THE EFFECTS OF PARTICIPATION IN MOVEMENT PROGRAMS ON THE MOVEMENT COMPETENCE, SELF-ESTEEM AND RESILIENCY OF ADOLESCENT GIRLS

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Declaration

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Abstract

The purpose of this study was to examine the effects of two different types of movement programs on movement competence, self-esteem and resiliency in adolescent girls from a low-socio economic environment. A non-equivalent-control-group design was followed. A total of N=63 girls from similar socio-economic environments between the ages of 13-14 participated in the study. The subjects were divided into three groups. The pre-tests and post-tests were administered to all groups. Four motor fitness/motor ability tests were selected to gather data about movement competence. The Self-Perception Profile for Children (Harter, 1985) was used to measure self-esteem and the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) was used to measure resiliency. Only two of the groups received intervention programs. One group received 20 sessions in an expressive dance movement program called Biodanza and the other intervention group received 20 sessions in self-defence.

The Biodanza group was the only group to improve significantly on their movement competence. Subjects from the self-defence group were the only ones to improve significantly in one sub-domain of perceived competence (scholastic competence). In terms of resiliency, none of the groups experienced significant changes. The comparison of groups showed that the Biodanza group was more effective in terms of movement competence. They improved significantly in sprinting ability and agility when compared to the self-defence group. The Biodanza group also improved significantly in sprinting ability when compared to the control group. Focus group interviews were conducted with subjects in the intervention programs. Content analysis revealed that subjects in both groups felt they had developed self-confidence as an outcome of their participation. Subjects in the Biodanza group specifically identified substantial personal growth as an additional outcome. The study concluded that expressive movement programs such as Biodanza should be considered when developing programs for adolescent girls from low socio-economic environments in South Africa.

Opsomming

Die doel met hierdie studie was om die effek van twee verskillende tipes bewegingsprogramme oor bewegingsbevoegdheid, selfbeeld en aanpasbaarheid op adolessente meisies van 'n lae sosio-ekonomiese gemeenskap te bestudeer. 'n Nie-ewekansige kontrolegroep-ontwerp is gevolg. 'n Totaal van N=63 meisies van soortgelyke ekonomiese gemeenskappe tussen die ouderdom van 13 – 14 het deelgeneem aan die studie. Die deelnemers is in drie groepe verdeel. Al drie die groepe is onderwerp aan voortoetse en na-toetse. Vier motoriese fiksheid- / motoriese vaardigheidstoetse is geselekteer om data in te samel oor bewegingsbevoegdheid. Die *Self-Perception Profile for Children* (Harter, 1985) is gebruik om selfbeeld te meet en die *Connor-Davidson Resilience Scale* (Connor & Davidson, 2003) is gebruik om aanpasbaarheid te meet. Slegs twee van die groepe is onderwerp aan intervensieprogramme. Die een groep het 20 sessies ontvang van 'n beeldende dansbewegingsprogram, genaamd Biodanza en die ander intervensiegroep het 20 sessies oor selfverdediging ontvang.

Die Biodanza-groep was die enigste groep wie se bewegingsbevoegdheid beduidend verbeter het. Deelnemers verbonde aan die selfverdedingingsgroep was die enigste persone wie beduidend verbeter het in een onderafdeling van waarneembare bevoegdheid (skolastiese bevoegdheid). Nie een van die groepe het enige beduidende verandering ervaar in terme van aanpasbaarheid nie. Tydens die vergelyking van groepe was die Biodanza-groep meer effektief in terme van bewegingsvaardighede. Hulle het beduidend verbeter in hardloopvaardighede en ratsheid in vergelyking met die selfverdedigingsgroep. Die Biodanza-groep het in vergelyking met die kontrolegroep ook beduidend verbeter in hardloopvaardighede. Fokusgroeponderhoude is gevoer met deelnemers in die intervensieprogramme. Inhoudanalise het onthul dat deelnemers in beide groepe gevoel het dat hulle selfvertroue ontwikkel het vanweë hulle deelname. Deelnemers van die Biodanza-groep het spesifiek aansienlike persoonlike groei as 'n addisionele uitkoms geïdentifiseer. Die studie kom tot die gevolgtrekking dat beeldende bewegingsprogramme soos Biodanza oorweeg moet word wanneer programme ontwikkel word vir adolessente meisies van lae sosio-ekonomiese gemeenskappe in Suid-Afrika.

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Chapter One

Setting the Problem

Poverty in Southern Africa is related to a history of power relationships that disadvantaged particular groups in the society. Although these power relationships appear to have changed as a result of political changes, the process of changing the realities of daily living for those at the lower end of the socio-economic continuum may take a very long time (Smith & Noble, 1995). Low socio-economic status has been identified as one of the factors that put youth "at-risk" (Sprott & Doob, 1998).

The concept of being at-risk refers to an individual's exposure to specific factors that increase his/her likelihood of experiencing negative consequences (Finn & Rock, 1997). Mohnsen (1997) identified the following community factors as contributing to high rates of youth at-risk:

- Economic and social deprivation.

- Low neighborhood attachment and high community disorganization.

- The availability of alcohol, tobacco and other drugs.

These community factors are present in many of the urban township areas in South African that can be clearly identified as low socio-economic environments.

Many risk factors cut across all social classes and ethnic groups, and any person may be or become at –risk (Barr & Parrett, 1995). All youth face some sort of risk – some more than others because of their socio-economic status, environment, friends, family situation, behavioral problems and physical or mental health. Werner and Smith (1992) reviewed longitudinal studies that followed children born in extremely high–risk environments, such as poverty and war, as well as families with mental illness, alcoholism, drug abuse, physical and sexual abuse. They found that it was common for between 50% - 70% of these children to grow up to be not only successful according to societal standards, but also to be confident, competent and caring persons. It appears that "some things can

happen" and/or "there are actions that can be taken" to help at-risk youth to deal with their challenging situations and in the process, gain productive members of society.

Physical Activity

Participation in physical activity has been associated with various physical health benefits. The psychological and social benefits of participation have not been as fully documented, but there is a body of research that demonstrates the potential benefits. For example, regular participation in physical activity has been associated with reductions in both depressive symptoms and anxiety, and the implementation of a physically active lifestyle has been associated with an improvement in self-esteem (Schomer & Drake, 2001). Johnson (2003) identified both physical and psychological benefits of physical activity for middle school American girls, which included regulating menstrual cycle, maintaining proper bone density, maintaining ideal body composition as well as promoting a positive self-concept and decreasing risky sexual behavior,

It has been found that participation in moderate amounts of physical activity can have a positive impact on overall feelings of well-being. Bezner, Adams and Whistler (1999) explored the relationship between physical activity and perceived wellness. Their subjects were 243 American hospital employees of whom majority were Caucasian. They completed the Perceived Wellness Survey and two physical activity measures. A positive correlation was found between physical and psychological wellness and participation in physical activity. Crone-Grant and Smith (2002) examined the relationship between physical activity and mental health using qualitative methodology. The researchers conducted three individual one-hour interviews. An analysis of the interviews revealed that these participants found that physical activity provided opportunities for autonomy, a purpose in life and environmental mastery.

Kirkcaldy, Shephard and Siefen (2002) concluded that by participating regularly in exercise, subjects' realized improved physical performance and gained a more favorable body shape and structure, which in turn led to more positive social feedback and recognition from peers. They concluded that this

subsequently led to an improvement in self-image for the sample of German high-school students. Their results also indicated that adolescents who engage regularly in physical activity were characterized by lower anxiety-depression scores and displayed much less social behavioral inhibition than their less active counterparts. Ferron, Narring, Cauderay and Michaud (1999) found similar results when they studied the direction and strength of the associations between the frequency of sport and health variables among adolescents. The results showed that half of the sample does sport more than twice per week. The sample was divided into non-athletic and athletic groups and the latter had fewer somatic complaints, more confidence, a better body image, a lesser tendency to attempt suicide, a higher frequency of using a car seat belt and a lower tendency to use tobacco, wine and marijuana.

Sonstroem, Harlow, Gemma, and Osborne (1991) proposed that competence in the physical domain could generalize to feelings of positive global self-esteem through the intervening construct of perceived physical competence. They tested the structural relationships within a model to explain the manner in which self-esteem changes are associated with exercise. They found that feelings of mastery were associated with general evaluations about one's physical competence. Hein and Hagger (2007) found that physical activity interventions that target autonomous motives in physical activity contexts are likely to enhance young people's lives. It must be highlighted that although exercise can enhance self-esteem, according to Spence, McGannon and Poon (2005) the benefits of exercise on global self-esteem are overstated. The results of their study showed that exercise and lifestyle programs produced small to moderate increases in self-esteem, while skills training activities demonstrated no effect on self-esteem. This demonstrates that more research is required to compare different types of physical activity programs that maximize effects on self-esteem. The potential of a movement program that is rhythmical, for example, presents a different kind of movement experience than one that is not rhythmical. The intention of one is to synchronize body movement to an external rhythmical, such as the music used in Biodanza, while the intention of the other is to organize the body actions to achieve an external goal, such as in self-defence. Biodanza might be considered to be more expressive and self-defence to be more objective. Because the

programs are different in terms of how the body is experienced, they may also be different in terms of the effects of participation on movement competence, self-esteem and resiliency.

Adolescents

Physical development is critical in forming the body image of adolescents. As their bodies go through physical changes, adolescents' attitudes toward their body can change, which in turn impacts on their self-concept and personality development (Gouws, Kruger & Burger, 2000). Anderson, Murphy, Murtagh and Nevill (2006) implemented an eight-week exercise program of regular brisk walking and regular brisk walking with abdominal electrical stimulation. Although the subjects participating in the two walking programs were sedentary adult females they achieved significant positive changes in their anthropometric profile as well as in their self-perception, when compared to a non-exercising control group.

Any program that can lead to the enhancement of an individual's self-esteem is considered an important means for improving physical and psychological health (Schomer & Drake, 2001). Participation in physical activity programs may be able to achieve these outcomes. For adolescents in particular, the following physical and psychological benefits of participation have been proposed (Gouws *et al*., 2000):

- Controls appetite.

- Reduces body fat.

- Improves muscle tone and strength.

- Improves flexibility.

- Improves performance.

- Relieves tension and stress.

- Stimulates the mind and improves cognitive functioning.

- Boosts self-image.

- Provides opportunities for peer interaction.

Purpose of the Study

The aim of this study was to expand the body of knowledge in sport science regarding the impact of participation in different types of movement programs on selected aspects of individual development.   The specific purpose of this study was to investigate the effects of an expressive movement program and a self-defence program on the movement competence, self-esteem and resilience of adolescent girls from a low-socio economic community in South Africa.

Significance of the Study

One agency identified as capable of taking positive actions to address the problems faced by at-risk youth has been the school, described by some as being like a family, a home, a community and even a sanctuary (Children's Express, 1993). In his effort to address the challenges facing at-risk youth in Namibia, Zealand (2005) discovered that after-school physical education and recreation programs could be designed to help at-risk youth develop the positive self-esteem and resilience they need to overcome the negative influences in their environment. If the programs implemented in this study can have a positive impact on any of the dimensions of self-esteem or resiliency, then progress will have been made on finding ways to help adolescent girls in from low socio-economic environments deal with the challenges presented by the at-risk circumstances that surround them.

The identification of self-esteem as a program objective is not surprising because low self-esteem and low self-confidence are common characteristics of at-risk youth (Jessor, 1989).   Resiliency also had been identified as a critical quality for "survival" in at-risk environments. Lifton (1994) identified resilience as the capacity to transform and change. Werner and Smith (1992) referred to resilience as a "self-righting mechanism." They include the abilities to form relationships (social competence), to solve problems and to maintain a sense of

identify as protective factors that contribute to resiliency.   The capacity to withstand stress has also been associated with resilience (Gamezy, 1991). If the school experience could help youth develop the protective factors that contribute to resiliency, then they would truly be making a contribution to reducing at-risk behaviors.

There has been a growing interest from the medical profession regarding the concept of resilience and the question as to whether psychotropic medications or psychosocial treatments might have resilience-enhancing effects (Davidson, Payne, Connor, Foa, Rothbaum, Hertzog & Weisler, 2005). Resiliency can be described as an inner strength, responsiveness and flexibility. It is believed that some individuals have more resilience than others which enables them to recover from stress and trauma completely or at least helps them recover to a healthy level of functioning after a traumatic event (Henley & Colliard, 2005).

The role of the development of movement competence in this approach is based on the results of sport psychology research over the past 30 years that has demonstrated that as individuals become more competent in their motor performance their perceptions of themselves may undergo positive changes (Weiss & Ferrer-Caja, 2002).   Movement competence is a term used to describe becoming more effective when moving in the environment. Improvements in movement competence are observed by improvements in achieving the goals or purpose for moving, rather than a stylized biomechanical technique (Válková, 1998). This focus on becoming effective in the environment is believed to be the link between movement competence and perceived competence.

In the current study the researcher used self-defence and Biodanza (expressive dance) as intervention programs to examine if any changes will occur in movement competence, self-esteem and resiliency of adolescent girls from historical disadvantaged communities. Rhythmical and non-competitive physical activity programs, such as Biodanza, have been associated with the promotion of general psychological well-being. However the effects of participation in Biodanza specifically on movement competence have not been explored. The effects of participation in Biodanza have never been compared to participation in an activity such as self-defence, which is non-competitive but also non-rhythmical. This

difference in movement forms in terms of rhythmical dance-like content may be a source of different effects on variables such as movement competence, self-esteem and resiliency among adolescent girls from historically disadvantaged communities in South Africa. This study will attempt to fill this knowledge gap.

Physical activity programs that promote psychological well-being should be rhythmical and non-competitive and it has been proven that participation in Biodanza does improve participants' psychological well-being. Steuck (n.d.) found that after 10 sessions of Biodanza significant psychological health and personality variables was observed. The group was tested again three months after the initial post-test and Steuck concluded that a 10-session Biodanza program had positive, holistic effects on the experience and behavior of the participants.

Research Questions

The investigator did not want to predict (hypothesize) an outcome of the study and instead used research questions to guide the study. The main focus of the study was to examine the effects of two different movement programs on movement competence, self-esteem and resiliency in adolescent females from a low-socio economic community. There were six sub-questions to guide the study.

1. Will participation in the movement programs lead to changes in movement competence?

2. Will participation in the movement programs result in any changes in self-esteem in adolescent females from a low socio-economic environment?

3. Will changes in movement competence result in any changes in resiliency in adolescent females from a low socio-economic environment?

4. Will there be any relationship found between either movement competence and self-esteem or movement competence and resiliency among adolescent girls from a low socio-economic environment?

5. Will participation in one movement have more if an effect on movement competence, self-esteem and resiliency of adolescent girls from a low socio-economic community, than participation in the other program?

6. What were the perceptions of the participants of the movement programs?

Methodology

The researcher followed the non-equivalent-control-group design to gather the quantitative data and focus group interviews were used to collect qualitative data. The three groups in this study came from two different schools. All the students were from similar socio-economic environments. The pre-tests and post-tests were administered to all groups, but only two groups received intervention programs.

Limitations

The following limitations must be considered when drawing conclusions from the results of this study:

- The measurement instruments for self-esteem and for resiliency were developed in first-world contexts. There will be questions about the validity of using these instruments in a less well developed African context. The focus group was specifically employed as a method for data collection to try to gain insight into the girls' experiences in a different way.

- It should also be noted that Harter's Self-Perception Profile for Children (1985) is a multidimensional questionnaire and was designed to be used with multivariate statistics that can account for shared variance between subscales.

- Resiliency is a relatively new topic in sport and exercise psychology literature. Due to the lack of resiliency measures, this study employed a measure that was primarily developed to tap into resiliency of samples from clinical settings.

- The limited sample size influenced the amount of change required to achieve statistical significance in any changes reported. However, it was

necessary to use intact groups for this school-based project, so sample size could not be expanded.

- The time schedule for the movement intervention programs were assigned by the school principals and did not always accommodate the needs of the girls participating in the programs. This may have affected the attendance and motivation of some of the girls.

- It is well accepted that the teachers or coaches will have an influence on how the participants experience an intervention program. The two teachers who delivered the intervention programs had to be content specialists (one in Biodanza and the other in self-defence) in order to insure that the program was truly a movement competence program, not just a physical activity program. This gave the investigator no choice about who to select. Fortunately, both coaches had extensive experience with adolescent girls from low socio-economic environments. It must be acknowledged that both teachers were white (not an unusual situation for the participants in this study), and one teacher was female (Biodanza) and the other male (self-defence). While this is a variable that could not be controlled in this study, it is acknowledged as a limitation.

Terminology

Several different terms have been used to describe different aspects of an individual's overall perceptions of the self, including self-concept, self-perception, self-esteem, self-worth, perceived competence, perceived ability, self-efficacy, and self-confidence (Horn, 2004). This study accepted the following definitions:

Self-concept

Self-concept is the overall view an individual has of himself/herself. It includes appearance, ability, attitudes and beliefs about the self (Plummer, 2005).

Self-perception

Self-perception can be defined as individuals' beliefs, perceptions, attitudes, thoughts and feelings about themselves in general or about domain-specific abilities, skills, competencies, and characteristics (Horn, 2004).

Self-esteem

Rosenberg (1979) defined self-esteem as an overall evaluation of one's worth or value that can be either positive or negative. Self-esteem and self-concept are considered to be synonymous by some researchers, who do not think that a clear distinction between these two constructs has been demonstrated (Byrne, 1996).

According to Plummer (2005), healthy self-esteem or positive self-regard involves positive perceptions of competence and social approval. Schomer and Drake (2001) described positive self-esteem as having self-respect and feelings of personal self-worth. Fox (1997) described self-esteem as an overall judgement made by the directing self of how well the self is doing. Feltz (2007) agreed that self-esteem relates to one's personal judgment of worthiness.

Harter (1990c) equated self-esteem with global self-worth. Although global self-worth referred to the overall value that one places on the self as a person, her model also included domain-specific evaluations of one's competence as critical dimensions of situation specific self-worth/self-esteem. From Harter's perspective, self-esteem is multidimensional. This is the approach that will be used in this research.

Movement Competence

Movement competence is the term used to describe becoming more skilful or more effective when moving in the environment. Improvements in movement competence are observed by improvements in goal achievement (Válková, 1998).

Perceived Competence

The terms perceived competence and perceived ability are defined as individual's perceptions of their competencies or abilities in specific domains. Perceptions of competence or perceptions of ability can fluctuate over time and across achievement domains (Horn, 2004).

Resiliency

Resilience embodies the personal qualities that enable one to thrive in the face of adversity (Connor & Davidson, 2003). The terms resilience and resiliency are considered synonymous in the current study as they are used interchangeably in literature (O'Neal, 1999).

Low Socio-Economic Environment

The participants in this study are described as "coming from a low socio-economic environment." Within the context of this study, the term is considered accurate because the schools involved have been declared "tuition free" schools, which means that the families of students are considered by the government to be too poor to afford to pay. Both schools also offer a feeding scheme for the students, another sign from the government that the families who send students to the schools are not able to provide them with sufficient food on a regular basis.

Summary

Many adolescent girls in South Africa grow up in what can be described as at-risk communities. The participants in this study come from low socio-economic environments and they face various challenges in their daily lives. The psychological variables of self-esteem and resiliency have been identified as two critical psychological variables that may reduce the negative impact of at-risk circumstances. If movement competence programs can be identified that help them develop some of the psychological resources they need to take control of their own development, then programs will have the potential to help other adolescents in similar circumstances. Resiliency is the ability to recover to a healthy level of functioning after a stressful or traumatic event. Therefore, this

study attempts to understand how resiliency can be improved through participation in movement programs.

Chapter Two

Review of Literature

Sport scientists have studied the range of outcomes associated with participation in physical activity, sport and exercise programs. In some cases, research has specifically focused on the outcomes derived from skill improvement. Among the outcomes of particular interest for sport psychologists have been those associated with self-esteem. More recent concerns about the need to help individuals learn how to cope with stressors in an ever-changing environment have led to an emerging interest in resilience as a possible outcome of participation. This chapter will begin with a brief section explaining the concept of movement competence. Two sections are focused on self-esteem, including a theoretical framework for understanding the relationship between self-esteem and perceived competence and a summary of pedagogical implications from research on the development of self-esteem. The final section presents information about resilience.

Movement Competence

Keogh and Sugden (1985) urged researchers interested in understanding how movement skill development can contribute to holistic development, to focus on the study of movement competence rather than on the achievement of pre-established standards of motor proficiency. They presented their argument in the following words:

> Achievement needs to be measured and studied in a broader
> perspective of effective participation or competence. This is a functional
> rather than a skill perspective that tells whether a person is effective in
> a situation…Competence implies that an individual can adapt and
> adjust to get the job done (Keogh & Sugden, 1985:200).

Válková (1998) supported this focus and specified that the term competence describes a level of achievement in fitness, skills and/or motor abilities that is sufficient to successfully meet the movement goals of the individual. Connell,

Sheridan and Gardner (2003) refined the definition of movement competence as follows: "Competence signifies level of proficiency in executing a task that is higher than that of a novice, but not as high as the level of an expert. It is considered to be situation-specific…." (p. 141)

Movement Competence and Self-confidence

Keogh, Griffin and Spector (1981) proposed that there is a strong relationship between movement competence and self-confidence, and that confidence in approaching and performing a movement task will have an impact on performance success. They postulated that a confident person will seek participation and a less confident person will try and avoid participation, finding minimal satisfaction if forced to participate. They stated that parents, teachers and peers interact differently with a child whom they perceived to be more confident than with a child whom they perceived to be less confident.

Griffin and Keogh (1982) proposed a model to describe participation motivation in physical activity settings. They used the term movement confidence to describe feelings of adequacy in a movement situation. They claimed that movement confidence was a consequence of perceiving the self as competent in a movement situation and having positive sensory perceptions during performance. From their perspective, increasing or maintaining positive movement confidence would encourage participation choice, effort and persistence. Feltz (2007) noted that the movement confidence model has not generated research, and that many of its predictions are addressed by Bandura's (1977) self-efficacy theory.

Perceptions of Movement Competence

Although it may be possible to establish that an individual is actually capable or competent in performing a task, Sternberg (1990) cautioned that from a psychological perspective, perceptions of competence are more powerful than actual competence, and that these perceptions cannot be easily measured because they are not objective phenomena. Phillips and Zimmerman (1990) stated that the recognition of your own abilities and the belief that you are competent to achieve valued goals are contributing factors to healthy personal

development. They contended that personal perceptions of competence mediate a wide range of adaptive behaviors throughout life. Feltz (1997) added that perceptions of competence have also been described as self-confidence, a variable that has been proposed to be a powerful mediator of achievement motivation.

The term perceived competence is sometimes used interchangeably with perceived ability (Horn, 2004).   Perceived competence is not regarded as a global construct, but rather as a task specific construct that refers to an individual's sense of his/her ability to be successful in a specific achievement domain (Harter, 1982). This means that perceptions of personal competence – including personal movement competence - are not necessarily stable and that they may fluctuate over time (Horn, 2004).

Shaw, Gorely and Corban (2005) identified Harter's work as an important theoretical contribution to understanding how perceptions of competence can impact on achievement motivation. Although more detail about Harter's approach is presented in the section on self-esteem, the role of the development of movement competence in her approach deserves attention here. From Harter's (1982) perspective, individuals have a natural desire to experience feelings of competence and these feelings of competence may be attained through mastery experiences in various achievement domains. Individuals are motivated to engage in mastery attempts in order to feel effective in their environment. Success in these attempts leads to positive responses and positive perceptions of competence, which is proposed to increase levels of motivation to continue participation. Failure leads to negative responses, negative perceptions of competence and decreased levels of motivation to participate. Helping individuals to become more competent should promote positive perceptions of competence that may lead to increased motivation to participate.

McCarthy and Jones (2005) examined the sources of enjoyment among British children in middle to late childhood. The findings from the analysis of focus group interviews showed that perceptions of competence, social recognition of competence, positive social interactions, effort and mastery and movement sensations were primary determinants of sport enjoyment for this group of

children. Waldron (2007) used Harter' Model of Competence Motivation to investigate if participation in the Girls on Track Program (GOT) will influence perceived competence and self-worth of sixth=-grade girls. The program lasted 8-12 weeks and the results revealed that all assessments of self-perception increased but the increases were not statistically significant. The qualitative results however showed that the girls acquired interpersonal skills and experience positive feelings about themselves. Boyd and Hrycaiko (1997) found that low self-esteem pre-adolescent and adolescent females benefited from the 9-12 week intervention program but the statistically significant results were limited to the younger age group.

Allen and Howe (1998) examined the relationship between athlete ability and coach feedback with perceived competence and satisfaction among female adolescent field hockey players. Their results reveal that both ability and coach feedback were significantly associated with perceived competence and satisfaction. Wong and Bridges (1995) tested a model of motivational orientation within the framework of Harter's competence motivation theory and Weiss and Chaumeton's conceptual model. There were 108 soccer players aged between 9 and 13 years who completed the Self-Perception Profile for Children, Sport Competition Anxiety Test, Multidimensional Measure of Children's Perceptions of Control and Intrinsic/Extrinsic Motivational Scale for Sports. The researchers also assessed the coaching behaviors of 12 coaches during two matches. They found that both coaching behaviors and children's trait anxiety influenced perceived control which influenced perceived competence and motivational orientation.

Henderson (1994) completed research that revealed that children who have movement difficulties experience a lack of confidence, have poor motivation, low self-esteem, depression and social isolation. Weiss and Williams (2004) supported the position that a child's perceptions about his/her ability in a domain such as sport can be powerful determinants of emotional responses and subsequent motivational states.

Of course, perceptions of movement competence are not always accurate. Raudsepp and Liblik (2002) found that children (ages 10 – 13) did not perceive their own motor competence correctly. They noted that boys generally reported

higher perceived competence levels than girls. Wong (n.d.) presented the results of research in which children were often inaccurate in their perceptions of their physical competence when compared to their coaches' ratings of their competence. Interestingly, however, they were often able to accurately assess the competence of their peers (again, when compared to coaches' ratings).

Self-esteem and Perceived Competence

In order to explore how movement competence and perceived movement competence may have an impact on the self-esteem, a theoretical perspective for understanding the motivational processes that underlie participation in physical activities must be adopted. This perspective will help define the variables that influence the outcomes of participation in movement programs.

Duda (2007) identified perceived competence as a central focus in the study of motivation in sport and physical activity settings and found the variable frequently equated with perceived ability, self-efficacy and self-confidence. Although her research adopted a goal perspective approach, she acknowledged that cognitive approaches have also been very productive in expanding our understanding of the factors that motivate behavior in achievement situations as well as the outcomes of participation. When reviewing the cognitive approaches for studying achievement motivation in sport, Feltz (2007) suggested that Bandura's (1977) Theory of Self-efficacy and Harter's (1978) Competence Motivation Theory remain the most viable theoretical frameworks for examining the development of self-confidence and self-efficacy in sport from a cognitive perspective.

Bandura's (1977) Theory of Self-efficacy

Bandura's (1977) theory proposed self-efficacy to be the critical cognitive mechanism that mediates both motivation and behavior.   It is regarded as a theory within social cognitive theory because it explains human behavior in terms of continuous reciprocal interactions among cognitive, behavioral and environmental influences (Feltz, 2007).

Shaw, Gorely and Corban (2005) regarded Bandura's Theory of Self-efficacy as very productive for understanding feelings of competence and confidence in sport. They described self-efficacy as a state of confidence, involving an individual's judgments of his/her capabilities to organize and execute the actions required to perform successfully. Bandura's (1977) theory identified four main sources of self-efficacy information:

1. Performance accomplishments.

    This refers to past experiences of success in performance situations, such as experiencing competence in movement. Either success or failure in performance situations is considered the most dependable sources for making self-efficacy judgments.

2. Vicarious (modeling) experiences.

    Observing others or imagining one's self in a movement situation can provide some impression about whether or not the task is within one's capabilities.

3. Verbal Persuasion.

    Self-efficacy can be affected by what others say. Coaches and parents certainly can impact on how a person feels about his/her own capabilities in a situation.

4. Physiological and Emotional state.

    Physiological states such as fear, excitement, flow, etc., may trigger feelings of confidence and affect an individual's judgment about his/her own capabilities.

The information sources of performance accomplishments and physiological state are clearly available when participation in exercise, sport and dance activities. If an individual experiences himself/herself as competent in accomplishing the goals in a movement situation and if positive physiological states are associated with

movement performance, then it could be predicted that positive feelings of self-efficacy would result (Feltz, 2007).

Bandura is regarded as one of the most productive for the study of health-related exercise behavior (McAuley & Blissmer, 2002). Although it has been used to guide research in sport (Feltz, 1992), for the purpose of this study, the theoretical approach developed by Harter (1978) was adopted.

Harter's (1978) Competence Motivation Theory

The psychological construct of competence was initially proposed by White (1959). In his presentation, feelings of effectiveness or competence in meeting challenges in the environment are motivational. People experience positive feelings of self-efficacy when they perceive themselves to be competent. This is why they seek to be involved in achievement settings in which challenges are present.

Competence Motivation Theory was the theoretical approach adopted in this study. Weiss and Ferrer-Caja (2002) identified Competence Motivation Theory and the complementary measurements instruments developed by Harter as particularly appropriate when studying the relationship between self-esteem and participation in sport and physical activity. They described this approach as a multi-dimensional and developmental perspective on self-esteem. They commented that research using Harter's approach has found that "Perceptions of competence are consistently related to motivation orientation, perceived control, self-esteem and attraction to physical activity" (Weiss & Ferrer-Caja, 2002:123).

From this theoretical perspective, Weiss and Williams (2004) described competence motivation as a multidimensional construct that is influenced by cognitive, affective, social and behavioral factors. According to their interpretation, individuals are intrinsically motivated to develop competence in a particular domain. If they experience success and/or reinforcement, they will attempt to gain additional mastery in that domain. For example, a child who is high in competence motivation in the physical domain will be attracted to physically challenging tasks. If successful in demonstrating mastery, he/she will experience a positive emotional response and positive perceptions of physical competence. If significant others

approve of their achievement, their perceptions of competence and control are further reinforced. Ultimately, these enhanced self-perceptions and affective responses serve to support the child's continued participation in physical activity. Sonstroem (1997) provided a straightforward description of competence motivation, stating that individuals strive to assess themselves positively and therefore they tend to rely on any perceived success, skill or positive response as a basis for either establishing, enhancing or maintaining self-esteem.

Global Self-worth and Self-esteem

Harter (1978) originally focused on children in her expansion and refinement of White's theoretical position. She defined perceived competence as domain-referenced self-evaluations. For children, she identified the cognitive, social and physical domains as independent areas for self-evaluation. She also identified a general perception of global self-worth in which she equated with self-esteem in her later publications (Weiss & Ferrer-Caja, 2002). This model (see Figure 1) was adapted by Weiss and Ferrer-Caja (2002) to include the impact of perceived social regard on perceived competence.

- The model places self-worth/self-esteem as a product of perceived competence/adequacy and perceived social regard (support from significant others).

- Self-worth/self-esteem is seen as a mediator of both affect (emotional response) and motivation.

- Affect is also recognized in its own right as a mediator of motivation (Weiss & Williams, 2004).

Perceived Competence

Affect

Self-worth/
Self-esteem

Perceived social regard
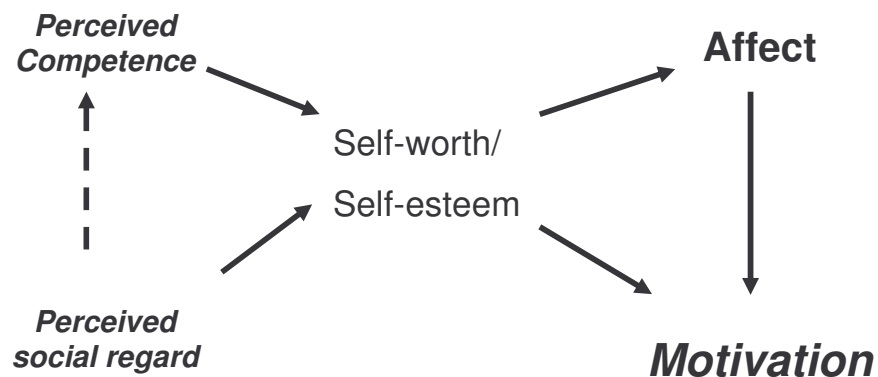
Motivation

Figure 1

A modification of Harter's multidimensional model of global self-worth customized for the physical domain by Weiss and Ferrer-Caja (2002:125)

In their comprehensive review of motivational orientations and sport behavior, Weiss and Ferrer-Caja (2002) identified the following four consistent findings about the impact of global self-worth/self-esteem emerging from Harter's series of research efforts:

1. Self-worth/self-esteem is strongly affected by perceptions of competence (in areas valued by the individual) and the opinions of significant others. It appears that the impact of these two sources is relatively equal.

2. Perceptions about physical appearance and social acceptance/adequacy are strong predictors of self-worth/self-esteem.

3. Social support from one's peer group is the strongest source of social support, with support from family members almost as strong.

4. Self-worth/self-esteem is strongly associated with emotional responses (affect) from middle childhood.

Domain-specific Perceived Competence

Harter's (1978) model can be presented as a cycle (see Figure 2). Effectance motivation is postulated: People will tend to engage in certain behaviors if they believe they are capable of executing those behaviors successfully. The model predicts that participants will gain intrinsic pleasure from experiencing themselves as competent at meeting the challenges found when engaged in mastery attempts. They will also perceive themselves to be competent and in control of their circumstances, which also contributes to feelings of intrinsic pleasure. If there is social approval for their efforts, this will contribute substantially to their perceptions of themselves as competent and in control, as well as encourage them to internalize a self-reward system.
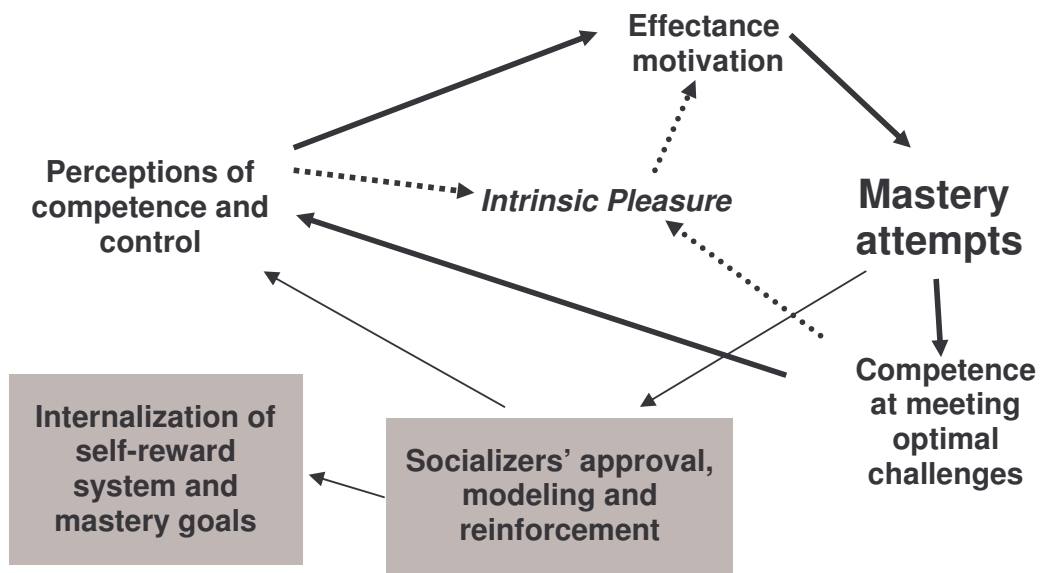
Figure 2

Harter's (1978) model of competence motivation

Harter's (1990c) model of competence motivation described behavior in achievement settings. Her model was based on the assumption that self-esteem is multi-dimensional which means that perceptions of competence as well as the individual's overall sense of self-worth are domain-referenced. She emphasized that global self-worth is not assessed by combining domain-specific judgements but by asking an independent set of questions that tap the construct of self-worth directly.   Ormrod (1999) supported the conception of self-efficacy as domain-specific. He defined self-efficacy as self-confidence and found that it affected learning in the following ways:

- Individuals typically choose activities in which they believe they will be successful.

- Individuals will tend to put more effort in activities in which they are challenged, but believe they can be successful.

The recognition of domains is central to Harter's (1978) model.   She stated that children's self-evaluations vary depending on the particular domain. In Horn's (2004) review of self-perception in children and adolescents, she provided a complete summary of the sub-domains by age group that have been identified in the series of Harter's self-perception profiles. The domains identified for early childhood, middle to late childhood, and adolescence are presented in Table 1.

According to Harter (1990b) the highest levels of self-esteem are found in individuals who perform competently in domains that are important to them. Harter (1999) proposed that the profiles of competence evaluations and the importance ratings (domains important to adolescent) across age-appropriate domains could be useful when planning intervention strategies to strengthen or maintain adolescents' self-esteem.

Table 1

A selection from Horn's (2004:115) listing of sub-domains for self-perception as proposed in Harter's assessment instruments

Early Childhood Sub-domains	Middle to late Childhood Sub-domains	Adolescence Sub-domains
Cognitive competence	Scholastic competence	Scholastic competence
		Job competence
Physical competence	Athletic competence	Athletic competence
Physical appearance	Physical appearance	Physical appearance
Peer acceptance	Peer acceptance	Peer acceptance
		Close friendships
		Romantic relationships
Behavioral conduct	Behavioral conduct	Conduct/Morality
	Global self-worth	Global self-worth

Horn (2004) noted that the study of self-perception is still in its early stages and that considerably more sophisticated research must be completed.   For example, Weiss and Amorose (2005) investigated the interrelationships among age, actual competence, and level, accuracy and sources of perceived competence. Children each completed a self-report and teachers rated their actual performance at a sports camp. The results revealed that age, actual ability, and level, accuracy and sources of perceived competence should be considered simultaneously in research on self-perception and motivational processes among youth.

Age-related Considerations

Harter's development of age-related instrumentation is an indication that there are significant developmental considerations affecting self-perception, perceived competence, self-esteem, etc. For example, some domains have been found to be critical for self-perception between the ages of 8-15 years. For children in this age range, the physical appearance was found to be the most powerful predictor of self-worth (Harter, 1987; 1990a; 1993; 2002) followed by

peer acceptance. This suggests that judgements concerning the physical and social self strongly affect global self-worth for children and youth in this age span (Harter, 1987). Failure to achieve competence in domains of importance and failure to receive social support can lead to low self-esteem in children and adolescents, which if sustained could even contribute to depressive mood states (Harter, 1992).

Harter (1990a) established that competence in domains deemed important to an older children or adolescent, as well as approval from significant others, are highly predictive of their self-esteem. Individuals with low self-esteem often feel incompetent or inadequate in domains where success is valued. This discrepancy between a domain of high importance and low perceived competence contributes to low domain-specific self-esteem.

Global self-esteem was found to have a major affect on adolescents' moods and general affective states (Harter, 1990a). An adolescent who generally likes himself/herself as a person tends to be cheerful, while an adolescent with low self-esteem will likely experience depressive tendencies. Because affect also critically impacts on the adolescent's energy level, those who report feeling happy or cheerful also report greater energy levels than those who seem to be depressed. This chain of effects demonstrates that perceptions of competence can affect self-esteem and emotional responses (affect), which in turn has an impact on motivation to sustain participation.

Gender Considerations

Research by Moreno and Cervelló (2005) found a relationship between gender, physical activity involvement and self-perception. Males participating in sport had higher scores of physical self-perceptions than either females or males who did not participate in sport. Females involved in sport achieved higher scores in sport competence, physical condition and physical strength than females doing no sport.

Women have been found to record lower Physical Self-Perception Profile scores than men (Lindwall & Hassmén, 2004). Çağler and Aşçi (2006) concluded that males had more positive perceptions about their physical condition, sport

competence and strength than females. They reported that perceived physical condition and perceived sport competence were the most important discriminators of physical activity levels for both male and female participants.

Gender differences in physical self-perceptions were found in a study by Polman (2004). Males scored higher on the attractive body, sports competence and physical self-worth subscales of the Physical Self-Perception Profile than females did. Participation in regular exercise was positively associated with differences in physical self-perceptions. In addition, a positive relationship was found between physical self-perceptions and body composition among females. Whaley (2003) documented that women's perceptions of their bodies could improve, and positive social influence could facilitate the improvements and so contribute to women's sustained participation in physical activity.

Rose, Larkin and Berger (1998) examined the motivational orientations of children who differed in motor ability. The results of the study showed that the poorly coordinated children were less motivated by challenges than well-coordinated children. In fact, very few of the children with poor coordination demonstrated a positive attitude toward sport. They also found that the intrinsic motivation of girls to meet challenges was lower than it was for boys. Although there may be gender differences in motivation, Ewing (1997) stated that opportunities develop competence in sport activities must be provided to both girls and boys because the outcomes of high levels of perceived competence (*i.e.*, enhanced self-esteem and acceptance by friends) are important for both sexes.

According to Gill (1993), women who participate in exercise and sport programs report enhanced self-esteem and a sense of physical competence that often transfers to other aspects of their lives. Harter (1993) found that for women, perceptions of physical attractiveness decline progressively, but there is no similar drop for males over time. Females evaluate their appearance more negatively than men. Females who reported that how they look (physical appearance) is critical to their self-esteem, tended to have more negative self-esteem and were more likely to become depressed (Harter, 2001). Hayes, Crocker and Kowalski (1999) found that body appearance was an important determinant of physical and global self-

esteem for both men and women. Park (2003) found similar results when examining factors associated with adolescent self-concept.

Parental Influence

Bois, Sarrazin, Brustad, Trouilloud and Cury (2005) investigated the extent to which parents' physical activity behaviors and beliefs about their child's physical competence could predict their child's perceptions of competence and the amount of time their child spent in physical activity. To measure the perceived competence, the researchers used a translated version of Harter's Perceived Scale for Children (1982). They found that mothers' perceptions of their children's physical competence were related to both children's perceived competence and the time spent in physical activity. These findings establish a link between children's perceptions of their physical competence and their involvement in physical activity.

In another study involving parental involvement, Cassidy and Conroy (2006) examined the influence of maternal involvement and autonomy support in the academic and athletic domains on children's domain-specific perceived competence and self-esteem. Maternal involvement was described as the mothers' participation in the child's activities. Autonomy support was described as the extent to which the mothers encouraged their children to initiate participation and make their own choices. The results indicated that maternal involvement had a greater influence in the academic domain than the athletic domain. This suggests that other influences (paternal, coach and peer behavior) may also be relevant to children's perceived competence and self-esteem in the athletic domain.

Gouws *et al.* (2000) found that the following three factors contribute to the development of positive self-concept and high self-esteem in adolescents:

1. Parental warmth, concern and interest.

2. Democratic, authoritative disciplinary style.

3. The quality of the parent-adolescent relationship.

It has also been documented that parents' behavior and feedback can affect how a child perceives his/her abilities (Hedstrom & Gould, 2004). For example, what the parent values in terms of winning and/or improving skills affects how a child evaluates success in sport. Hedstrom and Gould (2004) emphasized that parents powerful in terms of influencing children's motivational goal orientations and subsequent performance.

Cultural Considerations

The inclusion of culture in the study of self-esteem may provide insight into the cultural dimensions of self-perception. Seong, Kim, Yu and Chang (2000) attempted to identify a range of components that contribute to the formation of physical self-perception among students in Korea. They identified seven components: physical fitness, physique, physical appearance, sports competence, health, physical activity and general fitness and conditioning. These components are compatible with the domains of self-perception identified by Fox (1997; 2002). The results of the Seong *et al.* (2000) study revealed the following:

- The general students valued physical appearance more than the student athletes.

- The student athletes placed more emphasis on physical fitness and sports competence than the general students.

- Male students indicated that physical fitness, physical appearance and sports competence were most important, and female students identified physical fitness and physique as most important.

Guinn, Vincent, Semper and Jorgensen (2000) acknowledged the importance of cultural considerations when studying goal perspectives and self-esteem. They found that female American Mexican adolescent athletes regard exerting effort, demonstrating improvement and task mastery as important, an interpretation that seemed to run counter to that of female non-athletes from this same group.

Malete (2004) used a modified version of Harter's Self-Perception Profile for Adolescents (SPPA) to examine if the factor structure would fit a sample of youths from Botswana. He wanted to determine if their perceived competence would predict their patterns of involvement in sport and physical activity. The results of his study showed that only self-worth accounted for significant differences on patterns of involvement in sport, however, it was the non-participants and recreational sport participants who had higher perceptions of self-worth and not the competitive sport participants. He concluded that this lack of fit between the results of the SPPA and previous research could be explained in terms of method effects and poor cultural relevance of the various items on the scale.

Other researchers have questioned the validity of taking measurement instruments based on Western psychological models and applying them in non-Western situations (McInerny, Lillemyr & Sobstad, 2004). There is consensus that care must be taken when using instrumentation developed from one cultural perspective for data gathering in another cultural setting. Definitions of self, for example, appear to be culturally bound or at least culturally shaped.

Pedagogical Implications from Research on Self-esteem

There is evidence that participation in physical activity can provide positive benefits to physical self-esteem (Whitehead & Corbin, 1997). Horn (2004) observed that physical activity intervention programs can be designed to facilitate the development of positive self-perceptions in children and adolescents. She cited research that established a link between individuals' perceptions of their skills, abilities and competencies and their health. In the broadest terms, then, self-esteem can be regarded as a mental health issue. Gouws *et al.* (2000) specified that mental health involves thinking and feeling positive about oneself and one's environment. They proposed the following list of objectives to guide the development of programs aimed at the promotion of mental health during adolescence:

- Promote good mental health practices in general.

- Promote positive thinking.

- Promote positive goal setting.

- Identify learners with possible emotional disturbances so that help can be provided.

Harter (1993) stated that special attention should be given to low self-esteem individuals because they are at risk for depressive reactions and suicidal thoughts, both of which constitute a major mental health threat to youth. However, Frank and Gustafson (2003) cautioned that it cannot be assumed that there is a causal relationship between low self-esteem and psychological dysfunction. They noted that there may be individuals with high self-esteem who are predisposed to psychological disorders, however, their high self-esteem leaves them better equipped to cope with those disorders, which in turn reduces the negative consequences that may result.

According to Frank and Gustafson (2002), participation in sport and exercise may influence self-perceptions/self-esteem. They identified the positive psychological changes that accompany enhanced physical fitness and skill as important benefits. They stated that self-esteem and self-efficacy can contribute to both the prevention of psychological and physical illnesses and to the maintenance of health. Gill (1993) reported that females tend to lack confidence in their sport and exercise capabilities, which means that sport and exercise have a tremendous potential to enhance a women's sense of competence and control. Park (2003) added that a strong self-concept has a positive long-term effect on girls' self-perceived health.

Bunker (1991) contended that children could acquire self-confidence and self-esteem as a result of successful experiences, especially in the motor domain. She made the following statement about the role of play and motor skill development in building children's self-confidence and self-esteem:

Play is perhaps the most important aspect of a child's life. In the early years, children must use movement to learn about their world. They move to learn, and they also learn to move. They need experiences in

putting things together, taking them apart, throwing things, catching things, and just moving themselves. These challenges help develop their self-esteem and their personal identity. (p. 467)

With reference to the current study, Ewing (1997) reported that a contributing factor to the development of high self-esteem in children is the emotional responses of pride and joy that they experience as they improve their physical skills.

Instructional Considerations

Bunker (1991) stated that it is important to create learning opportunities that match the task difficulty with the learner's development capabilities if one wants to maximize the development of self-esteem. Children should be encouraged to work beyond their current skill so that optimal growth is produced. To do this, teachers should sequence tasks in a developmental order before presenting them to children as challenges.

Berger and McInman (1993) presented practical guidelines for instructors who use physical activity to promote psychological well-being. To increase the psychological benefits of exercise, the activity must be pleasing and enjoyable to the participant. They recommended that the activity should be rhythmical and there should be an absence of competition. The participant should exert moderate intensity and the session should be between 20 and 30 minutes and form part of a weekly schedule. They also concluded that exercise instructors and program organisers should also steer clear of moralizing and must avoid reinforcing social stereotypes.

An individual's self-esteem is developed through evaluating their abilities and by evaluating the responses of others to their behavior. Children often observe parents' and coaches' responses to their performances looking for cues that indicate approval or disapproval of their behavior. If no feedback or criticism is given it is often interpreted as a negative response to the behavior (Ewing, 1997). Naughton (2001) believed that recognizing when a young athlete achieves his/her personal goals is one way the coach can increase the athlete's perceived physical competence despite the outcome of the competition.

Fox (2002) stated that the physical self has emerged as a critical component of the overall self and it is related to a range of important health and achievement behaviors and global self-esteem. One explanation why the physical domain is crucial is because the self is presented primarily through the body and is intimately involved with the physical environment (Fox, 2002).

Whitehead and Corbin (1997) provided the following recommendations about how to promote self-esteem and motivate healthy active lifestyles for children and youth, through participation in an exercise program:

- Build physical competence perceptions by focusing on individual improvement.

- Do not overemphasize peer comparison and competition.

- Promote perceptions of autonomy and choice.

- Offer support irrespective of the standard of performance.

- Provide appropriate encouragement and technical feedback.

- Do not become reliant on extrinsic rewards or pressures.

- Promote intrinsic fun and excitement.

- Use play activities to improve the fitness levels of the participants.

- Promote a sense of purpose by teaching the value of physical activity to health and wellness.

- Mastery will be facilitated by providing the correct information and applying good standards of practice.

Weiss and Williams (2004) suggested five strategies for enhancing perceptions of competence, enjoyment, task orientation and social support that should encourage intrinsic motivational orientation and positive behaviors such as choice, effort and persistence:

1. Provide optimal challenges.

2. Ensure that sport and physical activity experience are fun.

3. Create a mastery motivational climate.

4. Maximize social support.

5. Assist children to help themselves.

Hein and Hagger (2007) recommended that physical education teachers who aim to foster high self-esteem among children should provide an environment that supports the autonomy of pupils and that fosters task and ego goal orientations in tandem. They emphasize that physical activity interventions that target autonomous motives in physical activities are likely to enhance young people's general self-esteem.

Mode of Physical Activity

Schomer and Drake (2001) discovered that the mode of exercise may influence the impact of physical exercise on psychological response. They highlighted the positive effects of both resistance training and aerobic exercise on psychological well-being as evidence of the importance of including these forms of physical activity as a way of enhancing self-esteem and reducing anxiety and depression.

Fox (1999) stated that there is good evidence that aerobic and resistance exercise enhances mood states. Research by Burgess, Grogan and Burwitz (2006) agreed that the mode of exercise may have an important impact on the potential to realise significant improvements in body image and physical self-perception. They investigated the effects of a six-week aerobic dance program on schoolgirls (ages 13 – 14). The researchers used a cross-over design with two groups, with each group receiving normal physical education lessons and aerobic dance lessons, in a different order. The results showed that participation in the six-week aerobic dance unit significantly reduced body image dissatisfaction and enhanced self-perception. There were also significant improvements in feelings of body attractiveness and physical self-worth following participation in the aerobic

dance unit. The researchers concluded that aerobic dance may provide a particularly supportive environment as well as multiple opportunities for adolescent females with low body image and physical self-perceptions to feel better about themselves. Polman (2004) emphasized that fitness instructors should develop programs for clients that focus on health and well-being, competence and enjoyment. These sessions should also take place in an environment that is not threatening to the client (body neutral environment).

A study by Basingre, Laure and Ambard (2006) reported that regular extra-curricular sports sessions were associated with improved levels of self-esteem and trait anxiety among young adolescents. They also found that the self-esteem levels of girls in their study did not vary as much as the self-esteem levels of the boys. They noted that one explanation for the greater variability among the boys could be that the program for the boys was more dependent on activities that required competitiveness.

Despite the benefits of exercise interventions, individuals often struggle to adhere to exercise programs. Schomer and Drake (2001) suggested that practitioners consider the following:

- Physical activity has the potential to lead to improved psychological well-being by means of direct and indirect mechanisms.

- Both acute and chronic exercise is associated with reduced symptoms of anxiety and depression as well as improvements in self-esteem.

- Health practitioners need to be aware of the dynamics of behavior change in order to assist clients sufficiently in dealing with potential barriers that may result in relapse.

- Exercise should never replace counseling or pharmacological interventions when it is required.

Fox (1999) provided evidence that moderate regular exercise can be considered as one way of treating depression and anxiety and improving mental well-being.   He found that exercise had a moderate reducing effect on state and

trait anxiety and it can improve physical self-perceptions and in some cases, global self-esteem. For example, Hammond (2002) told physiotherapists that although their primary aim may be to improve health-related physical fitness of a client, their intervention could also have the following outcomes:

- Improved feelings of well-being.

- Reduce the negative feelings of depression and anxiety.

- Improved self-esteem by building confidence in decision-making in relation to set goals.

Dunton, Scheider, Graham and Cooper (2006) found that programs designed to improve self-perceptions may require physical activity that is sufficient to improve cardiovascular fitness and decrease body fat. Despite the proven benefits of physical activity and movement competence on self-esteem, there are researchers who are cautious. Spence et al. (2005) contended that the benefits of exercise for global self-esteem (GSE) are overstated in the literature. They confirmed that exercise participation does lead to significant increases in global self-esteem but from a statistical point of view, the improvements are small. They identified type of program and change in fitness as two significant moderators of GSE. The results of their study showed that exercise and lifestyle programs produced small to moderate increases in self-esteem, while skills training activities demonstrated no effect on self-esteem. They also found that changes in physical fitness were related to significant increases in GSE.

Intensity and Frequency of Physical Activity

Fogelman, Bloch and Kahan (2004) investigated the relationship between individuals' self-perceptions of their levels of physical activity with the actual intensity of their physical exercise. They wanted to identify specific groups that lead a sedentary lifestyle and to look at associated socioeconomic and health factors. The researchers found a high rate of physical inactivity (48.2%) among all the subjects, and the highest rate of inactivity in women and in subjects with a lower education level. The subjects reported lack of time and/or energy as barriers to participation in physical activity.

Moreno and Cervelló (2005) identified differences between physical self-perceptions and the frequency of physical activity. Subjects participating in physical activity three times per week had higher scores in sport competence, physical condition and physical strength than the subjects who participated in physical activity once per week or less. They concluded that frequency of participation in physical activity can influence the development of the physical self-concept.

A Focus on Adolescents

Those interpersonal attributes and social skills that influence an individual's interactions with others and one's social appeal become increasingly significant during the adolescent years (Harter, 1999). Harter and Stocker (1996) found that adolescents who were preoccupied with peer approval based their self-worth on peer approval. They were most likely to be distracted from their schoolwork by peers, they were sensitive to fluctuations in both classmate approval and their subsequent self-worth, and they reported lower levels of classmate approval and self-worth compared to adolescents who believe that their self-worth precedes peer approval.

Harter and Stocker (1996) explained that when viewing the structure of self-representations there is a production of selves that vary as a function of a social context. The differentiation of role-related selves can be observed in young adolescents' tendency to report differing levels of self-worth across different contexts. The level of self-worth within a specified context is highly related to the perceived validation that the adolescent experiences from significant others. Young adolescents become sensitive to the different opinions and standards of people in different contexts. They are also sensitive to social comparison information. Young adolescents may not have the ability to correctly evaluate which sources of information are true and this leads to distortions in self-perceptions. An adolescent tends to over-generalize which contributes to unrealistic self-representations. He/she might feel intelligent at one point and incompetent at another point in time (Harter, 1999).

Chen and Hancock (2006) proposed a model to study the dynamic interaction of personal, school curriculum and community variables on adolescent physical activity. The model aims to help adolescents internalize situational motivation into self-initiated motivation. By using this model, the assumption is that physical activity behavior change shares the characteristics of learning behavior change with three milestone stages, namely, acclimation, competence and proficiency. The stages are described as follows:

The model by Chen and Hancock (2006) proposed that the development of adolescents' involvement in physical activity follows a progression from the Acclimation Stage to the Competence Stage and finally to the Proficiency Stage. During this process, the motivation and behavior changes are conceived to be a function of dynamic interactions among knowledge and skill, self-concept, motivation sources and behavior expectations (see Table 2).

Table 2

Hypothesized stages of physical activity behavior change for adolescents (Chen & Hancock, 2006)

Personal Variables	Stage 1 Acclimation	Stage 2 Competence	Stage 3 Proficiency
Knowledge and Skill	Little	Developing	Sufficient
Self-concept System	Inaccurate	Accurate	Very Accurate
Motivation Source	Situational	Situational & Personal	Person-initiated
Expected Behavior	None	Appearing	Stabilizing

The table describes a stage-like progression that identifies development differences that have implications for attracting adolescents to engage in an active lifestyle (Chen & Hancock, 2006):

- The Acclimation Stage: In this stage, adolescents do not have sufficient knowledge and skills to pursue an active lifestyle. They often have inaccurate perceptions of self, including body image. The most powerful sources for their motivation tend to be situational (externally referenced and potentially changing) rather than self-initiated and sustained, which makes them dependent upon the context in which they operate. Not much can be expected in terms of their physical activity behaviors.

- The Competence Stage: In this stage, adolescents begin to develop the knowledge and skills needed for the development of an active lifestyle. It is recommended that knowledge be provided about the health benefits of physical activity and the skills needed to participate in a variety of vigorous physical activities. The knowledge and skills acquired form the foundation for adolescents' to assess themselves more accurately and to develop positive self-perceptions. If their self-confidence increases, adolescents will begin to internalize motivation so that pursuing an active lifestyle is not only situation-dependent, but also includes personal choice and motivation.

- The Proficiency Stage: Once adolescents have reached this stage they have acquired sufficient knowledge and skills for a deep understanding of the value of an active lifestyle. They are now able to assess their competence accurately and have developed positive self-efficacy beliefs. The importance of this stage is that adolescents will have developed an accurate self-concept system and design strategies to help them overcome barriers in pursuing an active lifestyle.

The Chen and Hancock (2006) stages were accompanied by a model that specifies different variables that will affect the ultimate success of any program aimed at the promoting behavioral changes in adolescents' behavior in relation physical activity (see Figure 3).

Controls	Community Atmosphere	Self-initiated Motivation
Ethnicity	Safety	Personal Interest
Gender	Resources	Beliefs & Values
SES	SES profile	Perceived Competence
Fitness		

Situational Motivation

In-class Activity

Teaching Effectiveness

Physical Activity Behavior
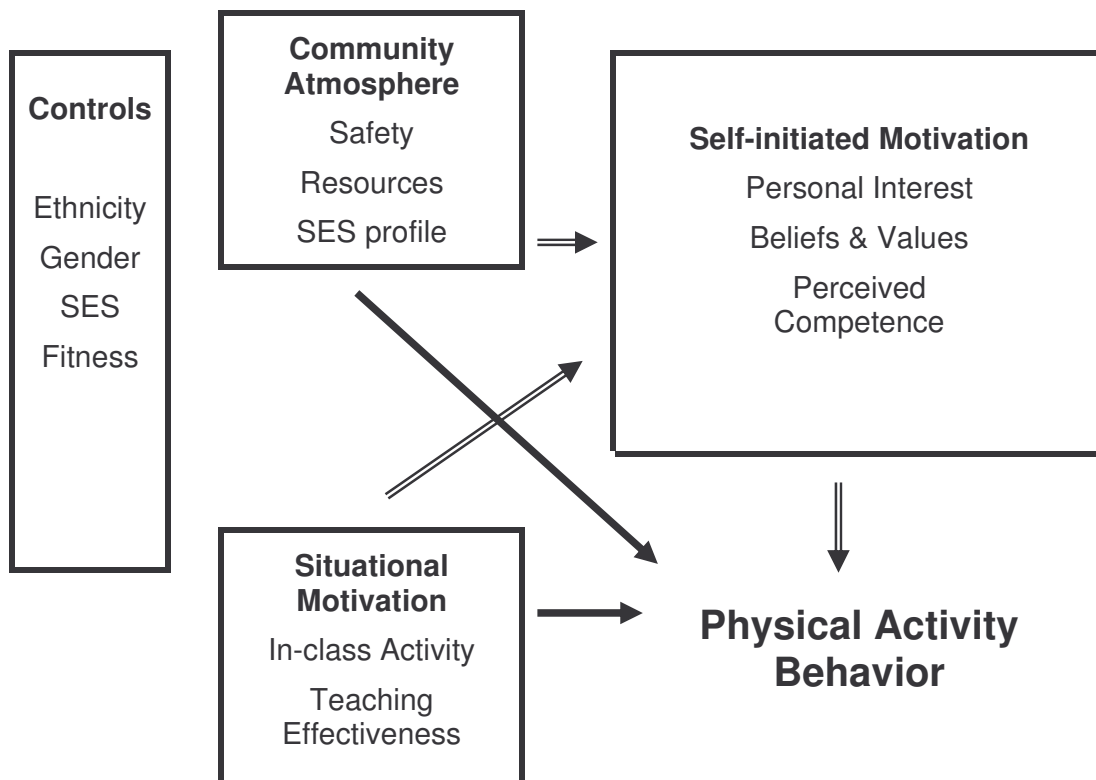
Figure 3.

A model for adolescents' physical activity motivation and behavior change (Chen & Hancock, 2006)

Four types of variables are identified (Chen & Hancock, 2006)

1. Control variables such as ethnicity, gender and socioeconomic status (SES).

2. Community variables such as safety, resources and the socioeconomic dimensions of the community.

3. Situational variables within the instructional setting, such as the actual activities provided and the teachers/instructors.

4. Self-initiated variables such as the energy coming from personal Interests, beliefs and values, as well as perceptions of competence.

The authors concluded that sustained changes in physical activity behavior is ultimately dependent on self-initiated motivation sources, community situational and control variables, despite best efforts to change behavior through the manipulation of situational variables (*e.g.,* the instructional setting, such as the actual activities provided and the teachers/instructors).

Whitehead and Corbin (1997) noted that an adolescent will develop his/her identity and self-esteem by using social comparison and feedback from significant others as major sources of information for making self-assessments. They made the following recommendations to program leaders who want to change the activity behaviors of adolescents through their participation in formal exercise programs:

- Assist adolescents in setting personal rather than comparative standards for fitness and weight management.

- Help adolescents understand how hereditary affects physical fitness and body composition.

- Make adolescents aware that society and media standards are often unrealistic.

- Assist adolescents in identifying alternative physical activities if they have dropped out of organized sport programs.

- Create "fitness for life" personal fitness courses.

- Make physical activity appealing or attractive to the adolescent.

Because girls and women have been found to lack confidence when faced with certain conditions in physical activity settings, and also have scored low on self-esteem and physical self-esteem variables in some research, Whitehead and Corbin (1997) provided special recommendations for coaches and physical educators working with girls and women.

1. Assist in changing the stereotype around what are labeled as female or male activities.

2. Assist females in understanding that competition is acceptable.

3. Help females develop a sound self-reward system.

Resilience

Harter (1990c) identified two characteristics that define a child who has high self-esteem. The high self-esteem child will:

1. Actively display confidence, curiosity, initiative and independence.

2. Be able to make adaptive reactions to stress or change.

The second characteristic may be regarded as resilience. In order to define resilience, it is helpful to distinguish between resilience and the concepts of coping and adaptation. Foster (1997) provided the following explanations:

- Coping is a response to a stressful or challenging situation that is often defensive and protective in nature. The types of stimuli that activate coping processes are usually referred to as stressors, strains and "hassles."

- Adaptation is a broader concept than coping and moves beyond defensive and protective responses. Adaptation refers to alterations or modifications that are the result of changing to improve or optimalize environmental fit.

- Resilience refers to the capacity to sustain coping (active or latent) and adaptation behaviors through various mechanisms that may not be immediately evident but become clear over time.

Although coping and adaptation are critical responses for dealing with stressors and environmental changes, it seems from these definitions that the development of resilience is needed in order to sustain the capacity to respond positively to changing environments and circumstances in the long-term.

Definitions of Resilience

Richardson and Waite (2002) defined resiliency as a self-righting force within every person that drives the individual to pursue self-actualization, altruism, wisdom and harmony with a spiritual source of energy. They described the resiliency process as a cycle of first being disrupted by change, opportunities, adversity, stressors or challenges and then accessing personal resources in order to overcome the situation. In the process of overcoming, often described as coping, the individual grows stronger and has a positive impression of his/her ability to survive, and even thrive.

Another definition offered by Neill (2006) referred to resiliency as the capacity of any entity to renew itself, especially in the presence of negative stressors. These stressors usually challenge or threaten the existence of the entity. From this perspective, resilient individuals demonstrate dynamic self-renewal in challenging/threatening situations, and less resilient individuals are negatively impacted by these situations to the extent that they may not be able to recover.

Humphreys (2003) contended that resilience should not be regarded as a stable capacity, but rather one that may vary over time, developmental level of the individual, and personal circumstances. In simple terms, resiliency can be thought of as the process of bouncing back from adversity (Nettles, 1997). Individuals are resilient when they are able to recover from stressful experiences quickly and effectively (Tugade & Fredrickson, 2004). Henley and Colliard (2005) described resilience as an inner strength, responsiveness and flexibility. They also stated that some individuals have more resilience than others which enables them to recover from stress and trauma completely or at least helps them recover to a healthy level of functioning after a traumatic event.

Cognitive Mechanisms Supporting Resilience

A transactional model was presented by Neill (2006) to illustrate the central cognitive processes involved in resilience (see Figure 4).

1. Stressor

2. Cognitive Appraisal

3. If perceived as dangerous...

4. Coping Resources

Problem-solving   **Emotion-focused**
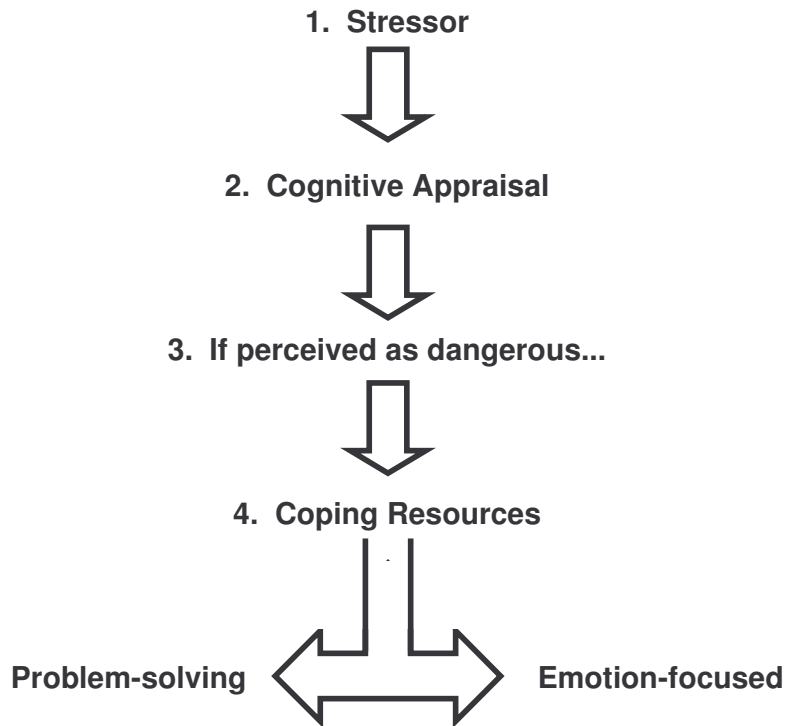
Figure 4

An adaptation of the flow model of stress and coping (Neill, 2006)

This model also can be used to guide the training of adaptive coping skills. The basic flow within the model explains the relationship between stress and coping responses as follows:

1. A potential source of stress occurs and is recognized by the individual.

2. Recognition of the stressor undergoes cognitive appraisal. Cognitive appraisal involves the individual deciding if the stressor can be readily dealt with or if it is a threat (dangerous) because it may be beyond their coping resources.

3. If a stressor is perceived to present a danger, coping resources will be activated.

4. The coping strategies employed to deal with the stressor are focused on problem-solving (trying to look at the danger as a situation that can be resolved) and/or inwardly focused on dealing with the emotional response to the stressor, such as seeking emotional support from others.

The development of resilience was proposed to occur only if the individual experiences a "cognitive transformation" in which successful coping with adverse stressors results in an adaptation in cognitive approach (Tebes, Irish, Puglisi, Vasquez & Perkins, 2004). In this approach, coping with adversity is regarded as an opportunity, which is a re-evaluation of the experience from one that was primarily traumatic or threatening to one that is growth-promoting. Linley and Joseph (2004) found that the positive reinterpretation of coping was consistently associated with growth under adversarial conditions.

Types of Resilience

Although Neill and Dias (2001) described resilience as a psychological quality that allows a person to cope with and respond effectively to life stressors, Neill (2006) suggested that resilience can be better understood in a broader context. He stated that at least three different types of resilience could be distinguished: Ecological resilience, cultural resilience and psychological resilience.

- Ecological resilience is the capacity of an ecosystem to withstand stressors such as climatic variations without manifesting major alterations such as overpopulation or environmental destruction.

- Cultural resilience involves the capacity of human culture to maintain and develop cultural identity and critical cultural knowledge and practices.

- Psychological resilience refers to an individual's capacity to withstand stressors, without manifesting psychological dysfunction. Psychological stressors are often considered to be experiences such as the death of a loved one, chronic illness, sexual, physical or emotional abuse, fear, unemployment and community violence.

Understanding that there are different types of resilience can help when attempting to implement programs to enhance resilience (O'Neal, 1999). For example, Hunter (2001) explained that developing the resilience to overcome adversity could be facilitated or hindered by the type of social support system offered to an individual. He found that adolescents who did not have support systems developed survival and self-protective forms of resilience, while those who had support systems demonstrated a connected form of resilience.

Characteristics of Resilient People

Current theorists view resilience as a multidimensional construct that includes critical factors such as temperament, personality traits, cognitive factors, genetic traits, sense of humor and social support. These critical factors are somehow associated with successful adaptation to stressful events (Stephenson, 2006). For example, some battered women report recurring physical and psychological distress as a result of their abuse, but other battered women appear to respond and experience with less severe outcomes (Humphreys, 2003).

Staff (2004) observed that resilient people do not perceive themselves as victims but as problem-solvers. Instead of complaining about their situation, they plan ahead and work out the current issue. He (2004) also stated that resilient people are good at regulating their emotions and staying calm under pressure. This ability allows them to draw on what they know when they need it the most. Neill (2006) added that resilient individuals – and resilient communities - are more inclined to perceive problems as opportunities for growth. They not only cope well with unusual strains and stressors but experience these situations as developmental opportunities.

Neill (2006) provided the following list of descriptions that are often associated with resilient people:

- Resilient people are able to bounce back and recover from most situations.

- Resilient people are motivated to solve problems.

- Resilient people perceive problems as opportunities.

- Resilient people persevere through difficult times.

- Resilient people have the capacity of identifying small windows of opportunity and making the most of it.

- Resilient people have a deep-rooted faith in a system of meaning.

- Resilient people have a healthy social support network.

- Resilient people have the resources to deal with different kinds of situations.

- Resilient people have a wide comfort zone.

- Resilient people have the ability to recover from experiences that are in the panic zone or of a traumatic nature.

According to Andrews (2000), youth who thrive in the face of adversity share common traits, including the ability to trust and form caring relationships, a sense of independence, good problem-solving skills, perseverance and a belief that their lives have meaning and purpose. Mundy (1996) found that one characteristic distinguished high-risk youth from resilient youth, was that high-risk youth cannot seem to break out of a self-perpetuating cycle of low self-expectations. High-risk youth hold on to negative beliefs about themselves and their situations.

Ewing (1997) concluded that the development of positive self-esteem could serve as a buffer between youth and the negative experiences they encounter in adverse environments, and in this way develop their resilience. For example, he believed that if youth evaluate themselves in a positive way they will be more capable of refusing drugs and gang involvement.

Factors that Affect Resilience

Resilience involves behaviors, thoughts and actions that can be learned and developed (American Psychological Association, 2004). Resilience has

shown to be modifiable and can be improved (Stephenson, 2006). Masten (2001) noted that resilience is common capacity that usually arises from the normal processes of coping and adaptation to change. In other words, resilience is associated with the development of a collection of protective capacities.

The potential for resiliency may be rooted in the innate physical and mental characteristics of the child (Mundy, 1996). Resilient adolescents can develop protective capacities that can reduce the impact of the negative influences of environmental stressors on their lives (Bloemhof, 2006). However, Werner and Smith (cited in Thurber, 2003) emphasized that recovering from adversity is not always something adolescents can do on their own. Resiliency is not only a function of individual capacities that may operate as protective mechanisms, but also environmental characteristics such as emotionally supportive friends. Therefore, it is essential to identify the full range of protective capacities and factors that can affect the development of resiliency.

Community support and unconditional acceptance of a young person by an older person have been identified as two protective factors in the social environment that can have a positive affect on resiliency (Henley & Colliard, 2005; Mundy, 1996). The American Psychological Association (2004) stated that having caring and supportive relationships were primary factors contributing to resilience. Relationships that create love and trust, provide role models and offer encouragement and reassurance can strengthen an individual's resilience. Ungar (2004) found that parents and other caregivers exert a large influence on the mental health of high-risk youth who have been marginalized by poverty, social stigma, ethnicity and poor social or academic performance. Werner and Smith (cited in Thurber, 2003) identified the following factors that contribute to resiliency in the face of adversity:

- Parents who instilled a strong work ethic.

- Caring and supportive relatives and teachers.

- Quality education.

- Faith in God or a higher power.

- Sensitive, reliable parenting.

- Parents' educational level and socioeconomic status.

- Easygoing, adaptable temperaments.

- Autonomy and social maturity.

- Scholastic competence.

- Self-efficacy.

In a study by Hunter (2001), many adolescents were found to believe that they were resilient. This finding was irrespective of the age, gender, culture and socio-economic status. However, experiences with actually overcoming adversity and showing resilience in real situations were not common occurrences among these subjects. It appeared that many of the subjects lived in situations where their parents and other adults protected them from genuinely stressful confrontations.

Leppert, Gunzelmann, Schumacher, Strauss and Brahler (2005) described resilience as a protective personality factor that they believed could have a positive relationship to physical well-being. Their results showed that resilience was a significant predictive variable for physical well-being. They also found that the amount of resilience was lower in women than in men.

Martin-Krumm, Sarrazin, Peterson and Famose (2003) explored why some athletes recover after failure in sports while others give-up. The results of their study showed that participants who had a "pessimistic explanatory style" had greater negative reactions to stress than those with an optimistic style. An optimistic explanatory style was identified as a protective capacity that promoted a positive response to adversity, while a pessimistic style seems to intensify the experience of failure and it negative consequences.

The Development of Resiliency

Neill (2006) used a simplistic formula to foster his explanation of the role of challenge and support as determinants of an individual's growth and development of resilience (see Figure 5).

$$Growth = Challenge + Support$$

Figure 5

Recommended formula to foster growth and resilience

Neill (2006) emphasized that any level of challenge can be provided if the corresponding support is appropriate and sufficient.   Even a small amount of challenge may be too much and can lead to a traumatic experience if the individual is not well supported. Bell (2001) described the process leading to the development of resiliency to be similar to the process of developing muscular strength.   An individual needs to overload the muscles to develop strength, and once the desired level strength is achieved, exercise levels must be maintained or some strength will be lost.   This becomes a metaphor for the development of resiliency, where an individual must be optimally challenged in order to develop resiliency and must continue to engage in stimulating situations in order to maintain resiliency.

The American Psychological Association (2004) identified four variables that contribute to resiliency that can be learned in either formal or informal settings:

1. The capacity to make realistic plans and take action to execute them.

2. A positive view of oneself and confidence in own strengths and abilities.

3. Communication and problem-solving skills.

4. The ability to manage strong feelings and impulses.

Resilience in Clinical Settings

Conner and Davidson (2003) became interested in the concept of resilience as being relevant to the treatment outcome in anxiety, depression and stress reactions and developed the CD-RISC scale. Stephenson (2006) reported that patients who had a primary diagnosis of social phobia had significantly lower CD-RISC scores than patients with primary diagnoses of panic disorder or obsessive-compulsive disorder.

Sameroff and Chandler (cited in Thurber, 2003) hypothesized that infants with complications at birth developed later physical and psychological problems only when poor environmental circumstances persisted throughout their infancy. According to Thurber (2003), resiliency depends on a multitude of factors, and the most important seems to be the quality of the care giving and socioeconomic status.   One way of encouraging resilience is by minimizing the effects of trauma. Bell (2001) noted that if children are identified immediately after suffering a traumatic stressor and helped to cope with that particular stressor, they will be less prone to engage in self-destructive behavior like drug abuse, school failure, unsafe sex and violence.

Resiliency in Non-clinical Settings

Andrews (2000) highlighted the work of Shatte and of Grotberg. He highlighted Shatte's belief that resiliency could be taught to children by teaching them improved thinking skills.   He also reviewed Grotberg's investigations into how parents and caretakers handled a variety of challenges like earthquakes, fires, floods, war, poverty, illness, death in the family, loss of income or a major move. The findings from the study not only provided insight into how to teach resiliency to different children at different ages, but they also demonstrated that punishment and guilt are counterproductive to the development of resilience. The following observations were reported to be made by Grotberg.:

- Girls tended to become resilient by building strong, caring relationships and boys became resilient by learning how to solve problems.

- Children can learn how to become resilient irrespective of their IQ.

- Children learn resilience primarily from their parents up to the age of 11, and thereafter they learn from their peers.

- Parents and caregivers find it possible to teach resilience when a child is young, vulnerable and helpless, but experience difficulty when dealing with rebellious children.

- Affluence has no impact because parents in developing countries teach resilience as often as those in affluent countries.

In what could be as a kind of self-help list of cues to assist individuals, the American Psychological Association (2004) identified 10 ways to promote the self-development of resilience.

1. Build social support network.

2. Avoid interpreting crises as insurmountable problems.

3. Accept circumstances that cannot be changed.

4. Strive towards your goals.

5. Take decisive action.

6. Seek opportunities for self-discovery.

7. Develop confidence in your ability.

8. Consider the stressful situation in a broader context.

9. Maintain an optimistic outlook on life.

10. Be aware and take care of your own needs and feelings.

Resilience in Sport and Recreation Settings

Sport and play activities have been proposed to be one approach for helping children and youth overcome trauma experienced from disasters. Advocates believe that participation in physical activities can access and activate innate resilience that can naturally strengthen, heal and protect individuals in time

of extreme stress (Henley & Colliard, 2005). Nettles (1997) suggested that sports coaches could build resiliency in their athletes by using the following strategies:

- Using strategies that include modeling, demonstrating, giving instructions and questioning.

- Creating an optimal learning environment

- Identifying targets for performance based on assessments of knowledge and skill.

- Providing social support by listening, protecting, advising, counseling, empathizing and creating trust.

There is research evidence supporting the enhancement of resilience through adventure education (Neill & Dias, 2001). The primary aim of adventure-based recreation programs is to achieve attitudinal and behavioral changes in participants by exposing them to a sequence of challenging tasks. Based on previous research as well as his own findings, Bloemhof (2006) concluded that participation in ropes course programs can strengthen protective factors that enhance resiliency. The results of another recreation program led by Allen et al. (2006) demonstrated that the implementation of an outcome-based programming model could have a positive impact on the development of resiliency skills for youth enrolled in a summer day-camp program. They further stated that the attainment of resiliency skills are directly tied to the ability of adolescents to successfully make the transition to adulthood and that recreation and play activities can assist young people through this difficult period of development.

Community efforts to enhance resilience through intervention programs is believed to be pro-active, preventative, cost-saving and is a positive approach to minimizing psychological dysfunction (Neill, 2006). The ability to enhance resilience seems to be an underlying theme in both clinical and humanistic psychological work as well as in challenge-based personal development programs such as Outward Bound. Neill and Dias (2001) found positive results for 41 young adults who participated in a 22-day Outward Bound program. Participants achieved significantly greater gains in resiliency compared to the control group.

The researchers identified developing positive interpersonal relations and minimizing the detrimental impact of negative group members as a key to the success of their program.

Resilience and At-risk Youth

Efforts to build resilience among at-risk populations have become an increasingly popular target of community interventions, youth work, social work and personal development programs (Neill, 2006). Bell and Suggs (1998) suggested that "heart" is an essential component to having resiliency. They defined "heart" as the characteristic that causes a person to be firm in his or her beliefs and to have determination to accomplish goals. They proposed that training to develop "heart" involves encouraging children and adolescents to exceed their limits in a sports context. They further contended that cultivating "heart" is a primary prevention strategy to prepare children and adolescents to face adversity, and that sport and recreation were suitable vehicles for the delivery of intervention programs.

Mundy (1996) confirmed that intervention strategies in recreation and leisure programs have been found to be effective in achieving developmental outcomes with at-risk youth. According to Allen *et al.* (2006), the success of summer day camp interventions depends upon:

- Adequate contact time between program staff and participants.

- Quality time between the participant and staff member.

- Adequate training of program staff.

- Long-term participant goals.

De Jager (2004) explored youth resilience specifically in South Africa. In her study, the participants were from a previously disadvantaged community and were continuously exposed to maladaptive behaviors. However, not all of them emulated such behavior. She concluded that the youth who were able to rise above their negative environment and to interact effectively in socially and economically functional environments had developed sufficient resilience to resist

the pressures and expectations of their immediate environment. She identified six different categories of personal skills and support structures that she believed allowed these individuals to develop resilience under very difficult circumstances (see Table 3).

Table 3

Skills and support structures that contribute to the development of resiliency

Category	Skills and Support Structures
Skills that can be learned	Social competencies, comprehensive interpersonal skills, effective problem-solving, decision-making skills, self-management, self-control, coping with stress and goal directedness.
Family	A family environment where affection, love, care and support are available.
Peers	A friend with the same values means that they shared the same goals and aspirations.
School	The school curriculum provides the individual with programs that meet their future goals and equip them with the necessary life skills.
Community	The individual can identify and learn from positive role models who provide support and motivation.
Leisure Time	The individual has access to a variety of sports and family-oriented recreational activities.

Conclusion

This chapter has reviewed literature on movement competence, self-esteem and resiliency. If one of the responsibilities of the sport scientist is to find ways to assist professional practitioners to deliver physical activity programs that can have an impact on peoples' lives, then a research project to investigate how movement competence programs can affect self-esteem and resiliency can be justified.

Harter's (1978) Competence Motivation Theory was the theoretical approach adopted in this study. The theory was appealing because it provided a multi-dimensional conception of self-esteem and associated self-esteem outcomes with the development of competence (for the purpose of this study, competence in challenging movement situations). There is a concern that Harter's theory will not be relevant for adolescents from a developing world context (Malete, 2004). According to Weiss and Ferre-Caja (2002) self-esteem is not a straight-forward outcome of perceived competence, but includes other contextual variables, such as social support.

An advantage to adopting Harter's (1978) theory is that it is accompanied by well documented methods of assessment. Feltz (2007) raises some criticism of the competence motivation instruments. She noted that because they are self-report instruments, they depend on the subjects' ability to be able to assess their own competencies. Another concern is that the instrument fails to take contextual factors of performance situations into account because it measures perceived competence as a trait (Feltz, 2007).

Despite these considerations, the development of positive self-esteem is proposed to be a valid, if ambitious, objective for movement competence programs. Plummer (2005) concluded that it is important for individuals to have a healthy self-esteem because a person who believes in himself and who has developed a degree of self-reliance is more likely to be able to cope with life's inevitable challenges.

In addition to self-esteem, there is an increase in interest in movement programs that promote other positive psychosocial outcomes, such as resilience. For example, Henley and Colliard (2005) have described their efforts to assist children and youth to overcome the trauma associated with their experiences in disaster events. In their approach, they use sport participation as a means to attract children and youth into programs where they implement strategies specifically designed to encourage the development of resilience.

While the theoretical point of departure for this research is in the relationship between movement competence, self-esteem and perhaps resilience,

the cultural point of departure is within the social and socio-economic conditions that shape the personal development adolescent girls from historically disadvantaged backgrounds in South Africa. These girls can be described as "at-risk (Zealand, 2005). It is the investigator's belief that these girls must have the opportunity to develop positive self-esteem and resilience if they are to have some control of their own future.   The importance of self-esteem has been demonstrated, but resilience is a relatively new area for research. Resilience has been conceived to be a personal journey and an ongoing process that requires time and effort. People do not react the same way to traumatic and stressful life events and that is why people will use various strategies (American Psychological Association, 2004). Although resilience as a variable is not well understood, this research will be an initial exploration of whether developing movement competence can have a positive impact on the development of resiliency, as well as on self-esteem.

Chapter Three

Methodology

The purpose of this study was to investigate the effects of two different types of movement programs (an expressive movement program and a self-defence program) on the development of movement competence, self-esteem and resiliency in adolescent girls from a low-socio economic environment.

Design

A combination of quantitative and qualitative research methods was used to answer the research questions. It is not unusual to mix these two approaches. Gratton and Jones (2004) suggested that one approach may facilitate the other and that both approaches can be used to investigate the same phenomenon. Although quantitative assessment instruments are available to measure movement competence, self-esteem and resilience, the researcher believed that it would be useful to employ a qualitative approach with the participants in the intervention programs regarding their feelings, thoughts and experiences with the two different types of content. Quantitative methods may be used to collect relatively simple numerical data from a large sample whereas qualitative methods can collect rich data from a smaller sample size.

The researcher followed the non-equivalent-control-group design to gather the quantitative data. This design is often used in real-world settings where groups cannot be randomly formed (Thomas & Nelson, 2001). The three groups in this study came from two different schools where the students were from similar socio-economic backgrounds. The pre-tests and post-tests were administered to all groups, but only two groups received intervention programs.

Focus groups were used to collect qualitative data.   Focus groups employ group interviews and rely on the interaction within the group (Morgan, 1997). The role of the investigator/facilitator is to listen and gather information (Krueger & Casey, 2000). The researcher provides topics and takes the role of a moderator. Focus groups can be used as either a self-contained method or it can be used as

a supplementary source of data (Morgan, 1997). In the current study, the researcher relied primarily on the quantitative data collection methods and used the data collected from the focus group interviews as a supplementary source of data to gain special insight into the two different intervention programs.

Procedures

The following procedures were followed in the completion of this study.

Selection of Assessment Instruments

A section of an established motor ability test battery was selected to measure movement competence. Questionnaires were identified in the research literature to measure self-esteem and resilience.

Movement Competence

At the recommendation of a motor learning specialist, four motor fitness/motor ability tests were selected to gather data about the general movement competence of the participants. These tests were selected from the second phase of the Australian Talent Identification Program (Australian Sports Commission, 1998). The reason these tests were chosen was because they all measure total body coordination in addition to a common physical or motor proficiency. The limitation of using this test battery is that it only has face validity from Australian Sports Commission. These tests were:

1. Cricket ball throw (total body coordination and upper body strength).

2. 20m Sprint (total body coordination and speed).

3. Agility run (total body coordination and dynamic balance).

4. Vertical jump (total body coordination and leg strength).

Total body coordination as measured by these tests, supports successful performance of a variety of motor skills and therefore taken as indicators of movement competence. Protocols for the tests can be found in Appendix A and the scorecard in Appendix B.

Self-Esteem

According to Harter (1985; 1988), grade eight learners can be tested using either the Self-Perception Profile for Children or the Self-Perception Profile for Adolescents. Horn (2004) provided a summary of the various sub-domains for assessment at the different levels of Harter's instrumentation.   Table 4 presents the sub-domains measured in the two profiles considered for use in this study.

Table 4

Horn's (2004) identification of the sub-domains for assessment in two of Harter's instruments

Sub-domains in the Self-perception Profile for Children (Harter, 1985)	Sub-domains in the Self-perception Profile for Adolescents (Harter, 1988)
Scholastic competence	Scholastic competence
	Job competence
Athletic competence	Athletic competence
Physical appearance	Physical appearance
Peer acceptance	Peer acceptance
	Close friendships
	Romantic relationships
Behavioral conduct	Conduct/Morality
Global self-worth	Global self-worth

In this study the Self-Perception Profile for Children (Harter, 1985) was chosen to measure self-esteem.   The researcher was concerned that the sub-domains of job competence and romantic relationships may not have been culturally appropriate, and that the focus on conduct/morality rather than the more general behavioral conduct might also have had cultural undertones. For these reasons, the less sophisticated instrument was selected for use (definitions of the domains appear in Appendix C). The internal consistency (reliability) for all six subscales are acceptable (Harter, 1985). The scores vary as follows for the subscales:

- Scholastic competence: .80 to .85

- Social acceptance: .75 to .80

- Athletic competence: .80 to .86

- Physical appearance: .76 to .82

- Behavioral conduct: .71 to .77

- Global self-worth: .78 to .84

Although the Self-Perception Profile for Children was used it should be noted that there is a possibility that Harter's scale has poor cultural relevance for populations in less developed African contexts.

Each of the six subscales contains six items, comprising of a total of 36 items on the questionnaire. The order of the statements is mixed to avoid focusing on one sub-scale at a time. For each item/statement, the subject first must decide if the statement is true of most people, or not true of most people. If she indicates the statement is true of most people, then she must indicate if the statement state is either "sort of true" or "really true" of her. If she indicates the statement is not true of most people, then she must indicate if the statement is "not true" or "really not true" of her. Each statement is then scored on a scale from 1 to 4, where 1 indicates low perceived competence and a score of 4 reflects high perceived competence.

Resilience

The Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003) is a brief self-rating assessment instrument that was selected for use in this study. The CD-RISC was developed for use with adults and primarily for use in clinical settings but because options for measuring resiliency are limited it was decided to use it in the current study. The internal consistency for the full scale for the general population was 0.89 (validity). The scale has an intraclass correlation coefficient of 0.87 (reliability score). It is used as a measure of the ability to cope with stress coping and when treating anxiety, depression and stress reactions.

The scale quantifies resilience in order to assess treatment response. It is comprised of 25 items and is rated on a 5-point scale (0-4), with higher scores reflecting greater resilience. The range of responses include; not true at all (0), rarely true (1), sometimes true (2), often true (3), and true nearly all the time (4). The subject is asked to consider how they felt over the last month when responding to each statement. The total scores range from 0-100, with higher scores reflecting greater resilience. The CD-RISC has sound psychometric properties and distinguishes between individuals who have greater and lesser resilience. The scale also demonstrated that resilience is modifiable and can improve with treatment. Greater improvement also corresponds with higher levels of global improvement.

Selection of Participants

The selection of participants to participate in this study began with the selection of two schools. Because the school principals needed to support the research, it was necessary for the researcher first to locate two cooperative sites that were located in similar and low socio-economic communities. After the respective principals agreed to the project an application was submitted to the Western Cape Education Department (WCED) to request permission to perform the testing and implement the intervention programs. Permission was granted and informed consent was undertaken by the principals because the intervention program formed part of the schools' extra-mural activities. The letter of application to the WCED can be found in Appendix D.

Once the WCED approved the project, the researcher invited all grade eight girls from the first school to a meeting and explained the research project. This school comprised of 33 teachers and had a total of 1242 learners. The girls were informed that the program would serve as their physical education program. They were told that half of them would receive the program in the first semester, while the other half would be the control group. They were also informed that the girls who were in the control group in the first semester would have the chance for Biodanza sessions in the second semester. The girls were then asked if they agreed to the arrangement, and if they were satisfied with a random assignment to

either the Biodanza or the control group. They all indicated they were satisfied with the plan.

The researcher then went to the second school and repeated the meeting and explanation. This school comprised of 27 teachers and 894 learners in total. The grade eight girls from that school were given the opportunity to volunteer to participate in the self-defence program.

Forty-one girls from the first school agreed to participate and 22 girls from the second school volunteered. This means that a total of N=63 girls between the ages of 13-14 participated in the study. Cowles (cited in Christensen, 1988) specified that 35 participants were sufficient and if one is using analysis-of-variance design with several levels of independent variables, a minimum of 15 participants per cell is acceptable. According to Thomas and Nelson (2001), the sample sizes in the current study are also considered to be adequate.

The 41 girls who participated from the first school were randomly divided into a movement program A-group (n=19) and control group (n=22). The participants in the movement program A-group were scheduled to receive 20 sessions, twice per week for ten weeks of Biodanza, a dance-based expressive movement program. The control group received no treatment until after the post-testing, at which time they were also provided with the Biodanza program. The provision of the dance program for the control group after completion of all data collection was for ethical purposed. If the participants in the control group had not been offered Biodanza, they would have had no physical activity or movement program for the entire year. No data was collected in the post-study program.

The 22 girls (n=22) who volunteered to participate from the second school became movement program B-group and were assigned to be involved in 20 self-defence sessions, twice per week for ten weeks.

Pre-tests

Data was gathered using the four motor skill tests and the two questionnaires previously identified. Two days were scheduled for pre-testing at each school.

- On Day One the participants arrived in a special classroom after school. The researcher explained the two questionnaires to the participants, then distributed pencils and the questionnaires: The Self-perception Profile for Children (Harter, 1985) and the CD-RISC (Conner & Davidson, 2003). The participants were first taken through the directions for the Self-perception Profile and asked if there were any questions. Once the group indicated they were comfortable completing that profile, they were taken through the directions for the CD-RISC. Once they indicated they were also comfortable completing this questionnaire, they were given the signal to complete both questionnaires. The researcher remained in the room at all times to field any questions any subject might have while completing the questionnaires.   The participants gave both questionnaires back to the researcher as they finished and left the room.

- On Day Two, all of the participants arrived after school in appropriate clothing and participated in the four motor skills tests. The test administrators were graduate Sport Science students who had previous experience administering the test protocols. Each administrator was asked to study the protocol before the commencement of the pre-testing. The participants were divided by the researcher into four groups and each group went to one of the four testing stations to begin the test at that station. The groups rotated to each of the stations as soon as all the participants had completed testing at their station.

The pre-test procedures and the support personnel were identical at the second school.

Intervention Programs

There were two experimental groups and one control group in this study. Each experimental group received a different intervention program. The reason for trying two different types of intervention programs was to determine if different types of programs might have different effects on the movement competence, self-esteem and/or resilience of adolescent girls. One group received 20 sessions of Biodanza and the other received 20 self-defence sessions over a ten-week period.

Each session was 60 minutes in length. The intervention programs took place at the respective schools and the participants attended two sessions per week except during the September school holidays. The skills and themes covered in the two different movement programs can be found in Appendix E and F.

Movement Program A-group: Biodanza

Biodanza is a personal development and growth system developed by Chilean medical anthropologist Professor Rolando Toro Araneda. It is a group activity and works with music, movement and emotion to stimulate the potential of joy, creativity and connecting with others. Dances are performed on three levels, namely, individual, in pairs and with the whole group. The purpose is not to copy the teacher but to do the movements according to the feeling evoked by the music. This leads to the expression of the unique identity. The classes usually are for 90 minutes, but for children they are often shorter. Classes take place indoors and participants need to wear loose clothing. The main psychological benefits have been identified as reduction in stress and psychosomatic complaints, and improved social abilities. It was found that in a study by Steuck (cited by Bateman, 2004) that participants in Biodanza experienced the following:

- Higher self-efficacy.

- Improved offensive problem-solving strategies.

- Improved anger regulation.

- Less fear of contact.

- Increased ability to say 'no'.

- More optimism.

- A more relaxed attitude.

- Greater autonomy.

- More expansive behavior.

- Improved psychological health.

The teacher who delivered the intervention program in this study was a fully qualified Biodanza teacher. She had been trained in a three-year program consisting of 27 modules and had to teach a series of supervised classes.

Movement Program B-group: Self-defence

The main aim of the self-defence program was to teach the participants the different physical skills needed to become competent in self-defence. The outcomes of the sessions included the following:

- To be able to react quickly.

- To be able to use the voice as a weapon in defence.

- To use the body to prevent attacks.

- To understand the causes of attacks.

- To improve fitness.

- To improve balance (stances/grounded).

The instructor who delivered the self-defence program in this study was male and had an international qualification in Kushodo Karate-do and held the rank of Shodan.

The Control Group

As previously mentioned, although the control group received no movement program during the course of this study, they were provided with a Biodanza experience after the post-tests. Biodanza was selected for them because the intervention program delivered at their school had been Biodanza.

Post-tests

Two days were scheduled at each school within 10 days after conclusion of the intervention programs. The same protocol for administration of the

questionnaires and the motor skills tests for the pre-tests were followed for the post-tests. A total of 41 participants from the first school and 21 participants from the second school participated.

Additional data was gathered four weeks after the final intervention session from the participants who had participated in the two intervention programs. The researcher decided to conduct focus group interviews at the two schools in order to gain the participants' personal insight into their movement experiences in the two different movement forms. Two focus groups were scheduled at one school and two at the other. There was an average size of seven participants per group. A total of four groups is an acceptable amount as it is recommended that research projects should consist of three to five groups. It is also advised that the group size is in the range of six to 10 members (Krueger & Casey, 2000; Morgan, 1997).

Each of the four focus groups sessions followed this protocol. The investigator met the first participants in an empty classroom after school. After explaining the purpose of the focus group discussion to the participants, the following questions were used to encourage a discussion:

1. You participated in the self-defence/Biodanza sessions and I am interested to know how you experienced the sessions?

2. What did you value the most of the sessions?

3. What aspects of the sessions did you enjoy the most?

4. Can you tell me about any lessons you leant during the sessions?

5. If you could choose any other movement form, what would it be?

6. Some of you were unable to attend a few of the sessions. Will you share why you could not attend?

The participants were encouraged to share their ideas and feelings, as well as reinforce what others had to say. When the participants indicated that they were satisfied that they had shared their impressions, the investigator thanked them.

Data Analysis

Both the quantitative data and the qualitative data were analyzed and reported in the following chapter. The following analysis methods were used.

Analysis of the Quantitative Data

The statistical package SPSS 14.0 for Windows was used and non-parametric procedures were applied to analyze the data. Descriptive statistics was used to report the means and standard deviations. Although it was possible to use parametric statistics for this study it was decided to use non-parametric statistics due to the many variables and the small sample size. The Wilcoxon Signed Ranks Test was performed to determine within group changes in pre- and post-test performances. It was necessary to verify if the groups were equal before the commencement of the intervention program and to determine this, the Kruskall Wallis Test was administered on the total group on both pre- and post-test scores. The investigator also wanted to establish if a relationship existed among movement competence, resiliency and self-esteem. To answer this question the Spearman's correlation coefficient which is a non-parametric statistic was applied to the data. The groups were compared to each other and to establish if any significant changes occurred between groups after the intervention program the Mann-Whitney test statistic using the change scores were used.

Analysis of the Qualitative Data

Each of the focus group interviews was individually recorded and transcribed using the LFH720 Philips transcription unit. The data was captured using voice recognition software making it possible for transcript-based analysis. Transcript-based analysis uses unabridged (complete) transcripts of the focus group interviews as a foundation for analysis (Krueger & Casey, 2000). The word processor (computer) was used to manage the data as well as to identify and categorize themes.

Analysis of focus group interviews is a deliberate and purposeful process. It takes place in a systematic manner and is an ongoing process (Krueger & Casey, 2000). Morgan (1997) emphasized that when interpreting the data it is important

to distinguish between what the participants found interesting what they found important. Although nonverbal aspects of interviews are important, analyses of focus groups concentrate on the verbal content of the group discussions (Morgan, 1997). Content analysis was used to interpret the data. It involves analyzing the content of texts or documents and refers to any message that can be communicated including themes (Mouton, 2001). According to McCarthy and Jones (2005) focus group interviews allow the child's unique perspective to be examined. It also overcomes the difficulties children have in understanding both the text and context of paper and pencil measures.

Analysis of the Responses of the Focus Group

It must be acknowledged that focus group discussions were new to both the investigator and to the participants in this study. Although the investigator prepared a list of possible probes to use if participants were hesitant to respond, it was difficult to anticipate how the participants would react during a session.

A method called "consensual validation" was used to analyze and categorize the responses of the participants (Scanlan, Stein & Ravizza, 1991). In this method, experts examine all of the quotations derived from each of the transcribed interviews. They decide together how to cluster the quotations into categories of similar meaning. They are encouraged to discuss and even change their categories during the entire process of transcript analysis, until they are satisfied that categories do reflect the collection of quotations accurately. Then, they organize the categories into broader themes in order to facilitate an understanding of the general structure of the types of comments made by the participants.

Face/logical validity for this method can be claimed if there is sufficient agreement between experts that the categories and themes identified are accurate in describing the responses of the participants (Thomas & Nelson, 2001). For the purpose of this study, the investigator set a goal of achieving 100% agreement rate between the experts as the level for acceptability for the categories and themes emerging from the focus groups.

A particular challenge in this study was that the participants were all Afrikaans speaking, which meant that the discussions were conducted in Afrikaans. The investigator is fluent in Afrikaans so could provide leadership for the group. This meant that the process of transcription produced a collection of quotations in Afrikaans. It was necessary to recruit experienced researchers to process the data who were also fluent in Afrikaans, a requirement that limited the list of qualified researchers. One researcher has had two articles using this method published in refereed journals and the other used this method in his own thesis and subsequent presentations at two academic conferences.

Invitation of Experts

Two sport scientists, who had successfully used this method in previous research, were invited to analyze the responses from the focus groups. Both experts had had experience working with adolescents, although neither had any experience with the implementation of the program in this study.

The Analysis Session

The analysis session took place during a single three-hour period. The investigator delivered the transcripts of the focus group discussions and reminded the experts that 100% agreement on their analysis was necessary. The investigator then left the facility. This allowed the experts to work without interruption. The pattern of their work was as follows:

1. Independent reading of all the transcripts.

2. Proposal of an initial category framework.

3. Attempt to organize participants' responses into that initial framework.

4. Progressive revisions of the framework to ensure an accurate reflection of the meanings revealed in the focus group responses.

5. Agreement on the categories.

6. Proposal of the general themes to organize the categories.

7. Agreement on the themes.

8. Final check on agreement of the location of each quotation from the transcript in the categories and themes in the analysis.

Summary

This study investigated how two different types of movement program can influence the movement competence, self-esteem and resiliency of adolescent girls from a lower-socio economic community. Information from this study can help researchers better understand how the type of movement content may influence the outcomes of participation, with special attention to how gaining movement competence might help contribute to the development self-esteem and resilience among adolescent girls.   Information from this study can help practitioners better understand the potential of different types of movement programs to contribute specifically to self-esteem and resilience. The results of the statistical analysis are presented in Chapter Four.

Chapter Four

Results and Discussion

Complete pre-test data relating to the research questions were gathered from 63 grade eight girls from two schools from a low socio-economic environment. The post-test data was collected after the two of the three groups completed a 10-week movement intervention program (the third group was the control group). One subject in the self-defence intervention program (n = 22) was not able to complete all the post-tests (cricket ball throwing test), so the group size for that particular test dropped to n = 21 for data analysis. In order to establish the similarity among the three groups, an initial comparison was made to determine if there were any significant differences on any of the variables in this study (see Appendix G). Significant differences were found for agility. The self-defence group was significantly faster than the other two groups on the agility run test (M=21.36; SD=1.17). There was also a significant difference found for resiliency. The self-defence group scored significantly lower on resiliency (M=41.95; SD=16.99). This means that care will have to be taken when drawing any conclusions about differences that may be found among groups on either agility or resiliency.

Research Question One

1. Will participation in a movement program lead to changes in the movement competence of adolescent girls from a low socio-economic environment?

The results of the Wilcoxon Signed Ranks Test examining within group changes show that participants in the movement program A-group (Biodanza) achieved significant improvements in three of four tests of movement competence (see Table 5). Participants in movement program B-group (self-defence) achieved a significant deterioration in two of four variables of movement competence (see Table 6), and the participants in the control group achieved a significant improvement in one of four variables of movement competence (see Table 7).

Table 5

Movement competence scores for program A-group (Biodanza)

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Vertical Jump Pre	19	20.58cm	5.20	10.0	30.0	.005**
Vertical Jump Post	19	23.89cm	5.23	16.0	33.0	
20m Sprint Pre	19	4.36s	.28	3.89	5.01	.003**
20m Sprint Post	19	3.98s	.36	3.15	4.83	
Agility Run Pre	19	23.98s	1.50	20.52	26.50	.001**
Agility Run Post	19	22.02s	1.58	19.10	25.30	
Cricket Ball Throw Pre	19	23.85m	4.62	15.0	31.20	.500
Cricket Ball Throw Post	19	24.2m	4.37	17.2	31.70	

** (p<0.01), *(p<0.05)

Table 6

Movement competence scores for program B-group (self-defence)

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Vertical Jump Pre	22	22.41cm	5.33	12.0	32.0	.169
Vertical Jump Post	20	24.35cm	4.33	15.0	33.0	
20m Sprint Pre	22	4.28s	.51	3.40	5.77	.000*
20m Sprint Post	20	4.81s	.45	4.17	5.82	
Agility Run Pre	22	20.57s	1.20	18.84	23.59	.002*
Agility Run Post	20	21.36s	1.17	19.4	23.50	
Cricket Ball Throw Pre	22	28.42m	7.09	16.6	41.50	.113
Cricket Ball Throw Post	20	30.64m	6.81	20.0	49.90	

*(p<0.05)

Table 7

Movement competence scores for the control group

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Vertical Jump Pre	22	26.05cm	12.53	12.0	64.0	.150
Vertical Jump Post	22	25.81cm	5.97	13.0	36.0	
20m Sprint Pre	22	4.34s	.31	3.78	5.00	.118
20m Sprint Post	22	4.20s	.47	3.64	5.49	
Agility Run Pre	22	24.35s	1.96	20.98	28.41	.016*
Agility Run Post	22	23.03s	1.20	20.20	26.30	
Cricket Ball Throw Pre	22	25.21m	3.69	18.80	32.10	.465
Cricket Ball Throw Post	22	25.74m	3.59	18.90	30.90	

*(p<0.05)

For participants participating in Biodanza, significant improvements were achieved for vertical jump (.005), sprinting ability (.003) and agility run (.001). In other words, the participants completing the Biodanza program jumped significantly higher, ran significantly faster and completed the agility run in significantly less time than before the intervention program.   Because the participants in this group improved on three of the four tests of motor competence, it can be concluded that a movement program like Biodanza that focuses on self expression through movement can have a positive effect on movement competence. The reasons for these changes could be:

- Biodanza movement patterns challenged body management and changing directions, which could account for the improvement on the agility run test. Agility requires dynamic balance and speed as well as coordination and although the participants did not move at 100% speed during Biodanza sessions, they did learn how to manage their bodies while changing direction frequently.

- The increases in sprinting ability could be attributed to the participants participating in a movement program (being more physically active). During an interview with the principal of the school prior to the commencement of the intervention program, he was reported that these learners were not involved in school sport because primary school sport did not cater for the u/14 age category.

- The increases in vertical jump could be attributed to the content of the Biodanza program, which included quite a bit of jumping and elevation as part of the performance of locomotor sequences.

The significant improvements by the Biodanza group also confirm that movement competence can be achieved in a non-competitive environment. This is compatible with Gill's (1993) suggestion that researchers and practitioners remember that achievement is not the exclusive property of competitive settings.

The self-defence group achieved significant changes in sprinting ability (.000) and agility (.002), however, these changes were not improvements, but

rather deteriorations.   Participation in the self-defence program appears to have made them slower and less agile. The reasons for these changes could be:

- Practice of the various skills for self-defence was often done from a standing position, not from a moving position. It is possible that the lack of practice of locomotor skills (*e.g.,* running) during the sessions contributed to an emphasis on other movement abilities, to the detriment of running speed.

- Although many of the self-defence skills gave participants the opportunity to practice the use of space and body management, practice was usually from a standing position. The agility test used in this research relied on changing direction while running as well as body management. Running and then changing direction was not a part of the self-defence content, so once again, a lack of specific practice and focus on other abilities may have been to the detriment of agility (as measured by the agility run test).

- It must also be remembered that the self-defence group was from a different school. They had more movement competence before the commencement of the intervention program and this may have prevented them from improving.

These findings underscore the care that must be taken when selecting the type of a movement intervention program as well as the assessment instruments. Movement competence is the product of practice, and different types of movement programs will be selective in the movement abilities they develop. In this study, self-defence does not appear to have made a positive contribution to movement competence.

The only significant difference found in movement competence for the control group was for agility run test (.016). The control group was not exposed to any movement program and it would not be expected that they would improve in their performance on any test of movement competence. The reasons for this improvement could be:

- Agility is a complex movement variable. There is debate in the sport science community surrounding a precise definition for agility.   The term is applied to a broad range of sport contexts with great inconsistency (Sheppard & Young, 2006). Agility appears to be more than a simple combination of dynamic balance, speed and coordination, which means that the interpretation of the results of agility tests may not be straight-forward. Different factors may impact on certain agility tests, such as the changes in the height of participants, changes in their weight and the surface on which the test is taken. The surface for the agility test in this study was kept constant, however, no other factor was controlled.

- This result also raises the question about the possible effect of familiarity with the testing procedures on the performance of the participants in the control group. Prior to this research, the participants had never been exposed to formal motor and physical testing. With the post-testing opportunity, it is possible they had a better idea of how to perform the agility test. Of course, if test familiarity was a factor, it should have impacted on the other two groups. This was not the case. The Biodanza group's agility scores improved and the self-defence group's scores dropped.

The answer to Research Question One is that participation in the Biodanza program led to significant improvements in the movement competence of adolescent girls from a low social-economic environment. Participation in the self-defence program did not.

Research Question Two

2. Will participation in a movement program result in any changes in the self-esteem of adolescent girls from a low socio-economic environment?

The Self-Perception Profile for Children (Harter, 1985) was used to measure self-esteem. The instrument contains scores for five separate subscales as well as global self-worth. Each subscale represents participants' domain-specific judgments about their competence as well as their global perception of

their self-worth. The data from this assessment are presented and analyzed according to the domains of perceived competence as well as sense of global self-esteem.

According to the results of the Wilcoxon Signed Ranks Test examining within group changes, the participants in the Biodanza program reported no significant changes for any of the sub-domains of perceived competence or for global self-esteem (see Table 8). Participants in the self-defence program reported a significant improvement in one sub-domain of perceived competence (see Table 9). No changes were found among participants in the control group (see Table 10).

Table 8

Perceived competence scores for program A-group (Biodanza)

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Global self-worth Pre	19	2.94	.60	1.67	4.00	.126
Global self-worth Post	19	2.68	.63	1.50	3.83	
Scholastic Competence Pre	19	2.53	.55	1.33	3.50	.932
Scholastic Competence Post	19	2.48	.66	1.33	3.50	
Social Acceptance Pre	19	2.90	.71	1.67	4.00	.600
Social Acceptance Post	19	2.78	.49	2.17	3.50	
Athletic Competence Pre	19	2.42	.49	1.67	3.33	.431
Athletic Competence Post	19	2.23	.50	1.50	3.00	
Physical Appearance Pre	19	2.97	.80	1.50	4.00	.089
Physical Appearance Post	19	2.73	.86	1.00	4.00	
Behavioral Conduct Pre	19	2.75	.49	1.50	3.50	.366
Behavioral Conduct Post	19	2.63	.63	1.17	3.50	

*(p<0.05)

Table 9

Perceived competence scores for program B-group (self-defence)

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Global self-worth Pre	22	2.56	.66	1.00	3.67	.465
Global self-worth Post	21	2.50	.69	1.50	3.50	
Scholastic Competence Pre	22	2.61	.56	1.50	3.83	.048*
Scholastic Competence Post	21	2.81	.41	1.50	3.33	
Social Acceptance Pre	22	2.87	.47	1.83	3.67	.556
Social Acceptance Post	21	2.92	.47	2.00	3.83	

	N					
Athletic Competence Pre	22	2.49	.50	1.33	3.50	.642
Athletic Competence Post	21	2.55	.46	1.83	3.33	
Physical Appearance Pre	22	2.59	.68	1.33	4.00	.977
Physical Appearance Post	21	2.64	.75	1.83	3.33	
Behavioral Conduct Pre	22	2.63	.43	1.83	3.50	.930
Behavioral Conduct Post	21	2.65	.61	1.33	3.67	

*(p<0.05)

Table 10

Perceived competence scores for participants in the control group

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Global self-worth Pre	22	2.83	.61	1.33	3.83	.979
Global self-worth Post	22	2.83	.66	1.83	4.00	
Scholastic Competence Pre	22	2.42	.45	1.67	3.50	.061
Scholastic Competence Post	22	2.60	.53	2.00	4.00	
Social Acceptance Pre	22	2.66	.51	1.50	3.50	.612
Social Acceptance Post	22	2.70	.52	1.83	3.83	
Athletic Competence Pre	22	2.46	.45	1.67	3.83	.418
Athletic Competence Post	22	2.58	.34	2.17	3.33	
Physical Appearance Pre	22	2.78	.69	1.33	4.00	.224
Physical Appearance Post	22	2.92	.61	1.83	4.00	
Behavioral Conduct Pre	22	2.57	.55	1.50	4.00	.871
Behavioral Conduct Post	22	2.58	.47	1.83	3.33	

*(p<0.05)

The results of the Wilcoxon Signed Ranks Test examining within group changes show that for the participants participating in the self-defence program, a significant improvement was found for perceived scholastic competence. Piek, Baynam and Barret (2005) examined the impact of fine and gross motor ability on self-perceptions of male and female children and adolescents. They found that the level of movement ability had a positive influence on perceived scholastic competence. Although the self-defence group did not improve on their movement competence test scores, their participation may have developed other movement abilities that may be related to positive perceptions of scholastic competence. It is also possible that because this group was not compared to another group within the same school other (academic) programs may have affected perceived scholastic competence.

The lack of significant changes in either the Biodanza group or the control group (and almost no change for the self-defence group), leaves the following answer to Research Question Two: Participation in the movement program presented in this study did not lead to substantial changes in the self-esteem of adolescent girls from a low socio-economic environment. The reasons for this could be due to the small sample or the lack of cultural adaptation of the measuring instrument as also mentioned by Malete (2004). However, if one looks at the history of interest in self-esteem development through participation in physical education, Hellison (1973) may have identified some clues. His position was that the potential to bring about positive changes in students' self-esteem was enhanced if the following three factors were present:

1. The teacher or coach holds a position of prestige among the learners.

2. The activities in the program are valued by the culture of the learners.

3. The learners have volunteered to be involved, *i.e.,* they have chosen to participate.

In this study, the teachers/coaches of the two groups did not have a previous position or reputation at the school. There is no way of knowing for certain if the culture of the learners supported either Biodanza or self-defence as valued movement forms, although the personal experience of the investigator would lead to the thought that the dance-based activities would be popular with the adolescent girls from this particular cultural group. None of the learners from any of the groups volunteered. In other words, Hellison (1973) would not have seen the two intervention programs presented in this study as likely candidates for impact on self-esteem. It also can be noted that no special teaching methods or strategies were employed to specifically enhance self-esteem or any of the other dimensions of perceived competence. This could be considered a pedagogical reason why changes did not occur as a result of participation (Hellison & Templin, 1991).

The expressed purpose of this study was to look at movement competence as a possible mediator of self-esteem and perceived competence. Pedagogical variables were not introduced in order to keep the focus on the two different kinds

of content. Within that limitation, the answer to this research question is that it does not appear that either program contributed to the development of the self-esteem of the participants, as measured by the Self-Perception Profile for Children (Harter, 1985). Additional insights about the perceived benefits of participation in the intervention programs were generated by the reports from the focus group interviews and are described in the last section of this chapter.

Research Question Three

3. Will participation in a movement program result in any changes in the resiliency of adolescent girls from a low socio-economic environment?

The results of the Wilcoxon Signed Ranks Test examining within group changes show that none of the groups experienced a significant change in resiliency (see Table 11). It is interesting to note that the mean scores for resiliency did go up for all the groups. It must also be noted that the Connor-Davidson Resilience Scale (CD-RISC) scale has acceptable credibility but needs further study in terms of the assessment of adolescents (Ahern, Kiehl, Sole & Byers, 2006).

Table 11

Resiliency scores for all three groups

Variable	N	Mean	SD	Min	Max	Sig (2 tailed)
Group A Biodanza Pre	19	40.84	16.64	23	82	.527
Group A Biodanza Post	19	53.68	65.16	9	67	
Group B Self-defence Pre	22	34.27	18.97	5	70	.251
Group B Self-defence Post	21	41.95	16.99	15	77	
Control Group Pre	22	49.95	21.58	16	91	.717
Control Group Post	22	74.90	41.16	12	87	

*(p<0.05)

Henley and Colliard (2005) proposed that participation sport and play activities can be an effective medium for helping children and youth overcome trauma. They believed that participation can help young people to access and activate innate resilience, a critical ingredient for strengthening, healing and protecting individuals in times of extreme stress. Allen, Cox and Cooper (2006) stated that developing the ability to tap into resiliency was directly related to the ability of adolescents to successfully make the transition to adulthood. They also endorsed participation in recreation and play activities as a means for helping young people through the difficult period of adolescent development.

There is some evidence that resiliency may be a product of participation in a movement competence program. Louw (2007) found that involvement in a functional movement competence program over a three-month period was not sufficient to achieve significant improvements in the resilience of elderly women. However, when the same program was extended to a 12-month period, significant improvements in resiliency were achieved. This research confirmed the position of the American Psychological Association (2004) that the development of resilience is a personal journey and an ongoing process that requires time and effort.

The literature described resiliency as more than just the ability to cope physically within an environment (Foster, 1997; Neill 2006; Waite & Richardson, 2004). The American Psychological Association (2004) listed these additional dimensions of resiliency:

- Having the capacity to make realistic plans and take action to execute them.

- Holding a positive view of oneself and confidence in own strengths and abilities.

- Having good communication and problem-solving skills.

- Being able to manage strong feelings and impulses.

The answer to this research question is that neither movement program was effective in the development of resiliency among adolescent girls from a low socio-economic environment. In order to develop resiliency, a comprehensive approach may be more successful than a unilateral approach. Factors such as a supportive community and unconditional acceptance of a young person by an older person have been mentioned for inclusion is such an approach (Henley & Colliard, 2005; Mundy, 1996).

Research Question Four

4. Will there be any relationship found between either movement competence and self-esteem or movement competence and resiliency among adolescent girls from a low socio-economic environment?

Spearman's correlations were calculated among all of the variables of movement competence, perceived competence and resilience for the total group. In this section, only the correlations between movement competence and self-esteem and movement competence and resiliency will be presented. The correlations among all variables can be found in Appendix H.

The correlations for the total group (N=63) between movement competence and self-esteem and movement competence and resilience are presented in Table 12.

Table 12

Post-test correlations for the total group (N = 63)

Movement Competence	Global Self-worth	Social Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioral Conduct	Resilience
Vertical Jump	-.208	-.082	-.143	.062	-.247	-.001	.164
20m Sprint	.029	**.280***	.169	.095	.076	.120	-.130
Agility Run	.130	-.236	-.233	-.005	.165	-.121	-.044
Cricket Ball Throw	-.043	**.303***	.165	**.352****	-.031	.125	.050

**Correlation significant at the 0.01 level
 *Correlation significant at the 0.05 level

The positive correlations found between the cricket ball throw and perceptions of social competence (.303), the cricket ball throw and perceptions of athletic competence (.352) and the 20m sprint and perceived social competence (.280) could be interpreted as positive signs by advocates of the development of movement competence as a means to promote positive self-esteem. However, correlations must not be mistaken as causal relationships. It can be noticed that these correlations were not identified when the results of the individual groups were calculated.

Research Question Five

5. Will participation in one movement program have more of an effect on the movement competence, self-esteem and resiliency of adolescent girls from a low socio-economic community, than participation in the other program?

In order to establish the similarity among the three groups, an initial comparison was made to determine if there were any significant differences on any of the variables in this study (see Appendix G). Significant differences were found for agility. The self-defence group was significantly faster than the other two groups on the agility run test (M=21.36; SD=1.17). There was also a significant difference found for resiliency. The self-defence group scored significantly lower on resiliency (M=41.95; SD=16.99). This means that care will have to be taken when drawing any conclusions about differences that may be found among groups on either agility or resiliency.

To answer Research Question Four, the Biodanza and self-defence groups were compared. The results (Table 13) indicate that there were significant differences between the groups for sprinting ability (.000) and cricket ball throwing (.000) (see Tables 5 and 6 for the mean scores for each group).

Table 13

Differences in change scores for movement competence, perceived competence and resilience scores between group-A (Biodanza) and group-B (self-defence)

Variable	N	Symp. Sig (2 tailed
Vertical Jump Post-test	39	.272
20m Sprint Post-test	39	**.000****
Agility Run Post-test	39	**.000****
Cricket Ball Throw Post-test	39	.164
Global Self-worth Post-test	40	.439
Scholastic Competence Post-test	40	.241
Social Acceptance Post-test	40	.522
Athletic Competence Post-test	40	.430
Physical Appearance Post-test	40	.285
Behavioural Conduct Post-test	40	.586
Resilience Post-test	40	.207

**(p<0.01)

- The Biodanza group performed significantly better than the self-defence group on the sprint test and the agility run test after the intervention program. This result could be because Biodanza involved locomotive skills at various intensities and self-defence did not.   As a result the participants became more competent at these types of movements.

A comparison between the movement program B-group (self-defence) and the control group (Table 14) show significant differences for sprinting ability (p<0.01) and agility run (p<0.01). A look at the mean scores reported in Tables 6 and 7, indicates that:

- Participants from the control group improved significantly on the sprint test and the agility run test. This may have occurred due to the self-defence group having the higher score before the commencement of the intervention program or them becoming slower after the intervention program and the control group performing better on the tests. It does also

raise the question about participants being motivated to perform better because they are in a test or assessment situation.

Table 14

Differences in change scores for movement competence, perceived competence and resilience scores between group-B (self-defence) and the control group

Variable	N	Symp. Sig (2 tailed
Vertical Jump Post-test	41	.403
20m Sprint Post-test	41	**.000****
Agility Run Post-test	41	**.000****
Cricket Ball Throw Post-test	41	.389
Global Self-worth Post-test	41	.494
Scholastic Competence Post-test	41	.823
Social Acceptance Post-test	41	.834
Athletic Competence Post-test	41	.773
Physical Appearance Post-test	41	.378
Behavioural Conduct Post-test	41	.865
Resilience Post-test	41	.210

**(p<0.01)

The results for movement program A-group (Biodanza) were then compared to the control group (see Table 15). The results indicate that there were significant differences found between the two groups for sprint test. The Biodanza group improved more than the control group. This may be due to their involvement in physical activity and they were exposed to a movement program that consisted on locomotor skills.

Table 15

Differences in change scores for movement competence, perceived competence and resilience scores between group-A (Biodanza) and the control group

Variable	N	Symp. Sig (2 tailed
Vertical Jump Post-test	39	.924
20m Sprint Post-test	39	**.025***

Agility Run Post-test	39	.323
Cricket Ball Throw Post-test	39	.745
Global Self-worth Post-test	39	.230
Scholastic Competence Post-test	39	.350
Social Acceptance Post-test	39	.507
Athletic Competence Post-test	39	.296
Physical Appearance Post-test	39	.068
Behavioural Conduct Post-test	39	.480
Resilience Post-test	39	.877

*(p<0.05)

Research Question Six

6. What were the perceptions of the subjects about what they experienced during participation in the movement programs?

The researcher used focus group interviews to gather the qualitative data. Once a transcript was made of the discussions that emerged from the focus groups, a method called "consensual validation" was used to analyze and categorize the responses of the subjects (Scanlan *et al*., 1991) (see Appendix I). Three themes were identified through analysis: Learning, emotional responses and negative factors.

Theme 1: Learning

The results of the clustering of quotations around the theme of learning are presented in Figure 6.

Positive Personal Development

The subjects from both groups identified self-confidence as one of the outcomes of their participation in a movement program. For the subjects in the self-defence group, self-confidence was the only dimension of personal development that they mentioned.

"You learn how to defend yourself."

"It improved my self confidence…initially I thought I was too small to overpower my opponent but later I learned how to do it. Once I achieved that it felt like it could do anything."

"I have the confidence to apply the techniques if I find myself in a dangerous situation."

This positive impact appears to have occurred despite the lack of improvements in the movement competence tests (in fact, there was a deterioration in the performance on the sprint and agility tests).

The subjects in the Biodanza group described a much broader scope in terms of what they learned. They felt they developed as persons. In addition to self-awareness, they spoke of developing respect for others, as well as feelings of love, honesty and trust.

"I learned that when somebody else speaks then I need to be quiet."

"To respect the person that is speaking."

"To respect others."

"You need to cooperate with others."

"To be honest."

"How to communicate with each other."

"It taught me a lot of myself…I learn to love myself and to respect myself…"

"I learned things about myself that I wasn't aware of."

"I learned self-confidence, self-respect, discipline."

"I felt good about myself."

"If I felt sad I could express myself in these sessions."

"I felt loved during these sessions."

"I learned self-confidence."

It may also be remembered that the Biodanza group achieve improvement on three out of four tests of movement competence. Biodanza appears to have been a very positive growth experience.

Interest in Future Learning

Subjects in both groups discussed future participation interests. The Biodanza subjects were all keen to pursue participation in other dance forms, as well as continue with Biodanza.

"Dance classes in kwaito, R 'n B, jazz, ballroom."

"Drawing or art classes."

The subjects in the self-defence group were interested in learning other sports in the future and did not mention an interest in learning more self-defence skills.

"Karate…I want to learn the different techniques."

"I would like to modern dancing and hip hop."

Personal and Motor Skills

The Biodanza group spoke about developing additional personal skills, but not motor skills during their experience.   The specifically identified the ability to communicate and express themselves; to have self-discipline and deal with anger; and to cooperate with others.

"You can't stay angry with someone for ever."

"It isn't easy to hold hands with someone you were angry with."

The self-defence group was opposite to the Biodanza group. They reported that they developed motor skills, but did not mention any personal skills they may have learned.   They were quite specific that they had learned to defend themselves.

"It doesn't matter how big the person is or small I am, I can defend myself."

Conclusions about Learning

In listening to the subjects from both programs, those who participated in Biodanza do seem to have had a richer opportunity for the development of self-esteem and resilience. The results of the interviews support the claims by Steuck (cited in Bateman, 2004) that participants in Biodanza would experienced the following:

- Higher self-efficacy.

- Improved problem-solving strategies.

- Improved anger regulation.

- Less fear of contact.

- Increased ability to say 'no'.

- More optimism.

- A more relaxed attitude.

- Greater autonomy.

- Improved psychological health.

The subjects in the self-defence group had positive feelings about their experience, but it appears that the program was narrowly focused on their relationship with the motor skills of self-defence, rather than on their development as persons.

Movement Program A-group (Biodanza)	Movement Program B-group (Self-Defence)

Respect for others

Self-Confidence

Love, honesty, trust

Self-Awareness

Positive personal development

Self-expression

Communication

Dealing with anger

Cooperation

Discipline

Personal skills

Learning

Positive personal development

Self-confidence

Other dance forms

Interest in future learning

Interest in future learning

New sports

Motor Skills

To defend self

Figure 6

Theme 1 Learning

Theme 2: Emotional Reponses

The results of the clustering of quotations around the theme of emotional responses are presented in Figure 7.

Sources of Enjoyment

Both groups specifically described how much they had enjoyed and appreciated their teachers. The Biodanza group not only found the experience interesting, but were enthusiastic about the music and the opportunity to dance. They enjoyed not only the dancing but that every dance had a meaning. They especially enjoyed the dances that had a fast beat.

"We loved "Bomba"…it was a lively song."

"It wasn't only a dance…each dance had a meaning."

"The dance had a purpose."

"I enjoyed it very much."

"It was interesting."

The self-defence group reported that enjoyed becoming more skilful. Some subject shared that the idea that they anticipated enjoyment would be an outcome if they were able to participate in the future in self-defence competitions.

"I enjoyed the SD but I thought it would be later in the afternoon."

"I thought we would compete against other schools."

"Throwing your opponent onto the floor."

"I enjoyed seeing my opponent fall."

Both groups had reported that they enjoyed their teachers:

"I appreciated the fact that Tony was at every session. It didn't matter if it rained or if there were few girls at the session."

"Marieta and Ingrid were very friendly."

Negative Emotions

No negative emotions were mentioned by the Biodanza group. Only the subjects in the self-defence group reported negative emotional responses. They specifically identified boredom with the program on some days. This could be due to the repetitive nature of the class which is necessary if the subjects to learn the precise techniques of self-defence.

"It became boring."

"One time I was sick and I also thought that it was going to be the same activities over and over."

"It was boring…sessions had no life."

Theme 3: Negative Factors

The final theme identifies the negative factors that may have impacted on the participation (see Figure 7). Both groups reported sickness and hunger as reasons why they did not attend some of the session. Because these two factors were expressed in all interviews, they must definitely be considered when presenting movement programs in low-socio economic environments.

"I was hungry so I would rather go home to eat."

"I was hungry and rather went home to eat."

Movement Program A-group (Biodanza)	Movement Program B-group (Self-Defence)

Emotional Responses

Movement Program A-group (Biodanza):
- Meaning of dance
- Music
- Teachers
- Interesting content

→ Sources of Enjoyment

Movement Program B-group (Self-Defence):
- Sources of Enjoyment
  - Skill performance
  - Teacher
  - Leads to future programs
- Negative Emotions
  - Boredom B1, B6

Negative Factors

Movement Program A-group (Biodanza):
- Sick
- Hunger
- Work at home
- Other activities

→ Negative impact on participation

Movement Program B-group (Self-Defence):
- Negative impact on participation
  - Sick
  - Hunger
  - Venue
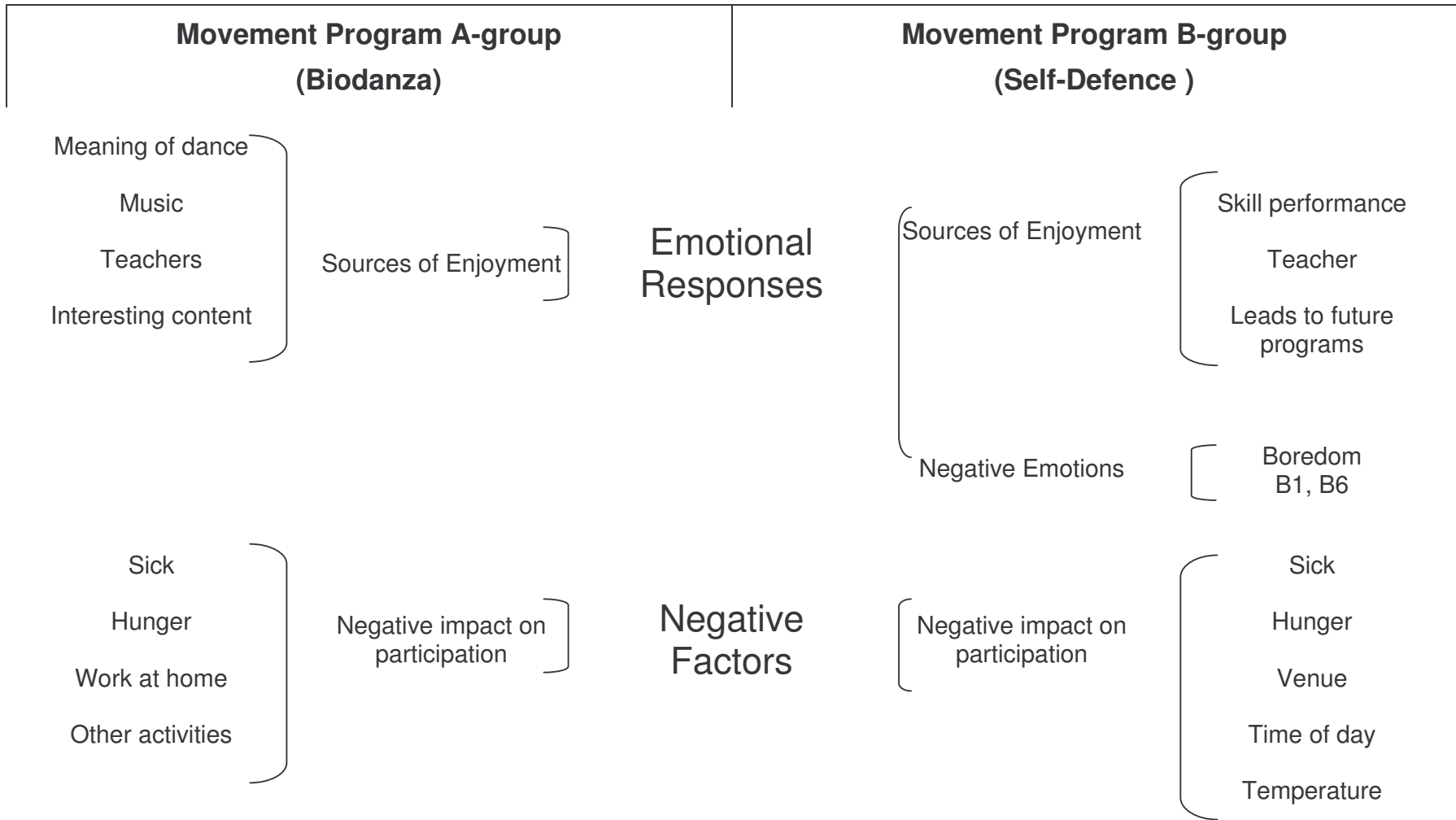 - Time of day
  - Temperature

Figure 7

Theme 2 Emotional Responses and Theme 3 Negative Factors

Subjects from the Biodanza group also reported that they sometimes had to help with domestic chores or they needed to participate in other activities.

"I have lots of work at home (chores)."

"My mother sent me to the farm to collect some things."

The subjects who participated in the self-defence sessions indicated that the time the classes were presented and the venue were not always ideal and on some days the temperatures were too high to be physically active.

"I would prefer to do the sessions at another venue. The surface was too slippery.

Sometimes it was too hot."

Summary

The following points summarize the findings of the process of quantitative data collection in study:

- Participants in the Biodanza program improved on three of the four motor competence tests. It can be concluded that a movement program that focuses on self-expression through movement can have a positive effect on movement competence. The significant improvements by this group also confirm that movement competence can be achieved in a non-competitive environment.

- Participants receiving self-defence sessions lost some of their movement competence as measured by the tests used in this study. They scored significantly lower on two of the four motor competence tests. Participants in the control group improved on one test of movement competence.

- Participation in the movement competence programs did not appear to have an effect on perceptions of competence, the indicators of self-esteem adopted for this study. Only one significant difference was found.

The participants in the self-defence program achieved a significant improvement in their perceived scholastic competence.

- No significant changes in resiliency were achieved by any of the groups.

- There were positive correlations found for the total group between the cricket ball throw and perceptions of social competence; the cricket ball throw and perceptions of athletic competence and the sprint test and social competence.

- The Biodanza group was more effective than the self0defence group and control group in developing movement competence.

   The researcher used focus group interviews to gather the qualitative data. The analysis identified three themes for categorizing the comments made by the participants regarding their participation in the movement competence programs: Learning, emotional factors and negative factors.

- Both groups made comments about the value of their participation in terms of positive personal development. Both groups also expressed an interest in future learning. The Biodanza group emphasized their learning of personal skills as a result of their participation in the program, while the self-defence group only mentioned their acquisition of motor skills.

- In terms of emotional responses, both groups identified several sources of enjoyment. They were in agreement that contact with their teachers had been very positive. The Biodanza group were also very excited about their opportunity to experience the meaning of dance and enjoyed the music. Although participants in the self-defence group identified becoming more skilful as a source of enjoyment, some of the participants specifically identified feelings of boredom during some of the self-defence sessions.

- When asked about negative factors associated with the programs, some of the participants from both groups identified being sick and being hungry as reasons for their occasional lack of participation.

Some of the participants in the Biodanza group reported interference from other activities, such as the need to go work at home. The participants in the self-defence group were also concerned about their venue, the time of day when the program was presented, and the temperature at the venue.

Chapter Five

Conclusions and Recommendations

The purpose of this study was to examine the affects of two different movement programs on movement competence, self-esteem and resiliency in adolescent girls from a low-socio economic environment. A specific focus was to determine if there was a relationship between movement competence and either self-esteem or resiliency.   Both quantitative and qualitative data were gathered. The Self-perception Profile for Children (Harter, 1985) and the CD-RISC (Conner & Davidson, 2003) were used to measure self-esteem and resiliency. Focus group interviews were used to gather qualitative data. Conclusions about each program are made in the following section based on these two different types of information. In order to put the conclusions in a format more easily related to professional practice, the programs will be discussed separately and the participants in the study will be referred to as "girls," since gender may be a critical consideration in future explorations of this topic. Recommendations are then made for future research.

Conclusions

The Biodanza Program

Biodanza is a group activity and works with music, movement and emotion to stimulate the potential for joy, creativity and connecting with others. Some of the benefits claimed from participation in Biodanza are improved self-efficacy and psychological well-being (Bateman, 2004).

Movement Competence

Significant Improvements occurred in three of the four movement competence tests. The girls also improved on the cricket ball throwing test, although the improvement was not significant. The study supports the conclusion that although Biodanza focuses on self-expression through movement, the experience can have a positive effect on movement competence.

The indirect teaching methods employed by the Biodanza teacher may have promoted the development of movement competence. Indirect styles are associated with openness to student-input, questioning students to raise their understanding of movement, and including students in instructional decisions. Indirect styles have been shown to be effective when teaching open skills to intermediate level performers (Magill, 2003). The movement skills used in Biodanza are open in that the students spontaneously created movement sequences, rather than practicing the same sequences over and over again.

When the groups were compared, the results showed that the Biodanza group was more effective in terms of movement competence. They improved significantly in sprinting ability and agility when compared to the self-defence group. The Biodanza group also improved significantly in sprinting ability when compared to the control group.

Self-esteem

The Biodanza group reported no changes either for any of the sub-domains of perceived competence or for global self-esteem as measured by Harter's (1985) instrument. The apparent lack of impact on self-esteem despite the improvements in movement competence must be put in the broader context of the reports generated from the focus group interviews. According to the girls, they learned to respect each other and they felt that their self-confidence improved. The fact that they mentioned that their self-confidence improved is an indication that changes occurred in how they perceived themselves after the intervention program.

It is important to note that the Biodanza group identified a variety of learning outcomes associated with positive personal development. The other personal skills reported by the Biodanza group were:

- Physical expression through movement.

- Communication.

- Anger management.

- Cooperation.

- Discipline.

These are important personal (life) skills for the adolescents and may contribute to their capacity to deal with the challenges in their at-risk environment (Zealand, 2005).

Resiliency

None of the groups showed a significant change in resiliency. It may be possible that participation in the movement sessions for longer than three months could have produced significant changes (Louw, 2007). During the group interviews, the girls said that they had experienced love, honesty and trust during the Biodanza sessions. According to the American Psychological Association (2004), relationships that create love and trust can strengthen resilience. It can be concluded that there may be potential within the Biodanza program to cultivate resiliency, especially if the program can provide role models for the girls (American Psychological Association, 2004),

The Self-Defence Program

The aim of the self-defence program was to improve the girls' movement competence by teaching them the specific physical skills needed to become competent in self-defence. This should equip them with skills needed to protect themselves physically if ever they were in a dangerous situation.

Movement Competence

No significant improvements were achieved in movement competence for the self-defence group, in fact, the significant changes that occurred showed that the group deteriorated in both sprinting ability and agility. This means that the girls who received the self-defence sessions became slower runners. This finding reminds us that even underlying abilities are influenced by the specificity of practice (Magill, 2003). It is possible that other movement competence abilities were developed during participation in self-defence sessions. These results are also a reminder that the movement variables selected for testing should be

compatible with the content of a movement program in order to make an accurate assessment of progress.

Although the quantitative analysis showed no improvement in movement competence, reports from the focus group interviews revealed that the girls in the self-defence intervention group enjoyed becoming skilful. Because self-defence is a collection of semi-closed skill techniques, it is likely that the instructor used the methods of direct instruction.   Direct instruction involves demonstrations, imitation and repetition of the movement patterns. These methods have been found to be effective in teaching specific skills to beginners, but do not develop a broad base of underlying movement capabilities (Magill, 2003). Some of the girls found the self-defence session to be a bit boring, which may be because direct instruction requires so much repetition. When compared to the control group, the self-defence group performed significantly weaker than the control group. This may be attributed to the fact that the control group improved slightly and the self-defence group did not show any signs of improvements on the post-test.

Self-esteem

The girls in the self-defence group reported a significant improvement in one sub-domain of perceived competence - perceived scholastic competence. Since the girls felt that they became more physically skilful, perhaps that had an impact on the self-perception, although it is not clear why perceived scholastic competence would be the dimension. Piek *et al.* (2005) found that the children with higher perceived scholastic competence had better fine motor skills, but the self-defence sessions did not develop fine motor skills. Another reason may be that an academic program was introduced in the school and this impacted their perceptions of academic competence.

Resiliency

The self-defence group did not experience significant changes in resiliency but their mean score improved. A correlation was found between the 20m sprint and resiliency (p<0.01). The girls with the faster sprint times had higher scores for resiliency. There is no clear reason for this relationship.

There were positive correlations found for the total group between the cricket ball throw and perceptions of social competence; the cricket ball throw and perceptions of athletic competence and the sprint test and social competence. These correlations could be interpreted as positive signs by advocates of the development of movement competence as a means to improve positive self-esteem but the correlations must not be mistaken as causal relationships.

Recommendations

The use of qualitative research in this particular study proved to be invaluable. Where the quantitative analysis showed no improvement in self-esteem, the focus group interviews revealed that the girls from both groups felt they become more self-confident, and the girls in the Biodanza group believed that they had learned other valuable personal skills. The investigator believes that future research in these kinds of environments requires a qualitative approach due to the unique challenges faced by the adolescents in these communities. Other important factors to consider are basic human needs. Hunger, in particular was a concern for the investigator because most of the times when the participants did not arrive for a session it was due to them being hungry. As hunger is a basic need it needs to be satisfied if there is any hope of these youth experiencing self-actualization or for that matter any sense of well-being.

The following directions for future research are recommended, based on the outcomes of this study:

- If Harter's (1985) instrument is considered for future use, the subscales of physical appearance and behavioral conduct warrant cultural adaptations. There were black (African) and colored (mixed race) girls in the current study. It is commonly known that physical appearance is perceived differently by the two groups. Although both groups are influenced by Western society, the black community still regards the fuller figure as appealing.

    Behavioral conduct may also benefit from interpretation with the context of low socio-economic environments. For example, if these adolescents

are involved in gang activities then their reference for acceptable behavior will be the gang members. What is regarded as appropriate in the gang may not be perceived as appropriate by the rest of society.

- Youth from low socio-economic environments may have very different life experiences. They may not be accustomed to self-report instruments and they may not be used to performance tests. Their pre-test scores in particular may not accurately reflect their status, and a learning effect on their post-test performances might falsely indicate improvements.

- The behavior of the teachers/instructors/coaches in any intervention program must be carefully monitored, because that behavior has a significant impact on how students experience a program. In this study, the instructor of the Biodanza sessions reported that she did quite a bit of talking with the girls in her group about their lives and how they felt about their lives. She is a Clinical Psychologist by profession. Because Biodanza is an expressive movement program, opportunities to discuss feelings were presented naturally. The Biodanza instructor was also upset to find out some of the girls were hungry, so she brought extra food for the girls. This may have been interpreted by the girls as a sign that she cared which in turn could have influenced how they felt about the program. Although these factors cannot be controlled by investigators, they can be monitored or recorded so that their impact can be understood.

  From this experience with the Biodanza teacher, it is apparent that pedagogical interventions must be considered as an integral part of content/program decisions, when studying how physical activity may or may not enhance self-esteem and resiliency.

In terms of future research topics, the investigator is particularly interested in resiliency. More research is needed to understand the underlying mechanisms that operate to promote the development of resiliency. For at-risk youth, low self-esteem and low self-confidence are common characteristics (Jessor, 1989).

Resiliency also had been identified as a critical quality for "survival" in at-risk environments.

Concluding Remarks

The last theme from the qualitative analysis of the focus group interviews identified negative factors experienced by the girls during their participation in this study. These factors deserve attention here in terms of practical implications for future programs implemented in low-socio economic environments.

- Hunger.

  Some of the girls (from both groups) reported that they had missed some of the movement sessions because they were too hungry to participate. When the investigator became aware of this problem later in the program the schools were approached to assist with an after school feeding scheme. Hunger is basic need and a realistic concern when providing physical activity opportunities to adolescents from a low socio-economic environment.

- Facility problems.

- Expectations from home: Some participants missed sessions because they needed to do domestic chores which sometimes included taking care of younger siblings. Instructors should also be aware that participants might bring these younger siblings to the sessions so that they do not miss out on the activity.

  These two factors have been identified frequently as presenting challenges to presenting programs, and specifically to sustaining participation in programs (Scanlan, Carpernter, Schmidt, Simons & Keeler, 1993). It is almost impossible to sustain sport programs if suitable facilities are not available and/or social expectations interfere with involvement.

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Appendix A
Testing Protocols

Vertical Jump

PURPOSE

The vertical jump task measures the ability to spring in a vertical direction. Explosive power in the legs is related to performance in sports such as sprint cycling and weightlifting.

EQUIPMENT

- Powder chalk (talcum powder or flour is appropriate)
- Wall mounted board covering heights from 150 to 350 cm (accurate to 1 cm) or,
- Vertec

PROCEDURE

- The student dips the fingertips of the preferred side into the powder chalk
- The non-preferred hand is placed on the hip
- The student stands with the preferred side nearest the board/vertec and reaches upward with their arm closest to the wall and touches the board/vertec with their middle finger to leave a mark at the highest possible point.
- The feet should be flat on the floor and the arm/hand extended as high as possible.
- Record the position of the initial mark to the nearest 1 cm (reaching height).
- The student's arms are to remain in the same position as above (the preferred arm is raised vertically and the non-preferred arm placed on the hip) as they go into a crouch. The student can choose the depth of crouch and is allowed to 'bounce' if desired. The student is not allowed to swing the arms to assist momentum.
- The student then springs upward from this position to touch the board/vertec at the highest possible point with the outstretched arm closest to the board.
- Allow two trials for each student.

SCORING

- Record the reaching height to the nearest cm.
- Record the final height (to the nearest cm) the student jumped on the best trial.
- Subtract the reaching height from the vertical jump height to obtain the vertical jump distance in centimetres.

Cricket ball throw

PURPOSE

The cricket ball throw is designed to measure arm speed which is necessary in the javelin throw and for some team sports.

EQUIPMENT

- Standard PVC cricket ball (156 grams)
- 100 metre tape measure accurate o the nearest 10 centimetres
- Marking flags
- Witches hats

PROCEDURE

- The student is allowed a maximum 20 metre run up (this should be marked with witches hats)
- The student throws the cricket ball overarm with the preferred arm as far forward as possible
- The student's feet must stay behind the throwing line
- Allow two practice throws and three measured trials for each student.
- Use the marking flags to indicate landing points
- It is particularly important to ensure students are adequately warmed up (with stretching and non-maximal throws) before performing this test.

SCORING

Record the distance from the line to the closest part of the landing point for the longest throw to the nearest 10 cm.

Agility run

Agility (the ability to change direction of the body quickly while moving) is an important component of many team sports.

- Stopwatch
- Two parallel lines (1.2 metres in length) marked on the ground 5 metres apart (measured between the two inside edges of the line).
- Witches hats (4)
- The floor surface should be flat, even and slip resistant. A gymnasium floor is often dusty and slippery. If this is the case it is better to conduct the test outside on a concrete or bitumen level surface.

- The student starts from behind one line with their front foot exactly on the line
- On the command 'go' the student runs forward as quickly as possible to the other line, pivots and returns to the start line
- This constitutes one cycle with five cycles required in total
- The student must touch both feet beyond the lines and between the witches hats except at the end of the 5th cycle when they should run past the finish line without slowing
- Start the stopwatch on the command 'go' and stop it when the student's chest crosses the line
- Allow two trials for each student
- If the student slips do not include this result and conduct another trial
- Do not allow the student to use their hands against the floor for support when pivoting

Record the time taken to the nearest 0.1 of a second for the fastest trial.

40 Metre Sprint (plus 20 metre sprint and 20 metre flying sprint)

The 40 metre sprint measures the ability to accelerate (20 m time, 40 m time) and to run with maximal speed (20 m flying time).

- Light gates (3 pairs)
- 50 metre running track that is straight, level and placed cross wind. If a grass surface is used ensure that it is dry.
- Tape measure
- Witches hats
- Students should wear normal running shoes or bare feet (no spikes)

- Mark the 20 and 40 metre running track.
- Place the starting gates at the starting line, 20 metre mark and 40 metre mark
- The student starts in a standing position with their front foot exactly on the line.
- Before the start the student must be stationary with no upper body movement.
- The student should run as fast as possible through to the last gate. As there is a tendency to slow down before the last gate, encourage the student to run through the gates (to facilitate this witches hats can be placed beyond the last set of gates).
- Emphasise to the student to run as quickly as possible.
- Allow two trials for each student with a short rest between trials.

Record 20 metre time, 40 metre time and 20 metre flying time (difference between 40 and 20 m time) to the nearest 0.01 of a second. Select the best time from each segment.

Appendix B

Testing Form

Test Battery for Movement Competence

Name and surname: _____

Age: _____

School: _____

Vertical Jump

40m sprint

20m sprint

20m fly

Agility run

Cricket ball throw

Appendix C

Description of the domains of the
Self-Perception Profile for Children

Content of each domain:

1. Scholastic domain: The items on this scale id school related. It taps the child's perception of his/her competence or ability within the realm of scholastic performance.

2. Social Acceptance: This subscale taps the degree to which the child is accepted by peers or feels popular. The items do not tap into social skills.

3. Athletic Competence: These items all tap content relevant to sports and outdoor games.

4. Physical Appearance: This scale taps the degree to which the child is happy with the way he/she looks. For example, do they like their height, weight, body, face and hair?

5. Behavioural Conduct: It taps the degree to which children like the way they behave, do the right thing, act the way they are supposed to, avoid getting into trouble and do things they are supposed to do.

6. Global Self-Worth: The items on this scale tap the extent to which the child likes oneself as a person. Are they happy with the way they are leading their life. It constitutes a global judgement of one's worth as a person, rather than domain-specific.

Appendix D

Letter to Western Cape Education Department

1 June 2006

Dr. RS Cornelissen
The Director, Educational Research
WCED
Private Bag X9114
Cape Town 8000

Fax: 425 7445
Email rcornelissen@pgwc.gov.za

Dear Dr Cornelissen,

I have discussed the establishment of an after-school movement education programme at Klapmuts Primary School and Kylemore High School, with the school principals, Mr. Frans and Mr. De Vries. The principals both believe that such a voluntary programme could meet some of the important physical activity needs of their learners, and give me and my research assistants (post-graduate students) the opportunity to present and assist in movement programmes.

We are very keen to measure the self-esteem, resiliency and movement competence of the children who participate in the programme, and with that in mind, I am making this application for conducting research to you.

The research dimension of the programme would include pre-testing (in July) and post-testing (in September). The "tests" would include fundamental motor skills, self-esteem and resiliency.

This information will be used for my doctoral study and for programme development. With this in mind, I would like to ask your permission to begin to work with Mr. Frans and Mr. De Vries on this project.

Thank you.

Mrs. Bronwyn Bock Jonathan
Department of Sport Science
Stellenbosch
bronwyn@sun.ac.za

Appendix E

Biodanza Workplan

WHAT IS BIODANZA?

Biodanza means movement full of meaning. (Bios = life, dance = movement)

Biodanza is a system of integration and development of the human potentials, based on music, movement and expression. It is held within a group dynamic to promote communication within the social group.

Prof Rolando Toro Araneda is the creator of this system. His research started in the 1960's, while he was lecturing at the Catholic University of Santiago, Chile. Prof Toro is a psychologist, anthropologist, scientist and artist.

Teachers of Biodanza are trained in a three-year programme of 27 modules and a series of supervised classes. Biodanza has been developed over the last forty years and is now presented in over 20 countries around the world.

AIMS OF BIODANZA

Biodanza works with music, movement and emotion to stimulate the potential of joy, creativity and connection with others. Classes are conducted in groups and participants dance alone or with other group members. Participants report feelings of improved self-esteem, relationships and greater vitality and joy after attending classes.

Preliminary results of control group experimental studies on Biodanza conducted at the University of Leipzig in Germany by Dr Marcus Stueck indicate that Biodanza has beneficial effects on the immune system and increases feelings of well-being amongst participants.

General aims could be summarized as:

- Strengthening the sense of self (identity)
- A safe space to move freely and recover the natural movement and expression
- Self-discipline and regulation
- Increased concentration span
- Possibility to express emotions in a non-judgmental space
- To have fun with pier group, promote a sense of well-being and cohesion within the group context

METHODOLOGY

Biodanza works with the elements of music, movement and expression, in a non competitive environment, where everyone is invited to join.

There is an initial time of activation, laughter and games. Then a time of integration and self-regulation, which leads to the possibility of the expression and the movement according to the emotion.

The essential operative element of the Biodanza system is the "vivencia" – or dance experience itself. We work with the different "lines" of vivencia : vitality, creativity, affectivity and transcendence.

ABOUT THE FACILITATOR

Marita holds a degree in nursing (U.S), an honours degree in Psychology (U.P) and a Masters in Clinical Psychology (U.P). She has a keen interest in creative arts therapies and Jungian psychology. She has completed a post graduate diploma in psychoanalytic psychotherapy through the S.A Institute of Psychotherapy, as well as a two year infant observation course (Tavistock linked). She also completed training in psychoanalytic couple therapy.

Marita is a qualified teacher of Biodanza and attended training schools in Europe and South Africa. She has facilitated workshops, which include bodywork, since training with Jungian analyst, Marion Woodman in Canada in 1994. She has also attended workshops by Prof Rolando Toro, the creator of Biodanza. She completed specialized extensions in clinical Biodanza and Biodanza with children in Austria.

Marita has been in private practice for over 25 years as clinical psychologist. She runs regular Biodanza classes in Durbanville and Boys Town and conducts workshops.

Appendix F

Self-Defence Course

To: Bronwyn Back Jonathan
From: Tony Edwards
Date: 5th May 5, 2006

Table 1. Basic format of classes 1 to 24

1	Introduction to concept of self defence: when and why. Posture, basic striking, kneeing and body movement-stances.
2	Basic striking and kneeing. Movement-stances in attack and defence. Introduction to arm-grip breakouts: attack and defence.
3	Basic striking, kneeing and body movement; attack and defence. Revision of breakouts to the arms-grips.
4	Use of strikes on a partner and at a punching bag. Effective striking points on the body. Arm breakouts with body movement. Revision of attack and defence movements.
5	Basic striking, kneeing, kicking and blocking. Defensive and attack movement with a partner. Revise arm-grip breakouts with counter strike.
6	Balance exercise. Movement and stances: attacks, defences and counter strikes. Arm-grip breakouts and strangle holds to the neck: attack and defence movement.
7	Basic striking, kicking and kneeing to specific targets on a partner. Defensive and attacking body movement with block and counter strike. Introduction to club use: attacks, defensive body movement and blocks.
8	Balance exercise. Basic strikes on partner from head to toe. Attack to the throat as a striking point and defence. Revision of club attacks with defence.
9	Basic strikes and kicks with body movement. New arm breakout technique. Neck breakout and counter strikes. Body movement with blocks and counter strikes. Revision of club attacks with defence.
10	Balance exercise. Forcing partner to ground while avoiding attack. Neck strangle from behind: attack and defence. Shoulder/body lock from behind: attack and defence.
11	Balance exercise. Forcing partner to ground while avoiding attack. Breakout from neck-front and behind: attack and defense. Arm breakouts revise attacks and defenses.
12	Striking to specific targets on partner's body. Balance exercise. Forcing partner to ground while resisting avoiding attack. Revise all arms and neck breakouts. Strangle hold from behind: throw as defence.
13	Basic strikes, kicks, blocks and kneeing. Revise defense throw for strangle hold from behind. Effective elbow strikes and application on partner.

14	Basic strikes, knees and kicks on partner when being attacked. Revise elbow strikes on partner. Revise all breakouts and throws from behind.
15	Basic striking for quick reaction. Defense/attacks with blocks and counter. Attacking to the knee areas with kicks as a form of defense. Defense options in a rape situation on the ground.
16	Balance exercise. Forcing partner to ground while avoiding attack. Revise defense options in a rape situation. Revise club attacks and defense.
17	Strikes and kicks to various points on a partners body when being attacked from behind. Revise arm breakouts and throws from behind. Introduction to knife attacks.
18	Balance exercise. Revise kicking and kneeing techniques against grabs and holds. Defense application using legs and body movement against a knife attacker.
19	Revise defense and attacking movement and block against forward attacks. Revise throws learned when attacked from behind. Balance exercise. Use of legs in a rape situation.
20	Forward rolls, falling to the ground and getting up in a ready stance with a partner. Falling to the ground and defending whilst on the ground. Revise defense against a knife attacker.
21	Basic kicks and knee techniques and application in attacks from the front and behind. Falling to the ground and defending whilst on the ground.
22	Revise all breakouts to the arms, neck and shoulders from front and behind, including throws. Defense movement, block and counter with partner: unarmed attack.
23	Revise all striking areas on body from head to toe. Apply against forward attack and grabs/holds from front and behind. Revise throws.
24	Balance exercise. Forcing partner to ground while avoiding attack. Defense while being attacked on the ground. Defense against grabs to the throat: front and behind.

Ongoing points

1. Quick reaction to the count and the attack.
2. Use of voice as a weapon in defense.
3. Improvement of use of body to prevent attacks both physically and metaphysically through use of good posture and confident body awareness.
4. Causes of attacks.
5. Improved fitness.
6. Improved balance and stances/groundedness.

Appendix G

Differences in Pre-test Scores Among All Three Groups

Variable	N	Sig (2 tailed)
Vertical Jump Pre-test	63	.463
20m Sprint Pre-test	63	.455
Agility Run Pre-test	63	.000*
Cricket Ball Throw Pre-test	63	.059
Global Self-worth Pre-test	63	.186
Scholastic Competence Pre-test	63	.328
Social Acceptance Pre-test	63	.300
Athletic Competence Pre-test	63	.844
Physical Appearance Pre-test	63	.339
Behavioural Conduct Pre-test	63	.411
Resilience Pre-test	63	.048*

*(p<0.05)

Appendix H

Correlations

Post-scores correlation for the total group

Spearman's Correlation	Global Self-worth	Social Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioural Conduct	Resilience	Vertical Jump	20m Sprint	Agility Run	Cricket Ball Throw
Global Self-worth	1										
Social Competence	.296*	1									
Social Acceptance	.433**	.455**	1								
Athletic Competence	.284*	0.149	0.141	1							
Physical Appearance	.721**	0.215	0.231	0.251	1						
Behavioural Conduct	.391**	.391**	0.125	.264*	.451**	1					
Resilience	-.258*	-.116	-.102	-.267*	-.285*	-.060	1				
Vertical Jump	-.208	-.082	-.143	0.062	-.247	-.001	0.164	1			
20m Sprint	0.029	.280*	0.169	0.095	0.076	0.12	-.130	-.357**	1		
Agility Run	0.13	-.236	-.233	-.005	0.165	-.121	-.044	-.266*	0.002	1	
Cricket Ball Throw	-.043	.303*	0.165	.352**	-.031	0.125	0.05	.372**	0.077	-.371**	1

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Post-scores correlation for the movement competence A-group (Biodanza)

Spearman's Correlation	Global Self-worth	Social Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioural Conduct	Resilience	Vertical Jump	20m Sprint	Agility Run	Cricket Ball Throw
Global Self-worth	1										
Social Competence	0.235	1									
Social Acceptance	0.437	0.349	1								
Athletic Competence	0.359	-0.113	0.06	1							
Physical Appearance	.616**	0.201	-0.033	0.166	1						
Behavioural Conduct	0.426	.464*	0.06	0.353	.574*	1					
Resilience	-0.172	-0.258	0.147	-0.162	-0.283	-0.122	1				
Vertical Jump	-0.284	-0.031	-0.054	0.074	-0.261	0.083	-0.028	1			
20m Sprint	0.141	0.103	0.016	-0.276	0.262	0.135	0.244	-.750**	1		
Agility Run	0.088	-0.266	-0.077	0.114	0.001	0.015	0.185	-.538*	.619**	1	
Cricket Ball Throw	0.065	0.332	0.052	0.332	0.161	.549*	-0.153	.706**	-0.388	-0.307	1

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Post-scores correlation for the movement competence B-group (self-defence)

Spearman's Correlation	Global Self-worth	Social Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioural Conduct	Resilience	Vertical Jump	20m Sprint	Agility Run	Cricket Ball Throw
Global Self-worth	1										
Social Competence	0.394	1									
Social Acceptance	0.261	0.372	1								
Athletic Competence	0.13	0.184	-0.151	1							
Physical Appearance	.746**	0.089	0.115	0.157	1						
Behavioural Conduct	0.337	.522*	0.055	0.295	0.424	1					
Resilience	-0.351	-0.066	0.047	-0.247	-0.359	-0.289	1				
Vertical Jump	-0.018	0.096	0.071	0.227	-269	0.03	0.356	1			
20m Sprint	0.239	0.019	-0.197	-0.027	0.302	0.239	-.585**	-0.333	1		
Agility Run	0.411	-0.026	-.446*	-0.022	0.433	0.021	-0.301	-0.314	.497*	1	
Cricket Ball Throw	0.124	0.229	0.415	0.187	0.115	0.049	0.241	0.167	-.600**	-0.22	1

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Post-scores correlation for the control group

Spearman's Correlation	Global Self-worth	Social Competence	Social Acceptance	Athletic Competence	Physical Appearance	Behavioural Conduct	Resilience	Vertical Jump	20m Sprint	Agility Run	Cricket Ball Throw
Global Self-worth	1										
Social Competence	.590**	1									
Social Acceptance	.812**	.572**	1								
Athletic Competence	.539*	0.32	.559*	1							
Physical Appearance	.757**	.554*	.737**	5.29**	1						
Behavioural Conduct	.528*	0.142	0.296	0.191	0.444	1					
Resilience	-0.281	-0.167	-0.401	-.486*	-0.213	0.207	1				
Vertical Jump	-0.396	-0.4	-0.424	-.479*	-0.293	-0.169	0.222	1			
20m Sprint	0.336	0.268	0.397	0.178	0.165	-0.018	-0.333	-.457*	1		
Agility Run	-0.392	-0.211	-0.201	-0.147	-0.116	-0.413	-0.19	0.005	0.01	1	
Cricket Ball Throw	-0.042	0.098	-0.109	0.327	-0.186	-0.271	-0.041	0.244	-0.286	-0.428	1

** Correlation is significant at the 0.01 level

*Correlation is significant at the 0.05 level

Appendix I

Focus Group Interviews

What were the perceptions of the subjects of the movement programmes?

The researcher used focus group interviews to gather this data. The responses of the subjects were divided into five categories or themes.

The focus group interviews produced several themes. The themes will be presented according to the questions used during the focus group interviews.

Question: You participated in the self-defence/Biodanza sessions and I am interested to know how you experienced the sessions?

The children enjoyed the movement competence programmes. Their responses included the following:

- Enjoyed it.
- Good experience. It taught me to like myself.
- It will help my in future.
- I learnt self-defence techniques.
- It was interesting.
- I enjoyed the dancing.
- I enjoyed working with the instructor.

It is evident that the adolescents enjoyed the movement competence programme. They also mentioned that the sessions will help them in future. The self-defence taught them valuable techniques and the Biodanza taught them to love themselves. The adolescents seem to enjoy working with the instructors. By having the cooperation of the participants the instructors can be sure of achieving their objectives for the sessions. The instructor-participant relationship is critical to the success of any physical activity programme.

Question: What did you value the most of the sessions?

- I felt good about myself.
- If I felt sad I could express myself in these sessions
- I felt loved during these sessions.
- If I was angry before the session but when we start the session I feel a lot better.
- The instructors were very friendly.
- I appreciated the fact that the instructor was at every session. It did not matter if it rained or if there were few girls at the session.
- I learned a lot from the sessions.

The adolescents experienced increases in self-worth during the sessions and it is valuable that they could express in a positive ways, namely through movement. There is also reference to elevated mood states after the sessions. Another important factor is that the adolescents appreciated the instructor.

Question: What aspects of the sessions did you enjoy the most?

- Throwing your opponent onto the floor.
- Enjoyed seeing my opponent fall.
- I loved "Bomba" because there was lots of action and movement.
- We loved "Bomba" because it was a lively song.

Question: Can you tell me about any lessons you leant during the sessions?

- Respect.
- Respect others.
- It taught me a lot about myself.
- I learned to love and respect myself.
- I learned things about myself.
- I learned self-confidence, self-respect and discipline.

- Each dance had a meaning.
- The dance had a purpose.
- I learned that when somebody else speaks then I need to be quiet.
- You need to cooperate with others.
- You cannot stay angry with someone for ever.
- It was not easy to hold hands with someone you were angry with.
- To defend yourself.
- It does not matter how big the person is or small I am because I can defend myself.
- Improved my self confidence because initially I thought I was too small to overpower my opponent but later I learnt how to do it. Once I achieved that it felt like I could do anything.
- I have the confidence to apply the techniques if I find myself in a dangerous situation.
- I even challenged my boy cousins.

The lessons learnt by the participants varied from physical techniques to life skills. It was noticeable that the lessons learnt by the movement competence A-group (dancing) included only improvement in psychological skills and life skills. Both groups mentioned that they experienced improvements in their self-confidence. This is an important finding for this study.

Question: If you could choose any other movement form, what would it be?

- Dance classes in "*kwaito*", R 'n B, jazz.
- Ballroom
- I would like to do modern dancing and hip hop.
- Drawing or art classes.
- I would enjoy karate.

It is important to present physical activity programmes that appeal to the individual if you want to achieve positive changes in behaviour and the feedback

from the focus group interviews highlights this fact. Their interest in the activity will ultimately also affect their attendance rates. The participants in the self-defence group received a certificate of participation from the instructor if they attended 80% of the sessions. This possibly served as an incentive for some individuals. Both groups were very proud of what they learnt during the movement competence programmes and decided to perform at their respective schools during the assembly.

Question: Some of you were unable to attend a few of the sessions. Will you share why you could not attend?

- I thought we would compete against other schools.
- I would prefer to do the sessions at another venue. The surface was too slippery.
- It became boring.
- I was sick.
- I was hungry so I would rather go home to eat.
- Sometimes it was too hot.
- I had to play netball.
- I have lots of work to do at home (chores).

**Focus Group 1
(Self-defence)**

What do you think of the SD sessions?

1. Enjoyed it.
2. Learned a lot.
3. Good experience…taught to like myself.
4. Help my in future.
5. I enjoyed it…learnt SD techniques but I didn't always feel like being at the class.

Why did you sometimes not attend the SD sessions?

1. It became boring.
2. I was sick…had a gum boil.
3. One time I was sick and I also thought that it was going to be the same activities over and over.
4. I was hungry so I would rather go home to eat.
5. I was sick
6. It was boring…sessions had no life.
7. Sometimes it was too hot.

What activities of the SD sessions did you enjoy the most?

1. Throwing your opponent onto the floor.
2. Enjoyed seeing my opponent fall.
3. I appreciated the fact that Tony was at every session. It didn't matter if it rained or if there were few girls at the session.

What did you learn from the SD sessions?

1. To defend yourself
2. It doesn't matter how big the person is or small I am I can defend myself.
3. Improved my self confidence…initially I thought I was to small to overpower my opponent but later I learnt how to do it. Once I achieved that it felt like it could do anything.
4. I have the confidence to apply the techniques if I find myself in a dangerous situation.
5. I even took on my boy cousins.

If you could choose, what other activities would you rather participate in?

1. Karate…want to learn the different techniques.
2. I enjoyed the SD but I thought it would be later in the afternoon.
3. I would also enjoy karate

4. I would like to modern dancing and hip hop.
5. I thought we would compete against other schools.
6. I would prefer to do the sessions at another venue. The surface was too slippery.

Additional comments/questions:
1. If we have SD sessions again, can we have a farewell function?
2. What does tony charge per session? Where does he teach?
3. Once we know the techniques, will it be possible to get special clothing?

Focus Group 2
(Biodanza)

What do you think of the dance sessions?

1. I enjoyed it very much.
2. It was interesting.
3. I earned a lot from the sessions.

What did you learn?

1. Respect…respect for everyone…
2. I felt good about myself.
3. If I felt sad I could express myself in these sessions
4. I felt loved during these sessions.
5. I learned self-confidence
6. If I was angry before the session, by the time we start the session I fee a lot better.

Why did you sometimes not attend the dance sessions?

1. I had to play netball.
2. I had a pain my bladder.
3. I was sick.

What activities of the SD sessions did you enjoy the most?

1. We loved "Bomba"…it was a lively song.
2. Marieta and Ingrid were very friendly.

What did you learn from the dance sessions?

1. That I can trust someone like Ingrid and Marieta.
2. To be honest.
3. How to communicate with each other.
4. To have respect for others.

If you could choose, what other activities would you rather participate in?

1. "Kwaito" dancing
2. R 'n B
3. Hip Hop
4. Ballroom
5. Jazz dancing

Additional comments/questions:

1. Do you still play netball?
2. I appreciate the time you spent with others.

Focus Group 3
(Biodanza)

What do you think of the dance sessions?

1. It taught me a lot of myself…I learn to love myself and to respect myself…
2. I learned things about myself that I wasn't aware of
3. I learned self-confidence, self-respect, discipline.
4. I enjoyed the dancing…I enjoyed working with Ingrid

Why did you sometimes not attend the dance sessions?

1. I have lots of work at home (chores).
2. My mother sent me to the farm to collect some things
3. I had stomach cramps.
4. I was hungry and rather went home to eat.

What activities of the SD sessions did you enjoy the most?
1. I loved "Bomba"…there was lots of action and movement.

What did you learn from the dance sessions?

2. I learned a lot
3. It wasn't only a dance…each dance had a meaning.
4. The dance had a purpose.
5. I learned that when somebody else speaks then I need to be quiet.
6. Respect the person that is speaking.
7. You need to cooperate with others.
8. You can't stay angry with someone for ever.
9. It wasn't easy to hold hands with someone you were angry with.
10. Respect others.

If you could choose, what other activities would you rather participate in?

1. Dance classes in kwaito, R 'n B, jazz, lag-arm,
2. Drawing or art classes.

Additional comments/questions:

1. I wish we could have done the dancing 2 years ago.