & Elliot, 2008) pre and post test scores on the Student form and the Teacher form. The return rate for the Parent form was very low for each collection point, so those scores were not used in the analysis.

Demographic Descriptive Statistics

The total sample size in the following study was ten ($N = 10$) elementary school students. Each student returned the SSIS form on the three occasions the form was given, and the student's teachers also returned an SSIS form for each student each time it was administered. Two of the students did not attend the second group, but they continued to fill out the SSIS assessments each time it was given. Of the 10 participants, 100% ($n = 10$) were female and 100% ($n = 10$) were in 4th grade. Ninety percent of the students ($n = 9$) were age nine, and one participant ($n = 1$) was age 10. Sixty percent ($n = 6$) of the students were Caucasian, 30% ($n = 3$) were African American, and 10% ($n = 1$) were Asian Indian. Only one child, 10% ($n = 1$) was living with both biological parents. Thirty percent ($n = 3$) were living with one biological parent and one step parent, 50% ($n = 5$) were living with one biological parent, and one student, 10% ($n = 1$) was living with one biological parent and one step-parent half-time and the other biological parent half time. Eighty percent of the students ($n = 8$) in the groups were eligible for free and reduced lunch. Table 4.1 summarizes the demographics of the group members. Students did not

fill out a form with demographic information. The information was provided by the school

counselor on site.

Table 4.1

Summary of Demographic Descriptive Statistics

Demographic	*n*	Percent of Total
Sex		
Female	10	100
Grade		
4th	10	100
Age		
9	9	90
10	1	10
Ethnicity		
Caucasian	6	60
African American	3	30
Asian Indian	1	10
Living Situation		
Both Biological Parents	1	10
One Bio/One step-parent	3	30
One Biological parent	5	50
Two Bio parents half-time each/One step-parent	1	10
Eligible for Free/Reduced lunch		
Yes	8	80
No	2	20

Descriptive Statistics

Main scales descriptive statistics

Descriptive analysis was performed for the larger scales on the SSIS: Academic

Achievement, Problem Behaviors, and Social Skills. Results for the mean and standard

deviations of these variables on the pre-test, post-test, and difference between the pre-and post-

test are shown in table 4.2. For the pre-test Group 1 had a mean of 10.8 (SD = 9.78) for the

Teacher Form Academic Achievement, a mean of 22.2 (SD = 9.26) for Teacher Form Problem

Behaviors, and average of 90 (SD = 14.71) for Teacher Form Social Skills, and average of 38.8 (SD =15.3) for Student Form Problem Behaviors, and a mean of 83.2 (SD = 25.3) for Student Form Social Skills. Group 2 pre-test scores were a mean of 10.2 (SD = 3.56) for Teacher Form Academic Achievement, a mean of 24.4 (SD = 12.58) for Teacher Form Problem Behaviors, a mean of 95.6 (SD = 25.29) for Teacher Form Social Skills, a mean of 35.6 (SD = 14.69) for Student Form Problem Behaviors, and a mean of 76.4 (SD = 8.71) for Student Form Social Skills.

The same variables were examined for the post-test. Group 1 had a mean of 13.4 (SD = 9.79) for Teacher Form Academic Achievement, 18 (SD = 8.28) for Teacher Form Problem Behaviors, 78.4 (SD = 14.77) for Teacher Form Social Skills, and average of 34.6 (SD = 12.36) for Student Form Problem Behaviors, and a mean of 81.2 (SD = 18.89) for Student Form Social Skills on the post-test. Group 2 had a mean of 11.2 (SD = 6.65) for Teacher Form Academic Achievement, 16.2 (SD = 11.9) for Teacher Form Problem Behaviors, 75.8 (SD = 25.2) for Teacher Form Social Skills, and average of 39.4 (SD = 11.89) for Student Form Problem Behaviors, and a mean of 89 (SD = 12.23) for Student Form Social Skills on the post-test.

The difference between each of the pre-test and post-test variables was calculated and the mean and standard deviation for the change in each group was calculated. Group 1 changes on Teacher Form Academic Achievement averaged 2.6 (SD = 2.51), -4.2 (SD = 10.28) on Teacher Form Problem Behaviors, -11.6 (SD = 8.02) for Teacher Form Social Skills, -4.2 (SD = 15.59) for Student Form Problem Behaviors, and -2 (SD = 10.12) for Student Form Social Skills. Group 2 changes on Teacher Form Academic Achievement averaged 1 (SD = 3.16), -8.2 (SD = 4.21) on Teacher Form Problem Behaviors, -19.8 (SD = 17.02) for Teacher Form Social Skills, 3.8 (SD = 9.07) for Student Form Problem Behaviors, and 12.6 (SD = 5.46) for Student Form Social Skills.

Table 4.2

Summary of Descriptive Statistics Main Scales

Variable on Pre-Test	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Academic Achievement	*10.8 (9.78)*	*10.2 (3.56)*
Teacher Form Problem Behaviors	22.2 (9.26)	24.4 (12.58)
Teacher Form Social Skills	90 (14.71)	95.6 (25.29)
Student Form Problem Behaviors	38.8 (15.3)	35.6 (14.69)
Student Form Social Skills	*83.2 (25.3)*	*76.4 (8.71)*

Variable on Post-Test	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Academic Achievement	13.4(9.79)	11.2 (6.65)
Teacher Form Problem Behaviors	18 (8.28)	16.2 (11.9)
Teacher Form Social Skills	78.4 (14.77)	75.8 (25.2)
Student Form Problem Behaviors	34.6 (12.36)	39.4 (11.89)
Student Form Social Skills	*81.2 (18.89)*	*89 (12.23)*

Difference in Scores by Variable	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Academic Achievement	2.6 (2.51)	1.0 (3.16)
Teacher Form Problem Behaviors	-4.2 (10.28)	-8.2 (4.21)
Teacher Form Social Skills	-11.6 (8.02)	-19.8 (17.02)
Student Form Problem Behaviors	-4.2 (15.59)	3.8 (9.07)
Student Form Social Skills	*-2.0 (10.12)*	*12.6 (5.46)*

Note: $n = 10$

Subscale descriptive statistics

Social Skills subscales. Descriptive analysis was performed for the Social Skills subscales and Problem Behavior Subscales. For the Social Skills, these include Communication, Cooperation, Assertiveness, Responsibility, Empathy, Engagement, Self Confidence, and Empathy. For each subscale score, the score from the Teacher form and the Student form are included. Results for the mean and standard deviations of the Social Skills subscale variables on the pre-test, post-test, and difference between the pre-and post-test are shown in table 4.3. For the pre-test Group 1 had a mean of 14.4 (*SD* = 2.30) for Teacher Form Communication, a mean

of 8.6 (*SD* = 2.07) for Teacher Form Cooperation, a mean of 9.4 (*SD* =2.41) for Teacher Form

Assertiveness, a mean of 11 (*SD* = 2.92) for Teacher Form Responsibility, a mean of 10.2 (*SD*

=3.11) for Teacher Form Empathy, a mean of 9.2 (*SD* =2.77) for Teacher Form Engagement,

and a mean of 15.2 (*SD* =3.7) for Teacher Form Self-Confidence. For the Student Form

subscale variables, Group 1 had a mean of 9.2 (*SD* = 2.59) for Student Form Communication, a

mean of 12.6 (*SD* = 3.58) for Student Form Cooperation, a mean of 13.4 (*SD* = 5.18) for

Student Form Assertiveness, a mean of 12.8 (*SD* = 5.07) for Student Form Responsibility, a

mean of 13.2 (*SD* =1.48) for Student Form Empathy, a mean of 14.4 (*SD* =4.51) for Student

Form Engagement, and a mean of 9.6 (*SD* =5.32) for Student Form Self-Confidence.

For the pre-test Group 2 had a mean of 13.8 (*SD* = 4.97) for Teacher Form

Communication, a mean of 8.6 (*SD* = 5.18) for Teacher Form Cooperation, a mean of 7.8 (*SD*

=3.11) for Teacher Form Assertiveness, a mean of 11.4 (*SD* = 5.08) for Teacher Form

Responsibility, a mean of 10.8 (*SD* =3.96) for Teacher Form Empathy, a mean of 9.4 (*SD* =4.83)

for Teacher Form Engagement, and a mean of 13.6 (*SD* =5.59) for Teacher Form Self-

Confidence. For the Student Form subscale variables, Group 2 had a mean of 11.6 (*SD* = 2.61)

for Student Form Communication, a mean of 9.8 (*SD* = .84) for Student Form Cooperation, a

mean of 10.8 (*SD* = 3.7) for Student Form Assertiveness, a mean of 12.8 (*SD* = 2.49) for Student

Form Responsibility, a mean of 13.8 (*SD* =2.28) for Student Form Empathy, a mean of 11.8 (*SD*

=1.92) for Student Form Engagement, and a mean of 5.8 (*SD* =2.95) for Student Form Self-

Confidence.

The same variables were examined for the post-test. For the post-test Group 1 had a

mean of 16.4 (*SD* = 2.97) for Teacher Form Communication, a mean of 10 (*SD* = 1.73) for

Teacher Form Cooperation, a mean of 9.8 (*SD* =1.48) for Teacher Form Assertiveness, a mean

of 12.4 (*SD* = 2.61) for Teacher Form Responsibility, a mean of 12.4 (*SD* =2.7) for Teacher

Form Empathy, a mean of 13.2 (*SD* =4.09) for Teacher Form Engagement, and a mean of 15.8

(*SD* =3.7) for Teacher Form Self-Confidence. For the Student Form subscale variables, Group 1

had a mean of 10.4 (*SD* = 2.3) for Student Form Communication, a mean of 11.6 (*SD* = 5.81)

for Student Form Cooperation, a mean of 13.2 (*SD* = 2.77) for Student Form Assertiveness, a

mean of 12.6 (*SD* = 4.77) for Student Form Responsibility, a mean of 13.6 (*SD* =2.51) for

Student Form Empathy, a mean of 13.2 (*SD* =4.15) for Student Form Engagement, and a mean

of 6.6 (*SD* =2.7) for Student Form Self-Confidence.

For the post-test Group 2 had a mean of 18 (*SD* = 2.83) for Teacher Form

Communication, a mean of 9.2 (*SD* = 3.9) for Teacher Form Cooperation, a mean of 11.8 (*SD*

=3.77) for Teacher Form Assertiveness, a mean of 13.8 (*SD* = 3.56) for Teacher Form

Responsibility, a mean of 13.8 (*SD* =3.7) for Teacher Form Empathy, a mean of 14.2 (*SD* =5.84)

for Teacher Form Engagement, and a mean of 14.8 (*SD* =5.59) for Teacher Form Self-

Confidence. For the Student Form subscale variables, Group 2 had a mean of 12.4 (*SD* = 2.97)

for Student Form Communication, a mean of 12.2 (*SD* = 5.26) for Student Form Cooperation, a

mean of 11.6 (*SD* = 3.65) for Student Form Assertiveness, a mean of 11.4 (*SD* = 2.07) for

Student Form Responsibility, a mean of 16 (*SD* =2.35) for Student Form Empathy, a mean of

15.8(*SD* =1.64) for Student Form Engagement, and a mean of 8.4 (*SD* =3.58) for Student Form

Self-Confidence.

The difference between each of the pre-test and post-test variables was calculated and the

mean and standard deviation for the change in each group was calculated. For the calculated

difference, Group 1 changes were a mean of 2.0 (*SD* = 2.92) for Teacher Form Communication,

a mean of 1.4 (*SD* = 1.95) for Teacher Form Cooperation, a mean of .40 (*SD* =2.61) for Teacher

Form Assertiveness, a mean of 1.4 (*SD* = 1.95) for Teacher Form Responsibility, a mean of 2.2

(*SD* =1.79) for Teacher Form Empathy, a mean of 4.0 (*SD* =2.35) for Teacher Form

Engagement, and a mean of .60 (*SD* =2.3) for Teacher Form Self-Confidence. For the Student

Form subscale variables calculated differences, Group 1 had a mean of 1.2 (*SD* = 2.17) for

Student Form Communication, a mean of -1.0 (*SD* = 3.24) for Student Form Cooperation, a

mean of -.20 (*SD* = 3.70) for Student Form Assertiveness, a mean of -.20 (*SD* = 1.1) for Student

Form Responsibility, a mean of .40 (*SD* =2.19) for Student Form Empathy, a mean of -1.2 (*SD*

=2.17) for Student Form Engagement, and a mean of 9.6 (*SD* =5.32) for Student Form Self-

Confidence.

For the post-test Group 2 changes were a mean of 4.2 (*SD* = 4.49) for Teacher Form

Communication, a mean of .60 (*SD* = 2.19) for Teacher Form Cooperation, a mean of 4.0 (*SD*

=1.58) for Teacher Form Assertiveness, a mean of 2.4 (*SD* = 4.62) for Teacher Form

Responsibility, a mean of 3.0 (*SD* =2.0) for Teacher Form Empathy, a mean of 4.8 (*SD* =3.49)

for Teacher Form Engagement, and a mean of 1.2 (*SD* =2.17) for Teacher Form Self-

Confidence. For the Student Form subscale variables, Group 2 had a mean of .80 (*SD* = 3.11)

for Student Form Communication, a mean of 2.4 (*SD* = 4.62) for Student Form Cooperation, a

mean of .80 (*SD* = 2.28) for Student Form Assertiveness, a mean of -1.4 (*SD* = 2.07) for Student

Form Responsibility, a mean of 2.2 (*SD* =.84) for Student Form Empathy, a mean of 4.0 (*SD*

=1.58) for Student Form Engagement, and a mean of 2.6 (*SD* =3.29) for Student Form Self-

Confidence.

Table 4.3

Summary of Descriptive Statistics Social Skills Subscales

Variable on Pre-Test	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Social Skills	90 (14.71)	95.6 (25.29)
Teacher Form Communication	*14.4 (2.30)*	*13.8 (4.97)*
Teacher Form Cooperation	*8.6 (2.07)*	*8.6 (5.18)*
Teacher Form Assertiveness	*9.4 (2.41)*	*7.8 (3.11)*
Teacher Form Responsibility	*11 (2.92)*	*11.4 (5.08)*
Teacher Form Empathy	10.2 (3.11)	10.8 (3.96)

	Group 1	Group 2
Teacher Form Engagement	*9.2 (2.77)*	*9.4 (4.83)*
Teacher Form Self Confidence	*15.2 (3.7)*	*13.6 (5.59)*
Student Form Social Skills	*83.2 (25.3)*	*76.4 (8.71)*
Student Form Communication	*9.2 (2.59)*	*11.6 (2.61)*

Table 4.3 continued

Variable on Pre-Test	Group 1	Group 2
	M (SD)	M (SD)
Student Form Cooperation	*12.6 (3.58)*	*9.8 (.84)*
Student Form Assertiveness	*13.4 (5.18)*	*10.8 (3.7)*
Student Form Responsibility	*12.8 (5.07)*	*12.8 (2.49)*
Student Form Empathy	13.2 (1.48)	13.8 (2.28)
Student Form Engagement	*14.4 (4.51)*	*11.8 (1.92)*
Student Form Self Confidence	*9.6 (5.32)*	*5.8 (2.95)*

Variable on Post-Test	Group 1	Group 2
	M (SD)	M (SD)
Teacher Form Social Skills	90 (14.71)	95.6 (25.29)
Teacher Form Communication	*16.4 (2.97)*	*18 (2.83)*
Teacher Form Cooperation	*10 (1.73)*	*9.2 (3.9)*
Teacher Form Assertiveness	*9.8 (1.48)*	*11.8 (3.77)*
Teacher Form Responsibility	*12.4 (2.61)*	*13.8 (3.56)*
Teacher Form Empathy	12.4 (2.7)	13.8 (3.7)
Teacher Form Engagement	*13.2 (4.09)*	*14.2 (5.84)*
Teacher Form Self Confidence	*15.8 (3.7)*	*14.8 (5.59)*
Student Form Social Skills	*83.2 (25.3)*	*76.4 (8.71)*
Student Form Communication	*10.4 (2.3)*	*12.4 (2.97)*
Student Form Cooperation	*11.6 (5.81)*	*12.2 (5.26)*
Student Form Assertiveness	*13.2 (2.77)*	*11.6 (3.65)*
Student Form Responsibility	*12.6 (4.77)*	*11.4 (2.07)*
Student Form Empathy	13.6 (2.51)	16 (2.35)
Student Form Engagement	*13.2 (4.15)*	*15.8 (1.64)*
Student Form Self Confidence	*6.6 (2.7)*	*8.4 (3.58)*

Difference in Scores by Variable	Group 1	Group 2
	M (SD)	M (SD)
Teacher Form Social Skills	90 (14.71)	95.6 (25.29)
Teacher Form Communication	*2.0 (2.92)*	*4.2 (4.49)*
Teacher Form Cooperation	*1.4 (1.95)*	*.60 (2.19)*
Teacher Form Assertiveness	*.40 (2.61)*	*4.0 (1.58)*
Teacher Form Responsibility	*1.4 (1.95)*	*2.4 (4.62)*
Teacher Form Empathy	*2.2 (1.79)*	*3.0 (2.0)*
Teacher Form Engagement	*4 (2.35)*	*4.8 (3.49)*
Teacher Form Self Confidence	*.60 (2.30)*	*1.2 (2.17)*
Student Form Social Skills	*83.2 (25.3)*	*76.4 (8.71)*
Student Form Communication	*1.2 (2.17)*	*.80 (3.11)*
Student Form Cooperation	*-1.0 (3.24)*	*2.4 (4.62)*
Student Form Assertiveness	*-.20 (3.70)*	*.80 (2.28)*

Student Form Responsibility	*-.20 (1.10)*	*-1.4 (2.07)*
Student Form Empathy	*.40 (2.19)*	*2.2 (.84)*
Student Form Engagement	*-1.2 (2.17)*	*4.0 (1.58)*
Student Form Self Confidence	*9.6 (5.32)*	*2.6 (3.29)*

Problem Behaviors subscales. The Problem Behavior subscales included in the analysis

were Externalization, Bully, Hyperactivity/Inattention, and Internalization. For each subscale

score, the score from the Teacher form and the Student form are included. Results for the mean

and standard deviations of the Problem Behaviors subscale variables on the pre-test, post-test,

and difference between the pre-and post-test are shown in table 4.4.

For the pre-test Group 1 had a mean of 6.2 (*SD* = 4.38) for Teacher Form

Externalization, a mean of 1.8 (*SD* = 2.17) for Teacher Form Bully, a mean of 7.4 (*SD* =3.36)

for Teacher Form Internalization, and a mean of 8.2 (*SD* = 2.77) for Teacher Form

Hyperactivity/Inattention. On the Student forms, for the pre-test Group 1 had a mean of 11 (*SD*

= 5.78) for Student Form Externalization, a mean of 3.8 (*SD* = 3.96) for Student Form Bully, a

mean of 17 (*SD* =3.94) for Student Form Internalization, and a mean of 12.8 (*SD* = 5.54) for

Student Form Hyperactivity/Inattention. For the pre-test Group 2 had a mean of 6.4 (*SD* = 5.59)

for Teacher Form Externalization, a mean of .80 (*SD* = .84) for Teacher Form Bully, a mean of

8.2 (*SD* =6.83) for Teacher Form Internalization, and a mean of 9.2 (*SD* = 4.82) for Teacher

Form Hyperactivity/Inattention. On the Student forms, for the pre-test Group 2 had a mean of

12.8 (*SD* = 8.32) for Student Form Externalization, a mean of 2 (*SD* = 1.41) for Student Form

Bully, a mean of 15 (*SD* =5.96) for Student Form Internalization, and a mean of 13.6 (*SD* =

7.09) for Student Form Hyperactivity/Inattention.

The same variables were examined for the post-test. For the post-test Group 1 had a

mean of 4.0 (*SD* = 3.94) for Teacher Form Externalization, a mean of 1.2 (*SD* = 1.79) for

Teacher Form Bully, a mean of 6 (*SD* =1.41) for Teacher Form Internalization, and a mean of

7.2 (*SD* = 2.28) for Teacher Form Hyperactivity/Inattention. On the Student forms, for the pre-

test Group 1 had a mean of 10.2 (*SD* = 4.82) for Student Form Externalization, a mean of 4.0 (*SD* = 3.93) for Student Form Bully, a mean of 15.6 (*SD* =3.58) for Student Form Internalization, and a mean of 10.8 (*SD* = 3.35) for Student Form Hyperactivity/Inattention. For the post-test Group 2 had a mean of 4.6 (*SD* = 4.16) for Teacher Form Externalization, a mean of 0 (*SD* = 0) for Teacher Form Bully, a mean of 4 (*SD* =4.69) for Teacher Form Internalization, and a mean of 8.4 (*SD* = 5.73) for Teacher Form Hyperactivity/Inattention. On the Student forms, for the pre-test Group 2 had a mean of 11.6 (*SD* = 5.13) for Student Form Externalization, a mean of 4.4 (*SD* = 3.21) for Student Form Bully, a mean of 18.4 (*SD* =6.35) for Student Form Internalization, and a mean of 12.2 (*SD* = 5.76) for Student Form Hyperactivity/Inattention.

The difference between each of the pre-test and post-test variables was calculated and the mean and standard deviation for the change in each group was calculated. For the calculated difference, Group 1 changes were a mean of -2.2 (*SD* = 5.07) for Teacher Form Externalization, a mean of -.60 (*SD* = 2.51) for Teacher Form Bully, a mean of -1.4 (*SD* = 2.79) for Teacher Form Internalization, and a mean of -1.0 (*SD* = 3.54) for Teacher Form Hyperactivity/Inattention. On the Student forms, for the pre-test Group 1 had a mean of -.80 (*SD* = 2.59) for Student Form Externalization, a mean of .20 (*SD* = 3.56) for Student Form Bully, a mean of -1.4 (*SD* =6.11) for Student Form Internalization, and a mean of -2.0 (*SD* = 4.06) for Student Form Hyperactivity/Inattention. For the calculated differences, Group 2 had a mean of -1.8 (*SD* = 2.86) for Teacher Form Externalization, a mean of -.80 (*SD* = .83) for Teacher Form Bully, a mean of -4.2 (*SD* =3.42) for Teacher Form Internalization, and a mean of -.89 (*SD* = 2.49) for Teacher Form Hyperactivity/Inattention. On the Student forms, for the pre-test Group 2 had a mean of -1.2 (*SD* = 4.32) for Student Form Externalization, a mean of 2.4 (*SD* = 2.79) for Student Form Bully, a mean of 3.4 (*SD* = 7.5) for Student Form Internalization, and a mean of -1.4 (*SD* = 3.36) for Student Form Hyperactivity/Inattention.

Table 4.4

Summary of Descriptive Statistics Problem Behaviors

Variable on Pre-Test	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Problem Behaviors	22.2 (9.26)	24.4 (12.58)
Teacher Form Externalization	*6.2 (4.38)*	*6.4 (5.59)*
Teacher Form Bully	1.8 (2.17)	.80 (.84)
Teacher Form Internalization	*7.4 (3.36)*	*8.2 (6.83)*
Teacher Form Hyperactivity/Inattention	*8.2 (2.77)*	*9.2 (4.82)*
Student Form Problem Behaviors	38.8 (15.3)	35.6 (14.69)
Student Form Externalization	*11 (5.78)*	*12.8 (8.32)*
Student Form Bully	*3.8 (3.96)*	*2 (1.41)*
Student Form Internalization	*17 (3.94)*	*15 (5.96)*
Student Form Hyperactivity/Inattention	*12.8 (5.54)*	*13.6 (7.09)*

Variable on Post-Test	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Problem Behaviors	18 (8.28)	16.2 (11.9)
Teacher Form Externalization	*4.0 (3.94)*	*4.6 (4.16)*
Teacher Form Bully	*1.2 (1.79)*	*0 (0)*
Teacher Form Internalization	*6 (1.41)*	*4 (4.69)*
Teacher Form Hyperactivity/Inattention	*7.2 (2.28)*	*8.4 (5.73)*
Student Form Problem Behaviors	34.6 (12.36)	39.4 (11.89)
Student Form Externalization	*10.2 (4.82)*	*11.6 (5.13)*
Student Form Bully	*4 (3.93)*	*4.4 (3.21)*
Student Form Internalization	*15.6 (3.58)*	*18.4 (6.35)*
Student Form Hyperactivity/Inattention	*10.8 (3.35)*	*12.2 (5.76)*

Difference in Scores by Variable	Group 1 M (SD)	Group 2 M (SD)
Teacher Form Problem Behaviors	-4.2 (10.28)	-8.2 (4.21)
Teacher Form Externalization	*-2.2 (5.07)*	*-1.8 (2.86)*
Teacher Form Bully	-.60 (2.51)	-.80 (.83)
Teacher Form Internalization	*-1.40 (2.79)*	*-4.2 (3.42)*
Teacher Form Hyperactivity/Inattention	*-1.0 (3.54)*	*-.89 (2.49)*
Student Form Problem Behaviors	-4.2 (15.59)	3.8 (9.07)
Student Form Externalization	*-.80 (2.59)*	*-1.2 (4.32)*
Student Form Bully	.20 (3.56)	2.4 (2.79)
Student Form Internalization	*-1.4 (6.11)*	*3.4 (7.5)*
Student Form Hyperactivity/Inattention	*-2.0 (4.06)*	*-1.4 (3.36)*

Note: $n = 10$

Mann-Whitney-Wilcoxon

Due to the small sample size, a non-parametric statistical test seemed like a logical choice to examine the data. The Mann-Whitney-Wilcoxon test was used to examine the scores for Group 1 and Group 2 for main scale and subscale variables. These variables include Academic Achievement as measured on the Teacher form, Social Skills as measured on the Student and Teacher forms, and Problem Behaviors as measured on the Student and Teacher forms. On the Social Skills scale, the subscale variables included in the Mann-Whitney-Wilcoxon analysis were Communication, Cooperation, Assertiveness, Responsibility, Empathy, Engagement, and Self-Confidence for both the Teacher and Student forms. On the Problem Behaviors scale, the subscale variables included on the Mann-Whitney-Wilcoxon analysis were Externalization, Bully, Hyperactivity/Inattention, and Internalization. The difference between the pre-test and post-test for each of these variables was calculated and the difference in the scores was compared by group using the Mann-Whitney-Wilcoxon test. Effect sizes were calculated for each of the scores based on the differences between groups. Results are summarized in Table 4.5 for the main scales, Table 4.6 for the Social Skills subscales, and Table 4.7 for the Problem Behaviors subscales.

Main Scales

Teacher form Academic Achievement. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = .7356$, $p = .4603$. The effect size was computed as $r = .23$.

Teacher form Social Skills. Results were analyzed using the Mann-Whitney-Wilcoxon

text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant

difference for the underlying distributions between the change in scores for Group 1 and Group

2, $z = .6325$, $p = .5556$. The effect size was computed as $r = .20$.

Teacher form Problem Behaviors. Results were analyzed using the Mann-Whitney-

Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a

significant difference for the underlying distributions between the change in scores for Group 1

and Group 2, $z = .6305$, $p = .5397$. The effect size was computed as $r = .20$.

Student form Problem Behaviors. Results were analyzed using the Mann-Whitney-

Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a

significant difference for the underlying distributions between the change in scores for Group 1

and Group 2, $z = -.6305$, $p = .5159$. The effect size was computed as $r = -.20$.

Student form Social Skills. Results were analyzed using the Mann-Whitney-Wilcoxon

text in the Statistical Analysis System (SAS) program. The analysis revealed a significant

difference for the underlying distributions between the change in scores on social skills measured

on the Student form for Group 1 and Group 2, $z = -2.507$, $p = .0079$. The sample means show

that participants in the control group (Group 2) had significantly higher measured social skills

then the experimental group (Group 1). For Group 1 $M = 3.0$, $SD = 4.79$; for Group 2 $M = 8.0$,

$SD = 4.79$. The observed difference between the means was - 5.0. The effect size was computed

as $r = -.79$, which is considered a large effect, meaning that participation in the knitting group

might have some adverse effect on a student's social skills.

Table 4.5

Mann-Whitney Wilcoxon Results Main Scales

Variable	Z (Pr > Z)	r
Teacher Form Academic Achievement	.7356 (.4603)	.23

Teacher Form Problem Behaviors	.6305 (.5556)	.20
Teacher Form Social Skills	.6325 (.5397)	.20
Student Form Problem Behaviors	-.6305 (.5159)	-.20
Student Form Social Skills	-2.5067 (.0079)	-.79

Social Skills Subscales

Teacher form Communication. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = .-.7402$, $p = .5$. The effect size was computed as $r = -.23$.

Teacher form Problem Cooperation. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = .4243$, $p = .6349$. The effect size was computed as $r = .13$.

Teacher form Assertiveness. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -1.8974$, $p = .0635$. The effect size was computed as $r = -.60$, which is considered a large effect size. This means participation in the knitting group could have had an adverse effect on a student's level of assertiveness.

Teacher form Responsibility. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.4324$, $p = .6825$. The effect size was computed as $r = -.14$.

Teacher form Empathy. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant

difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.6384$, $p = .5159$. The effect size was computed as $r = -.20$.

Teacher form Engagement. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.5406$, $p = .5556$. The effect size was computed as $r = -.17$.

Teacher form Self-Confidence. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.1061$, $p = .8810$. The effect size was computed as $r = -.03$.

Student form Communication. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = .1061$, $p = .8889$. The effect size was computed as $r = .34$, which is considered a medium effect, meaning that participation in the knitting group may have increased Communication scores for the experimental group.

Student form Cooperation. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -1.0541$, $p = .3095$. The effect size was computed as $r = -.34$, which is considered a medium effect, meaning that participation in the knitting group may have decreased Cooperation scores for the experimental group.

Student form Assertiveness. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant

difference for the underlying distributions between the change in scores for Group 1 and Group

2, $z = -.2108$, $p = .7857$. The effect size was computed as $r = -.07$.

Student form Responsibility. Results were analyzed using the Mann-Whitney-

Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a

significant difference for the underlying distributions between the change in scores for Group 1

and Group 2, $z = .8649$, $p = .3968$. The effect size was computed as $r = .27$.

Student form Empathy. Results were analyzed using the Mann-Whitney-Wilcoxon text

in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant

difference for the underlying distributions between the change in scores for Group 1 and Group

2, $z = -1.5038$, $p = .1667$. The effect size was computed as $r = -.48$, which is considered a

medium effect, meaning that participation in the knitting group may have decreased Empathy

scores for the experimental group.

Student form Engagement. Results were analyzed using the Mann-Whitney-Wilcoxon

text in the Statistical Analysis System (SAS) program. The analysis revealed a significant

difference for the underlying distributions between the change in scores on social skills measured

on the Student form for Group 1 and Group 2, $z = -2.5377$, $p = .0079$. The sample means show

that participants in the control group (Group 2) had significantly higher measured social skills

then the experimental group (Group 1). For Group 1 $M = 3.0$, $SR = 4.73$; for Group 2 $M = 8.0$,

$SR = 4.73$. The observed difference between the means was - 5.0. The effect size was computed

as $r = -.80$, which is considered a large effect, meaning that participation in the knitting group

might have decreased Engagement for participants in the experimental group.

Student form Self-Confidence. Results were analyzed using the Mann-Whitney-

Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a

significant difference for the underlying distributions between the change in scores for Group 1

and Group 2, $z = -1.9966$, $p = .0397$. The effect size was computed as $r = -.63$, which is

considered a large effect, meaning that participation in the knitting group may have decreased

Self-Confidence scores for the experimental group.

Table 4.6

Mann-Whitney Wilcoxon Results Social Skills Subscales

Variable	Z (Pr > Z)	r
Teacher Form Social Skills	.6325 (.5397)	.20
Teacher Form Communication	-.7402 (.5000)	-.23
Teacher Form Cooperation	.4243 (.6349)	.13
Teacher Form Assertiveness	-1.8974(.0635)	-.60
Teacher Form Responsibility	-.4324 (.6825)	-.14
Teacher Form Empathy	-.6384 (.5159)	-.20
Teacher Form Engagement	-.5406 (.5556)	-.17
Teacher Form Self-Confidence	-.1061 (.8810)	-.03
Student Form Social Skills	-2.5067 (.0079)	-.79
Student Form Communication	.1061 (.8889)	.34
Student Form Cooperation	-1.0541 (.3095)	-.34
Student Form Assertiveness	-.2108 (7857)	-.07
Student Form Responsibility	.8649 (.3968)	.27
Student Form Empathy	-1.5038 (.1667)	-.48
Student Form Engagement	-2.5377 (.0079)	-.80
Student Form Self-Confidence	-1.9966 (.0397)	-.63

Note: n = 10

Problem Behaviors Subscales

Teacher form Externalization. Results were analyzed using the Mann-Whitney-

Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a

significant difference for the underlying distributions between the change in scores for Group 1

and Group 2, $z = 0$, $p = .9841$. The effect size was computed as $r = 0$.

Teacher form Bully. Results were analyzed using the Mann-Whitney-Wilcoxon text in

the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant

difference for the underlying distributions between the change in scores for Group 1 and Group

2, $z = 0$, $p = 1.0$. The effect size was computed as $r = 0$.

Teacher form Hyperactivity/Inattention. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = .2108$, $p = .8095$. The effect size was computed as $r = .07$.

Teacher form Internalization. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = 1.0607$, $p = .2778$. The effect size was computed as $r = .34$, which is considered a medium effect, meaning that participation in the knitting group may have increased internalization scores for the experimental group.

Student form Externalization. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = 0$, $p = 1.0$. The effect size was computed as $r = 0$

Student form Bully. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -1.0707$, $p = .3095$. The effect size was computed as $r = -.34$, which is considered a medium effect, meaning that participation in the knitting group could have lowered Bully problem behaviors for members of the experimental group.

Student form Hyperactivity/Inattention. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.3192$, $p = .7540$. The effect size was computed as $r = -.10$.

Student form Internalization. Results were analyzed using the Mann-Whitney-Wilcoxon text in the Statistical Analysis System (SAS) program. The analysis failed to reveal a significant difference for the underlying distributions between the change in scores for Group 1 and Group 2, $z = -.6286$, $p = .5159$. The effect size was computed as $r = -.20$.

Table 4.7

Mann-Whitney Wilcoxon Results Problem Behavior Subscales

Variable	Z (Pr > Z)	r
Teacher Form Problem Behaviors	*.6305 (.5556)*	*.20*
Teacher Form Externalization	*0 (.9841)*	*0*
Teacher Form Bully	*0 (1.000)*	*0*
Teacher Form Hyperactivity/Inattention	*.2108 (.8095)*	*.07*
Teacher Form Internalization	*1.0607 (.2778)*	*.34*
Student Form Problem Behaviors	*-.6305 (.5159)*	*-.20*
Student Form Externalization	*0 (1.000)*	*0*
Student Form Bully	-1.0707 (.3095)	-.34
Student Form Hyperactivity/Inattention	*-.3192 (.7540)*	*-.10*
Student Form Internalization	*-.6286 (.5159)*	*-.20*

I Feel Checklist Results

For the experimental group, results on the I Feel Checklist (Dominick, 2013) were summed and averaged to gain information about the overall positive, negative, and neutral emotions experienced during the knitting group. Table 4.8 summarizes these results. The mean Positive emotions from group session pre-tests were 11.75. The mean Positive emotions from group session post-tests were 15, showing an increase in 3.25 to the mean Positive score. The mean Neutral emotions from group session pre-tests were 7.625. The mean Neutral emotions from group session post-tests were 9.75, showing an increase in 2.125 to the mean Neutral score. The mean Negative emotions from group session pre-tests were 7.625. The mean Negative emotions from group session post-tests were 7.125, showing a decrease of .5 to the mean Negative score.

Table 4.8

I Feel Checklist Pre and Post Test Mean Scores

Variable	Pre-test *M*	Post-test *M*	Difference
Positive emotions	11.75	15	3.25
Table 4.8 continued			
Neutral emotions	7.625	9.75	2.125
Negative emotions	7.625	7.125	.5

Group Observations

Weekly observations were recorded in a password protected file. The themes of the group for the week, as well as the members that attended the group were recorded. Overall, there were not widely varying themes between the two groups. Each group discussed other classmates, teachers, a bit about home life, current events, and expressions about the self in turn.

The most noticeable difference between the groups was size and level of cohesion. The experimental group consisted of five members. This group seemed to have more behavioral issues and struggle with the knitting process due to the number of individuals to manage in the group. There were a few more conflicts among members in that group, because members seemed divided into two distinct groups of friends, though this fluctuated often. In the second group, the three members mostly cooperated. In the first group there were 2-3 students that were regularly disruptive to the group process, meaning in this case the individual had two or more outbursts in a group session, demonstrated refusal to participate in the group, kept disturbing items in the group room, or hit or pushed other group members. In the second group one individual was disruptive on a regular basis.

Summary

Results from the statistical analysis reveal very few statistically significant results. There were statistically significant results for Social Skills and Engagement as measured on the Student Form. In both of these cases, Group 1 showed a reduction in scores on Student form Social

Skills (z = -2.507, p = .0079) and Student form Engagement (z = -2.5377, p = .0079) that was

significantly different from the overall change in scores for members in Group 2.

Effect sizes were also computed for each variable, to understand clinical implications in

the absence of other statistically significant information. Several Pearson's r effect sizes were in

the medium to high range. These included effect sizes for Student form Social Skills (r = -.79),

Teacher form Assertiveness (r = -.60), Student form Communication (r = .34), Student form

Cooperation (r = -.34), Student form Empathy (r = -.48), Student form Engagement (r = -.80),

Student form Self-Confidence (r = -.63), Teacher form Internalization (r =.34), and Student form

Bully (r = -.34).

On the I Feel Checklist results, participants had an increase in Positive emotions (M =

3.25), an increase in Neutral emotions (M = 2.125), and a slight reduction in Negative emotions

(M = .5) for the pre- and post-test means for the experimental group.

CHAPTER FIVE: DISCUSSION

Summary

The following chapter provides an overview of the study, including a brief description of the research and research questions. Following that, a brief summary of the statistical results is included. The chapter ends with conclusions about the results, a discussion of the limitations in this study, and recommendations for future research.

Statement of the Problem

Group psychotherapy is one of the most cost-effective ways to provide counseling to students in schools that require assistance with emotional issues, problem behaviors, and social skills (Shectman , 2002). Since at least 20 percent of students experience some emotional, developmental, or behavioral problem during their time at school (Schectman, 2004), it is important to address these needs in a manner that is effective and limits disruptions for the students, teachers, and administrators. DeLucia-Waack (2000) notes that a typical counselor to student ratio is 1 counselor per 400 students, making group counseling a way to maximize counseling services for students.

Results Summary

For this study, the scores on the SSIS (Gresham & Elliot, 2008) were collected at three points: prior to beginning the first knitting group with Group 1 (the experimental group), between the completion of the first knitting group and the beginning of the knitting group with Group 2 (the control group), and following the completion of the second knitting group. Due to the low retention rates in the second knitting group, the analysis includes the scores from the first and second SSIS assessment points only. The SSIS scores include the main scales for the Teacher and Student forms. The Parent forms were sent home with participants at the same three

points, but the return rate was very low, so those were not included in the analysis. The analysis

includes information from the Academic Achievement measure on the Teacher Form, and the

Social Skills and Problem Behaviors measures on both the Student and Teacher Forms. Several

subscale variables for the Social Skills and Problem Behaviors scales were also examined.

Due to the small sample size ($n = 10$), the Mann-Whitney-Wilcoxon test was performed.

The Mann-Whitney-Wilcoxon is a nonparametric test appropriate for use with small sample sizes

when normality cannot be assumed (Korosteleva, 2014). Participation in the knitting group was

related to a large decrease in overall Student form Social Skills, Teacher form Assertiveness,

Student form Engagement, and Student form Self-Confidence. There was a medium effect size

for Student form Communication, Student form Cooperation, Student form Empathy, Teacher

Form Internalization, and Student form Bully. Participation in the knitting group moderately

affected these variables. In the cases of Student form Cooperation, Student form Empathy, and

Student form Bully participation in the knitting group was moderately correlated with a

reduction in these variables.   In the cases of Student form Communication and Teacher form

Internalization, participation in the knitting group was moderately correlated with an increase in

these variables.

Research Questions

Social functioning. One of the research questions for this project is whether engaging in

the knitting group has an impact on an at-risk student's social functioning. In this case,

participation in the knitting group seemed to have moderate to high impacts on Student form

Social Skills, Teacher form Assertiveness, Student form Engagement, Student form Self-

Confidence, Student form Communication, Student form Cooperation, Student form Empathy,

and Teacher form Internalization. It was unexpected that participation in the group was highly

correlated with a reduction in overall Student form Social Skills, Teacher form Assertiveness,

Student form Engagement, and Student form Self-Confidence. It was unexpected that participation in the group was moderately correlated with a decrease in Student form Cooperation and Student form Empathy scores. The only variable within the Social Skills scale with a positive correlation was Student form Communication. Participation in the knitting group seems to be moderately correlated with an increase in Communication scores for the members of the experimental group.

Behavioral functioning. The second research question for this project asked whether engaging in the knitting group has an impact on an at-risk student's behavioral functioning. In this study, under the Problem Behaviors scale the only variables with a moderate effect size were Teacher form Internalization and Student form Bully. It was unexpected that participation in the knitting group was moderately correlated with an increase on Teacher form Internalization scores. Participation in the knitting group was moderately correlated with a reduction in Student form Bully behaviors for students participating in the experimental group.

Academic functioning. A third research query involved the impact on an at-risk student's academic functioning. In this study, participation in the knitting group did not have a statistically significant impact on Academic Achievement, and it had only a small effect size (r = .23) for this variable, as measured on the Teacher form.

Emotions experienced. The I Feel Checklist was used to monitor the emotions experienced by participants as they learned to knit. This assessment was given to participants at the beginning and end of each session. The checklist contained 18 feeling words: 6 positive, 6 neutral, and 6 negative. Results from this assessment were inconclusive. Though written at a 4th grade Flesh-Kincaid reading level, it was clear during the use of the assessment that many of the students did not understand many of the words. When looking at the data there was no clear indication that participation in the knitting group produced more positive, neutral, or negative

emotions following each session. The checklist was less a measure of emotions related to learning the task, and more a measure of the cohesiveness or general mood of the group on any given day. In this way, the I Feel Checklist did not measure what it was intended to measure.

Overall, participation in the knitting group did seem to impact social functioning and behavioral functioning, but the results were mixed and unexpected. It was surprising that the experimental group had lower Student form Social Skills, Teacher form Assertiveness, Student form Engagement, Student form Self-Confidence, Student form Empathy, and Student form Cooperation scores, along with a rise in Teacher form Internalization scores, following participation in the knitting group. The only social skill that seems to be moderately enhanced by participation in the knitting group is Student form Communication, and the Student form Bully score was also moderately affected by participation in the knitting group.

Conclusions

At-Risk Students in a Group Setting

Consistent with Hovland, Smaby, and Maddux (1996), the students in each knitting group demonstrated many acting-out behaviors like negative-aggressive behavior and a need for direction in work. Even when it was clear that each participant understood the knit stitch, one participant continued to insist that this researcher wrap the yarn for each of her stitches, or she wished that this researcher would complete the knitting for her. Most of the participants continually needed direction to stay on task, and many times participants acted out in negative-aggressive ways by hitting each other, disturbing each other's items, and making fun of each other. Also consistent with Hovland, Smaby, and Maddux (1996) in some of these times, a single girl would respond with social withdrawal until the issue was resolved.

This researcher used recommendations from Berg, Landreth, and Fall (2013) when conducting the knitting groups. The authors note that children are comfortable in same-sex

groups, and activity-related groups are most appropriate for children aged 9-13, and group sessions should last one to one and a half hours once a week. The participants in this study were all aged 9-10 and were female, and we met weekly for one and a half hours. Berg, Landreth, and Fall (2013) also recommend that a counselor conducting these groups is to be non-intervening and permissive with only suggestions for behavioral limits, rather than outright discipline to stop the behavior. This proved to be extremely challenging when conducting the group. The teachers had specifically noted that our group members were not to interfere with the materials in the rooms where we held the knitting groups. This was a constant battle of suggestions and frustrations. Much of the time of the group was spent making behavioral suggestions related to leaving room materials alone and respecting the personal space of other group members. In the first group, this was a continued issue for 3 out of the 5 participants at each meeting.

Though Berg, Landreth, and Fall (2013) do not specifically mention working with at-risk students, or students with attention and behavior problems, he does mention that students in groups in this age range are prone to acting out emotional reactions, rather than verbally expressing them. That was the experience of this researcher as a group leader. This researcher speculates that a large part of the difference in social skills between the experimental group and control group could have been due to the continued conflict and negative-aggressive behavior between the participants in Group 1. On the I Feel Checklist, participants regularly chose "Annoyed" as a commonly felt emotion at the end of sessions, and they would explain verbally that they did not like the way another participant was acting out in the session. It is possible that activity counseling groups are not an appropriate setting for building social skills, academic skills, and reducing problem behaviors with an at-risk population when many of the participants have attention problems and behavioral problems. Perhaps teaching the knitting in smaller groups or on an individual basis could be more beneficial. Though knitting has been used with

at-risk students before (Education World, 2013; Nelson, 2005; Maiers, 2011; Rindge, 2012), in these cases knitting was taught on a one-on-one basis or with several knitting instructors available. Some of these programs (Maiers, 2011; Rindge, 2012) also had altruism as a focus, which may increase levels of engagement and cooperation among the participants.

Group Process

Berg, Landreth, and Fall (2013) outlined a process common to activity-based groups. This involves the Preparatory Phase, a Therapeutic Phase, a Reeducational Phase, Success in Intragroup Participation, and Acceptance and Conclusion. At best, each group progressed through the Preparatory Phase, which involves introduction to the group, reality testing, discovery and relaxation; and through some of the Therapeutic phase, which involves development of transference, aggression, regression, lessening of anxiety and guilt, and catharsis. Neither group seemed to progress to The Reeducational phase, involving a capacity for delayed gratification, expansion of interest, development of personal skills, improved self-image, increased frustration tolerance, and sublimation. This researcher speculates that this was due to the length of time of the group. Each group was conducted for only eight sessions. If given a longer time, these students might have progressed to a more advanced stage of the group, and possibly improved more social skills.

Schectman (2002) noted that in a group setting, children often begin at the working phase of the group with high levels of initial self-disclosure. That was not true of most of the participants in this study, though Schectman (2002) was not writing specifically about activity-based groups. Participants would often discuss classmates, teachers, and school events, but they would rarely delve into social struggles or family conflicts. This researcher speculates that with more group sessions, participants might have the opportunity to spend more time in the Therapeutic Phase (Berg, Landreth, & Fall, 2013) and progress to further phases.

Promoting Student Success

These knitting groups were meant to include elements that help promote student success as discussed by Christiansen (1997), involving a positive relationship with a mentor and special hobbies and interests. The knitting activity was meant to enhance meta-cognitive skills, self-management skills, and social skills as discussed by Brigman and Campbell (2003). Knitting as an activity could enhance meta-cognitive skills through goal setting, use of memory skills, and progress monitoring. Knitting could possibly help students work on self-management skills like motivation and attention, and social skills like listening, and problem solving. In the case of Group 1, knitting did not seem to enhance many of these skills, since participants had a reduction in overall Social Skills, Engagement, Empathy, Cooperation, Assertiveness, and Self-Confidence, and an increase in Internalization scores. This researcher speculates that the participants did not become comfortable enough with the knitting process to reap some of these benefits. Though all participants did learn to knit, they expressed varying levels of interest and focus once the task was learned, and few participants became comfortable enough with the task to work without help. This researcher hypothesizes that with more time to become comfortable with the knitting task, meta-cognitive skills, self-management skills, and social skills might improve at greater levels. The moderate positive effect for the Communication score and moderately lowered Bully score for Group 1 demonstrate that there may be some interaction between participation in the knitting group and an increase in some kinds of social skills and a reduction in some kinds of problem behaviors.

Limitations

Sample Size

A limitation of this study is the small sample size of the participants. To have the greatest control over knitting instruction and group administration, both groups were conducted by this researcher over the course of several months of the school year. It was necessary to limit groups to 5 students to ensure that each participant would have enough one-on-one instruction with knitting. The smaller group size was also necessary to help manage the behavior of the participants. Behavior management was the greatest difficulty on a regular basis. This study would be strengthened with a greater number of participants for strength in statistical analysis.

Single School

This study was conducted at one elementary school in northwest Arkansas. Conducting the group at multiple schools might have broadened the base of participants. The study would have been strengthened by sampling students at more Title 1 schools in the area.

Changing Room Conditions

The experimental group sessions were carried out over three different rooms. At first, the group was conducted in the school counselor's room. This proved to be too distracting for most of the group members because they wished to play with the therapeutic toys in the room. After the first two weeks in this room, the group moved to the music room. On the third week in this room, the music teacher was working in the classroom alongside the students. He made several attempts to interact with the students. At the end of the group session on that day he made negative comments about two of the participants, in the presence of a third participant. This researcher requested that the school counselor assign us another room and reminded the school counselor that the group was a confidential gathering and it was necessary to have a space for the students to freely express themselves. On the next week, the group moved to a 2nd grade classroom and it was held there for the remaining weeks of the experimental group. The instability of the workspace could have had some adverse effects on SSIS scores.

Low Attendance

Participation in the knitting group was low. Out of the 8 weeks that the experimental group was held, all 5 girls attended only 5 of the sessions. On the fifth week, only 3 girls were present, on the 6th week only two girls were present, and on the 7th week 4 were present. One of the participants was absent for 3 weeks in a row. The low retention rates could also have adversely affected SSIS (Gresham & Elliot, 2008) scores. In the second knitting group, two participants never attended at all, and attendance was inconsistent for the remaining 3 members.

Wavering Interest

Though all participants initially expressed interest in participating in a knitting group to the school counselor, when they were active participants in the knitting group many of the participants seemed less interested in learning about the process and more interested in having a finished product. Multiple participants wished that this researcher would do the knitting for them. One participant in the experimental group routinely asked this researcher to knit for her, or she coaxed another group member into knitting for her. Out of both groups, only 3 of the participants knitted on a regular basis in and out of the group.

Group Format

Each group was conducted for only eight sessions, for one and a half hours each time. The participants might have had a greater opportunity to build social skills and increase engagement levels with more group sessions. Group 1 had five students, and this researcher found that difficult to manage, given the level of behavioral problems and attention problems for each group member. A smaller group of 2-3 students might be a better fit for learning a new hands-on task, like knitting, with at-risk students.

Recommendations for Future Research

Altered Assessment

The I Feel Checklist was written at a 4th grade Flesh-Kincaid reading level. The majority

of these participants had low Academic Achievement scores as measured by the SSIS (Gresham

& Elliot, 2008). Out of a possible maximum score of 28, the mean for Group 1 was 10.8 ($SD =$

9.78) and the mean for Group 2 was 10.2 (SD = 3.56). To maximize understanding, for this

population with low Academic Achievement scores, this researcher suggests that an emotional

checklist be written at a 2nd grade Flesh-Kincaid reading level or younger for maximum

comprehension.

Altered Group Sessions

If working with at-risk students, to teach a hands-on task like knitting, it might be

beneficial for participants to first learn one-on-one or in smaller groups of 2 or 3 to become

comfortable with the task before engaging in a larger activity-based counseling group. In the

case of Group 1, it was necessary to work one-at-a-time with each participant. During that time,

many of the other participants grew impatient and distracted or frustrated if they had already

learned the knit stitch but found themselves stuck on a mistake. If participants were more

familiar with the knitting before participating in the group setting, the focus of the group could

have involved more emotional sharing and relaxation.

In addition, more group sessions might allow participants greater opportunity to engage

in prosocial behaviors and become familiar enough with the knitting activity to experience some

of the meditative and relaxing qualities of the task. In this study, most of the participants

experienced a level of frustration that did not abate since they had limited amounts of participation in the task.

Summary

This study examined the use of knitting as an expressive arts technique as used with at-risk 4th grade elementary school students. The research questions examined whether knitting might have an impact on a student's social, behavioral, and academic functioning. In this case the results were largely inconclusive due to the small sample size, and low retention rates. The results for Social Skills and Engagement were statistically significant using the Mann-Whitney-Wilcoxon analysis, showing a decrease in these skills for the experimental group. It is unclear what may have caused the reduction in these scores, or the moderate to high correlations for a reduction in Empathy, Self-Confidence, Assertiveness, and Cooperation scores, or the moderate increase in Internalization scores. There was also a moderate correlation between participation in the knitting group and a reduction in Bully scores, as well as a moderate correlation for an increase in Communication scores for the experimental group, showing the possibility for some reduction of Problem Behaviors and improvement of Social Skills in future studies.

It might be beneficial to teach participants to knit on a one-on-one basis or in smaller groups, when working with at-risk students with behavior problems, before introducing them to a larger group of students with similar behavioral issues. In this study, much of the focus during the sessions was about keeping the participants on task, as well as managing frustration when participants struggled with knitting. If each participant had a better grasp of the knitting skills prior to the group formation, knitting, as an extracurricular task, might have had a greater effect on Academic Achievement, Social Skills, and Problem Behaviors as measured by the SSIS.

References

Adam, S., Van, D. L., Juillerat, A., & Salmon, E. (2000). The cognitive management of daily life activities in patients with mild to moderate alzheimer's disease in a day care centre: A case report. Neuropsychological Rehabilitation, 10(5), 485-509. doi: 10.1080/09602010050143568

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., and Zhang, J. (2013). The Condition of Education 2013 (NCES 2013-037). U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved from http://nces.ed.gov/pubsearch.

Ayres, A. J. (1974). The development of sensory integrative theory and practice: A collection of the works of A. Jean Ayres. Dubuque, Iowa: Kendall/Hunt Pub. Co.

Benson, H. (1975). The relaxation response. New York: Morrow.

Benson, H. (2001). Mind-body pioneer. Psychology Today, 34(3), 56.

Berg, R. C., Landreth, G. L., & Fall, K. A. (2013). *Group counseling: Concepts and procedures*. New York: Routledge.

Biederman, J., & Spencer, T. J. (2002). Nonstimulant treatments for ADHD. In P. S. Jensen, & J. R. Cooper (Eds.), Attention deficit hyperactivity disorder: State of the science-best practices. (pp. 11-1-11-16). Kingston, NJ US: Civic Research Institute.

Blum, R.W., & Ellen, J. (2002). Work group V: Increasing the capacity of schools, neighborhoods, and communities to improve adolescent health outcomes. *Journal of Adolescent Health, 31,* 288-292.

Borgnes-Giramonti, L. (2012). This is your brain on crafts. *Martha Stewart Living,* November, 179-180.

Brigman, G. & Campbell, C. (2003). Helping students improve academic achievement and school success behavior.*Professional School Counseling, 7*(2), 91-98.

Broadbent, L. (2005). Teenagers in stitches: A new craze for knitting among US teens is having amazing health benefits. *The Times*, pp. 16-17.

Christiansen, B. (2003). Interweave Knits, 8(4), 38-39, 40.

Christiansen, J. (1997). Helping teachers meet the needs of students at risk for school failure. *Elementary School Guidance & Counseling, 31*(3), 204-10.

Clave-Brule, M., Mazloum, A., Park, R. J., Harbottle, E. J., & Birmingham, C. L. (2009). Managing anxiety in eating disorders with knitting. Eating and Weight Disorders: EWD, 14(1), e1-e5.

Cooper, P. (2001, January 21). Class knits salvation for penguins in peril. *St. Petersburg Times.* Retrieved from http://www.sptimes.com/News/012101/SouthPinellas/Class_knits_salvation.shtml

Csikszentmihalyi, M. (1997). Finding flow : The psychology of engagement with everyday life. New York: BasicBooks.

Csikszentmihalyi, M. (1990). *Flow : The psychology of optimal experience*. New York: Harper & Row.

DeLucia-Waack, J. (2000). Effective group work in the schools. *The Journal for Specialists in Group Work, 25*(2), 131-132. doi:10.1080/01933920008411456

Dittrich, L. R. (2001). Knitting. Academic Medicine: Journal of the Association of American Medical Colleges, 76(7), 671-671.

Dominick, C.M. (2013). I Feel Checklist. [Assessment].

Duffy, K. (2007). Knitting through recovery one stitch at a time: Knitting as an experiential teaching method for affect management in group therapy. Journal of Groups in Addiction & Recovery, 2(1), 67-83. doi: 10.1300/J384v02n01_04

Education World. (2013). Building close-knit communities: Handcraft makes a comeback. Retrieved from http://www.educationworld.com/a_curr/profdev/profdev100.shtml

Estrella (2005). Expressive therapy: An integrated arts approach. In C.A. Malchiodi (Ed.), *Expressive therapies* (p. 183-209). New York: Guilford Press.

Eugene, S. (2009). The role of handwork in the Waldorf Curriculum. *Discover Waldorf Education: Knitting and Intellectual Development.* Retrieved from http://millennialchild.wordpress.com/article/discover-waldorf-education-knitting-and-110mw7eus832b-7/

Fabrigoule, C., Letenneur, L., Dartigues, J. F., Zarrouk, M., Commenges, D., & Barberger-Gateau, P. (1995). Social and leisure activities and risk of dementia: A prospective longitudinal study. Journal of the American Geriatrics Society, 43(5), 485-490.

Ferber, R. (2005). The psychotherapeutic and transpersonal aspects of the art and practice of hand knitting: A women's study.ProQuest Information & Learning). Dissertation Abstracts International: Section B: The Sciences and Engineering, 66(3-). (2005-99018-092).

Gladding, S. (1998). Counseling as an art: The creative arts in counseling. Alexandria, VA: American Counseling Association.

Gresham, F. M., Elliott, S. N., Cook, C. R., Vance, M. J., & Kettler, R. (2010). Cross-informant agreement for ratings for social skill and problem behavior ratings: An investigation of

the social skills improvement System—Rating scales. *Psychological Assessment, 22*(1), 157-166.

Gresham, F.M. & Elliot, S.N. (2008). *Rating scales manual.* Minneapolis, MN: Pearson.

Hare, R. D. (1999). Without conscience : The disturbing world of the psychopaths among us. New York: Guilford Press.

Hattie, J., Biggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research, 66*(2), 99-130.

Hinz, L. (2009). Expressive therapies continuum: A framework for using art in therapy. New York, NY: Routledge.

Hoag, M.J. & Burlingame, G.M. (1997). Evaluating the effectiveness of child and adolescent group treatment: A meta-analysis review. *Journal of Clinical Child Psychology, 26,* 234-246.

Hoglund, W. L., & Leadbeater, B. J. (2004). The effects of family, school, and classroom ecologies on changes in children's social competence and emotional and behavioral problems in first grade. *Developmental Psychology, 40*(4), 533-544. doi:10.1037/0012-1649.40.4.533

Holmes, E. A., Brewin, C. R., & Hennessy, R. G. (2004). Trauma films, information processing, and intrusive memory development. *Journal of Experimental Psychology: General, 133*(1), 3-22. doi:10.1037/0096-3445.133.1.3

Hovland, J., Smaby, M. H., & Maddux, C. D. (1996). At-risk children: Problems and interventions. *Elementary School Guidance & Counseling, 31*(1), 43-51.

International Expressive Arts Therapy Association. (2012). *Who We Are*. Retrieved from: http://www.ieata.org/about.html

Kataoka, S. H., Zhang, L., & Wells, K. B. (2002). Unmet need for mental health care among U.S. children: Variation by ethnicity and insurance status. *The American Journal of Psychiatry, 159*(9), 1548-1555. doi:10.1176/appi.ajp.159.9.1548

Kemps, E., Tiggemann, M., & Christianson, R. (2008). Concurrent visuo-spatial processing reduces food cravings in prescribed weight-loss dieters. *Journal of Behavior Therapy and Experimental Psychiatry, 39*(2), 177-186.

Keyes, C. M. (2002). The mental health continuum: From languishing to flourishing in life. Journal Of Health And Social Behavior, 43(2), 207-222. doi:10.2307/3090197

Knit for Life. (2004). *Knit for Life's Current Programs.* Retrieved from http://knitforlife.org/programs.html

Korosteleva, O. (2014). Nonparametric methods in statistics with SAS applications. Boca Raton: CRC Press.

Lagana-Riordan, C., Aguilar, J.P., Franklin, C., Streeter, C.L., Kim, J.S., Tripodi, S.J., & Hopson, L.M. (2011). At-risk students' perceptions of traditional schools and a solution-focused public alternative school. *Preventing School Failure, 55*, 105-114.

Leichtentritt, J., & Shechtman, Z. (1998). Therapist, trainee, and child verbal response modes in child group therapy. *Group Dynamics: Theory, Research, and Practice, 2*(1), 36-47. doi:10.1037/1089-2699.2.1.36

Lutz, A., Slagter, H. A., Rawlings, N. B., Francis, A. D., Greischar, L. L., & Davidson, R. J. (2009). Mental training enhances attentional stability: Neural and behavioral evidence. Journal of Neuroscience, 29(42), 13418-13427. doi: 10.1523/JNEUROSCI.1614-09.2009

Maiers, S. (2011, June 8). Connecting with students one stitch at a time. *National Education Association Priority Schools Campaign.* Retrieved from http://neapriorityschools.org/successful-students/connecting-with-students-one-stitch-at-a-time

Malchiodi, C. A. (2012). *Handbook of art therapy*. New York: Guilford Press.

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*(2), 205-220. doi:10.1037/0003-066X.53.2.205

Mazza, C. (2012). Microrevolt. Retrieved from http://www.microrevolt.org/mission.htm

McNeely, C. A., Nonnemaker, J. M., & Blum, R. W. (2002). Promoting school connectedness: Evidence from the national longitudinal study of adolescent health. *Journal of School Health, 72*(4), 138-46.

Murphy, B. M.,. (2002). Zen and the art of knitting : Exploring the links between knitting, spirituality, and creativity. Avon, Mass.: Adams Media Corp.

National Center for Educational Statistics.School district mapping and demographics. Retrieved July/2013, 2013, from http://nces.ed.gov/surveys/sdds/ed/index.asp

Nelson, N. (2005, November 8). Teaching students to knit turns into a purl of a program. *Headlight Herald.* Retrieved from http://www.tillamookheadlightherald.com/article_9a209a19-e781-5ebc-b603-69182b10464a.html

Nicholson, D. W. (2000). Layers of experience: Forms of representation in a Waldorf school classroom. *Journal of Curriculum Studies, 32*(4), 575-87.

Pittman, K., Martin, S., Williams, A. (2007, July). Core Principles for Engaging Young People in Community Change. Washington, D.C.: The Forum for Youth Investment, Impact Strategies, Inc.

Prinstein, M. J., & La Greca, A. M. (2004). Childhood peer rejection and aggression as predictors of adolescent girls' externalizing and health risk behaviors: A 6-year longitudinal study. *Journal of Consulting and Clinical Psychology, 72*(1), 103-112. doi:10.1037/0022-006X.72.1.103

Project Linus. (2013). *Who we are*. Retreived from http://www.projectlinus.org/about/

Ravelry. (2013). *About us.* Retrieved from http://www.ravelry.com/about

Rebmann, H. (2006). Warning-there's a lot of yelling in knitting: The impact of parallel process on empowerment in a group setting. Social Work with Groups: A Journal of Community and Clinical Practice, 29(4), 5-24. doi: 10.1300/J009v29n04_02

Riley, J, Corkhill, B., & Morris, C. (2013). The benefits of knitting for personal and social wellbeing in adulthood: Findings from an international survey. *British Journal of Occupational Therapy, 76,* 50-57.

Rindge, B. (2012, January 22). Kids knit to keep families warm. *The Post and Courier.* Retrieved from http://www.postandcourier.com/article/20120122/PC1602/301229985

Rones, M., & Hoagwood, K. (2000). School-based mental health services: A research review. *Clinical Child and Family Psychology Review, 3*(4), 223-241. doi:10.1023/A:1026425104386

Sayeg, M. (2012). Knitta: About. Retrieved from: http://knitta.com/about/

Schiffer, M. (1969). *The therapeutic play group*. New York: Grune & Stratton.

Seligman, M. E. P. (2011). Flourish: A visionary new understanding of happiness and well-being. New York, NY [u.a.: Atria paperback.

Seligman, M. E. P. (2002). Authentic happines : Using the new positive psychology to realize your potential for lasting fulfillment. New York: Free Press.

Shechtman, Z. (2002). Child group psychotherapy in the school at the threshold of a new millennium. *Journal of Counseling & Development, 80*(3), 293.

Shechtman, Z. (2004). Group counseling and psychotherapy with children and adolescents. In J.L. DeLucia-Waack, D.A. Gerrity, C.R. Kalodner, &M.T. Riva (Eds.), *Handbook of group counseling and psychotherapy* (429-444) Thousand Oaks, CA: Sage Publications.

Skipper, J. I., Goldin-Meadow, S., Nusbaum, H. C., & Small, S. L. (2009). Gestures orchestrate brain networks for language understanding. *Current Biology: CB, 19*(8), 661-667. doi:10.1016/j.cub.2009.02.051

Spring, J. H.,. (2006). *American education*. Boston, Mass.: McGraw-Hill.

Stanton, R. (2007, January 31). Friendswood 3rd-graders knit caps to save babies. *Houston Chronicle*. Retrieved from http://www.chron.com/news/houston-texas/article/Friendswood-3rd-graders-knit-caps-to-save-babies-1825946.php

The Knitting Guild Association (2013). Knitting Organization Links. Retrieved from: http://www.tkga.com/?page=KnitOrgLinks

Turney, J. (2009). *The culture of knitting*. Oxford: Berg.

Utsch, H. (2007). *Knitting and stress reduction.* (Psy.D., Antioch University New England). *ProQuest Dissertations and Theses,*

Vaquera, E. (2009). Friendship, educational engagement, and school belonging: Comparing hispanic and white adolescents.*Hispanic Journal of Behavioral Sciences, 31*(4), 492-514. doi:10.1177/0739986309346023

Wallace, D. (2011, June 23). Warner students knit for Sweet Dreamzzz. *Cand G News*. Retrieved from http://www.candgnews.com/news/warner-students-knit-sweet-dreamzzz

Wang, M. C., & Haertel, G. D, & Walberg, H.J. (1994). What helps students learn? *Educational Leadership, 51*(4), 74.

Wang, M.C. (1992). Adaptive education strategies: Building on diversity. Baltimore, MD: Brookes.

Ziff, K., Pierce, L., & Johanson, S. (2012). ArtBreak: A creative group counseling program for children. *Journal of Creativity in Mental Health, 7,* 108-121.

APPENDIX A

HUMAN SUBJECTS APPROVAL

September 11, 2013

MEMORANDUM

TO: Cassandra Dominick
        Kristin Higgins

FROM: Ro Windwalker
        IRB Coordinator

RE: New Protocol Approval

IRB Protocol #:   13-08-058

Protocol Title: Knitting as a Therapeutic Group Technique with 4th and 5th Grade Elementary School Students

Review Type: ☐ EXEMPT ☒ EXPEDITED   ☐ FULL IRB

Approved Project Period: Start Date: 09/10/2013 Expiration Date: 09/03/2014

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (http://vpred.uark.edu/210.php). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

This protocol has been approved for 42 participants. If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes.   All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

APPENDIX B

PERMISSIONS

To whom it may concern,

Washington elementary is excited and willing to have Cassandra Dominick implement a knitting group in our afterschool program beginning fall 2013. Permission slips will be completed byall participants. Please let us know if you have any questions or concerns. Your contact person will be Tara Lechtenberger, School Counselor. Her direct number is █████████

Sincerely,

███████████████████████

Ashley Garcia

APPENDIX C

INFORMED CONSENT STATEMENTS

AND PARENT LETTER

Informed Consent

Title:　　　　The Learn to Knit Project
Investigator:　Cassandra M. Dominick, M.S., LAC,
　　　　　　　　University of Arkansas
　　　　　　　　Fayetteville, AR 72701　xxx-xxx-xxxx

Description: The present study will serve as a pilot study to examine the impact of the Learn to Knit program on the motivation and achievement levels of the participants. Participants will be asked to complete the Social Skills Improvement Scale Rating System, and students will be asked to complete a feelings checklist at the beginning and end of every group session. In addition, participants will meet weekly during the semester with a Counselor Education Licensed Associate Counselor Doctoral student. During these meetings, participants will be taught basic knitting skills and will have an opportunity to interact with other peers. The meetings will take place once a week for 8 weeks on Thursdays from 3-4:30pm.

Risks and Benefits: The benefits include learning a new hobby that may enhance creative skills and build positive peer relationships. There are no anticipated risks to participating in the study.

Voluntary Participation: Participation in this study, defined as authorization for educational sessions with a counseling student and including your results in the research, is completely voluntary.

Confidentiality: Your child will be assigned a code number that will be used to match research data and instruments. All information will be recorded using the numerical code for your child, and the master key assigning each child's name to a number will be destroyed following the study. Sessions with the doctoral student counselor will be held in the strictest of confidence as well as all information gathered in the project. Sessions may be recorded to analyze the effectiveness of the group intervention. These recordings will be stored in a locked box and will be destroyed after analysis. The researcher will follow the American Counseling Association Code of Ethics and Standards of practice in relation to this research and sessions with participants.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences to you or your child.

Informed Consent: I, _____, have read the description, including the
　　　　　　　　　　　　　　Please print student's name
purpose of the study, the procedures to be used, the potential risks, the confidentiality as well as the option to withdraw from the study at any time. The investigator has explained each of these items to me, and I believe that I understand what is involved. My signature below indicates that I freely agree to my child participating in this study and that I have received a copy of this agreement from the investigator. My child's signature also indicates that he/she agrees to participate. Cassandra Dominick or her advisor will be able to answer any questions I may have. She can be contacted at dominick@uark.edu or xxx-xxx-xxxx. Her advisor, Dr. Kristin Higgins, can be contacted at kkhiggi@uark.edu or xxx-xxx-xxxx. If, at any time, I feel my questions have not been adequately answered, I may request to speak with the University of Arkansas Institutional Review board for Protections of Human Subjects (Attention: Ro Windwalker, 210 ADMN, xxx-xxx-xxxx, irb@uark.edu).

_____　　　　_____
　　Parent/Guardian consent signature　　　　　　　　　　　　Date

_____　　　　_____
　　Student assent signature　　　　　　　　　　　　　　　　Date

I do not wish to participate in this study _____
　　　　　　　　　　　　　　Signature- Parent/Guardian

Informed Consent

Title: The Learn to Knit Project
Investigator: Cassandra M. Dominick, M.S., LAC,
                  University of Arkansas
                  Fayetteville, AR 72701   xxx-xxx-xxxx

Description*:* The present study will serve as a pilot study to examine the impact of the Learn to Knit program on the motivation and achievement levels of the participants. Teacher participants will be asked to complete the Social Skills Improvement Scale Rating System (Teacher form) for each of their students before the study, at 8 weeks, and again at 16 weeks. In addition, students will meet weekly after school hours during the semester with a Counselor Education Licensed Associate Counselor Doctoral student. During these meetings, participants will be taught basic knitting skills and will have an opportunity to interact with other peers. The meetings for students will take place once a week for 8 weeks on Thursdays from 3-4:30pm.

Risks and Benefits*:* The benefits for the children include learning a new hobby that may enhance creative skills and build positive peer relationships. There are no anticipated risks to participating in the study.

Voluntary Participation: Participation in this study, defined as authorization to complete an assessment about your student's social and academic skills, is completely voluntary.

Confidentiality*:* You will be assigned a code number that will be used to match research data and instruments. All information will be recorded using the numerical code for you, and the master key assigning your name to a number will be destroyed following the study. The researcher will follow the American Counseling Association Code of Ethics and Standards of practice in relation to this research and sessions with participants.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences to you or your student.

Informed Consent*:* I, _____, have read the description, including the purpose of
                            Please print your name

the study, the procedures to be used, the potential risks, the confidentiality as well as the option to withdraw from the study at any time. The investigator has explained each of these items to me, and I believe that I understand what is involved. My signature below indicates that I freely agree to participate in this study and that I have received a copy of this agreement from the investigator. Cassandra Dominick or her advisor will be able to answer any questions I may have. She can be contacted at dominick@uark.edu or xxx-xxx-xxxx. Her advisor, Dr. Kristin Higgins, can be contacted at kkhiggi@uark.edu or xxx-xxx-xxxx. If, at any time, I feel my questions have not been adequately answered, I may request to speak with the University of Arkansas Institutional Review board for Protections of Human Subjects (Attention: Ro Windwalker, 210 ADMN, xxx-xxx-xxxx, irb@uark.edu).

_____   _____
        Teacher consent signature   Date

I do not wish to participate in this study _____
                                   Signature- Teacher

Informed Consent

Title: The Learn to Knit Project
Investigator: Cassandra M. Dominick, M.S., LAC,
                     University of Arkansas
                     Fayetteville, AR 72701   xxx-xxx-xxxx

Description*:* The present study will serve as a pilot study to examine the impact of the Learn to Knit program on the motivation and achievement levels of the participants. Parent participants will be asked to complete the Social Skills Improvement Scale Rating System (Parent form) before the study, at 8 weeks, and again at 16 weeks. In addition, your child will meet weekly after school hours during the semester with a Counselor Education Licensed Associate Counselor Doctoral student. During these meetings, your child will be taught basic knitting skills and will have an opportunity to interact with other peers. The meetings for students will take place once a week for 8 weeks on Thursdays from 3-4:30pm.

Risks and Benefits*:* The benefits for the children include learning a new hobby that may enhance creative skills and build positive peer relationships. There are no anticipated risks to participating in the study.

Voluntary Participation: Participation in this study, defined as authorization to complete an assessment about your child's social and academic skills, is completely voluntary.

Confidentiality*:* You will be assigned a code number that will be used to match research data and instruments. All information will be recorded using the numerical code for you, and the master key assigning your name to a number will be destroyed following the study. The researcher will follow the American Counseling Association Code of Ethics and Standards of practice in relation to this research and sessions with participants.

Right to Withdraw: You are free to refuse to participate in the research and to withdraw from this study at any time. Your decision to withdraw will bring no negative consequences to you or your child.

Informed Consent*:* I, _____, have read the description, including the purpose of
                              Please print your name

the study, the procedures to be used, the potential risks, the confidentiality as well as the option to withdraw from the study at any time. The investigator has explained each of these items to me, and I believe that I understand what is involved. My signature below indicates that I freely agree to participate in this study and that I have received a copy of this agreement from the investigator. Cassandra Dominick or her advisor will be able to answer any questions I may have. She can be contacted at dominick@uark.edu or xxx-xxx-xxxx. Her advisor, Dr. Kristin Higgins, can be contacted at kkhiggi@uark.edu or xxx-xxx-xxxx. If, at any time, I feel my questions have not been adequately answered, I may request to speak with the University of Arkansas Institutional Review board for Protections of Human Subjects (Attention: Ro Windwalker, 210 ADMN, xxx-xxx-xxxx, irb@uark.edu).

_____   _____
        Parent consent signature   Date

I do not wish to participate in this study _____
                                         Signature- Parent

Please have informed consent forms returned by _____. Also, please make sure your student's name is on the informed consent. Thanks.

Dear Parent/Guardian and Student at Washington Elementary School,

Your child has been selected by the school counselor and researcher as being a prime candidate for the Learn to Knit project offered by a student from the University of Arkansas Counselor Education Program. As a candidate for this project, your student would be involved in an 8 week long intervention program designed to enhance creative and social skills by learning to knit, which in turn may increase academic performance, self-esteem, and overall well-being.

In order to provide knitting instruction for the greatest number of students, there will be two groups. The first Learn to Knit group will take place for 8 weeks, followed by a second group that takes place for 8 weeks. Students will be randomly chosen to participate in the Learn to Knit group for the first round of eight weeks or the second round of eight weeks.

Once assigned to groups, all students, parents, and teachers will be asked to complete the Social Skills Improvement System (SSIS). All students, parents, and teachers will be asked at the end of eight weeks to complete another SSIS, even for students that have not yet participated in the Learn to Knit program. At the end of both rounds of the Learn to Knit program, students, teachers, and parents will be asked to complete the SSIS a final time.

The intervention process involves students meeting on a weekly basis with a counselor education doctoral level student who is also a licensed associate counselor in the state of Arkansas. The time of their weekly meeting will be scheduled after school hours from 3-4:30pm. Participating students will be provided with bus transportation home following the group meeting.

During these meeting sessions students will learn to knit with several of their peers. At the beginning and end of each session, students will complete a feelings checklist. Sessions will be focused on creativity and learning a new skill, and are not intended to be used for personal counseling. Students will learn basics of knitting and will be given the choice of several different projects to work on after mastering basic skills. All knitting materials will be provided for the student.

Attached is an informed consent form outlining more details about the project as well providing a place for you and your child to either agree or disagree to participate in the project. Please feel free to contact me or Tara Lechtenberger if you have any questions or concerns. I can be reached at xxx-xxx-xxxx or by e-mail at dominick@uark.edu. Tara can be reached at xxx-xxx-xxxx or tara.lechtenberger@fayar.net. I really appreciate your time and participation in this research project.

Thank You,
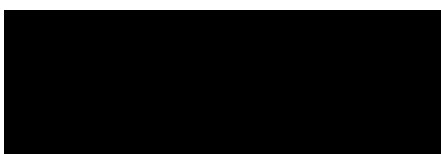
Cassandra M. Dominick, M.S., L.A.C.

APPENDIX D

I FEEL CHECKLIST

I Feel Checklist

Which of the following emotions are you feeling right now? Place a check mark in the boxes next to those feelings.

☐	happy	☐	cheerful
☐	sad	☐	discouraged
☐	bored	☐	unconcerned
☐	nervous	☐	positive
☐	excited	☐	negative
☐	calm	☐	motivated
☐	neutral	☐	relaxed
☐	proud	☐	undecided
☐	restless	☐	annoyed

* The I Feel Checklist was originally printed at a size 28 pt. font, but has been reduced in size for

printing purposes.