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Development of a Physical Activity Program for Children and Youth with Autism: An Action Research Approach

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Abstract

This study examines the implementation of strategies for the development of a physical activity program for children and youth with autism. The aim of the study was the collaborative development of a sustainable physical activity program with families with children with autism. A phenomenological approach was employed in the study, which used participant observation that included conversations to obtain the lived experiences of the participants. Close observations were made of the interactions between parents/assistants and the children, the children and the environment and the parents/assistants, children and the instructor. Thematic analysis was used to analyse the obtained data. The results indicated that it is possible to develop a sustainable physical activity program for children with autism if proper strategies are implemented. The study suggests that children with autism should be afforded more opportunities for participation in physical activity. This study provided the members of the Autism Association of Oslo with an opportunity to participate in physical activity. The program development process also provided the parents that were involved with the knowledge and guidelines for future physical activity possibilities.

Key words: autism, physical activity, action research, phenomenology

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Knowledge is in the end based on acknowledgement.
~ Ludwig Wittgenstein ~

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Chapter 1: Introduction

> It is the continual reformulation of what we know in the light of what we perceive that matters, and the hardening of what we know into a formula that we apply ready-made instead of reformulating – that is the danger. Thus, our most powerful ideas are relatively general, relatively unformulated starting points from which we constantly reformulate (Britton, 1982; Holley, 1997 cited in McNiff and Whitehead, 2009: 125).

It is four o'clock Thursday afternoon, 6 May 2010. It is the usual time that I start the set up for the 17:30 physical activity program for the children/youth with autism. Today is the last activity session. I cannot believe it is the last activity session, since not too long ago the prospects of starting a physical activity program for children with autism was only an idea.

Nearly two years ago I started to think about developing a physical activity program for children with autism. I had no idea where to start or whether the idea of a physical activity program will ever become a reality. In the early days my first thoughts were to design a program that focus on gross motor skill development.

Since coming to Oslo, and attending the Norwegian School of Sport Sciences (NSSS) my approach toward a physical activity program for children with autism underwent a metamorphosis. It was not NSSS that changed my mind but it was the literature study I did during my time at NSSS. Through the literature review I became aware that there is a need for a person-first approach in providing physical activity to the child with autism. It became apparent that most of the programming and interventions developed for persons with Autism Spectrum Disorder (ASD) were based in behavioural models, largely because behaviour is the most visible and unnerving manifestation of ASD (Connolly, 2008: 238). Very few studies have studied the lived experiences of the child with autism[1] and physical activity.

Autism spectrum disorder (ASD) is a wildly heterogeneous lived experience of stressed embodiment. Many children, youths and adults with ASD are unable to access meaningful, relevant physical activity programmes because of the complexities associated with their behavioural, emotional and communicative idiosyncrasies (Connolly, 2008: 234).

[1] The individuals with Disabilities Education Act (IDEA) define *autism* as follows: A developmental disability significantly affecting verbal and non-verbal communication and social interaction, generally evident before age 3 that adversely affects a child's educational performance. Other behaviors often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance, (as cited in Sherrill, 2006: 606).

Rosser (2004) also found that both integrated and segregated extracurricular physical activity programs for youth with ASD were lacking (cited in Pan & Frey, 2006). The lack of opportunities for physical activity for children/youth with autism is an indication that it is not just the personal attributes and complexities of children/youth with autism that prevent access to meaningful physical activity.

One of the primary concerns identified in physical education/activity literature is that the procedures and environment of physical education have not been adequately adapted so that maximum instructional time can be provided (Weber & Thorpe, 1992 cited in Schultheis et al., 2000). I can understand that maximum instructional time is a concern, since the idea of providing physical activity is to give children/youth an opportunity to actively participate for the duration of the activity session.

1.1. Concerns Emerging from Literature

One of the main concerns related to autism and physical activity is a lack of opportunities for physical activity. There is also a concern that majority of the approaches to interventions are centred on behavioral models, that intend to change the individuals' stereotypic behavior. Thus, meaning that there is a need to identify other motivators for participation in physical activity. Another concern is the lack of appropriate adaptations in physical education to maximise instructional time. Instructors and physical educators need to become more aware of the individual needs of the child with autism to ensure effective instruction and participation in physical activity (Hamilton-Pope & Miller, 2006).

1.2. How Do We Address the Concerns?

The current physical activity program originated because of the lack of physical activity opportunities for children/youth in Oslo, Norway in the immediate communities in which the children/youth reside. Thus, it seems that the lack of physical activity opportunities for children/youth with autism is still one of the main problems today.

I would like to identify myself with TEACCH that believes that children with autism are part of a distinctive group with common characteristics that are different, but not necessarily inferior, to children without autism (Blubaugh & Kohlmann, 2006). As a result, TEACCH does not try to help a child with autism become 'normal'. Rather the focus is on building upon each child's unique strengths and differences to help him/her become successful (Mesibov, 2004, 2006 cited in Blubaugh & Kohlmann, 2006). O'Neill (1999) stated that we

should be more accepting of autism and not attempt to change its fundamental nature (cited in Reid et al. 2003: 47). I do realise that this statement by O'Neill (1999) might not be the perception of many parents, doctors, educators, and researchers who are constantly looking for solutions to the 'problem'. Nevertheless, with this study being grounded in a phenomenological approach, I think it is worthwhile to consider this because in my understanding O'Neill is concerned with the person and accepting the person with autism as they are. The intention of the current physical activity program is consistent with Mesibov (2004; 2006) in that the aim is not to make the child 'normal' through physical activity but merely providing an opportunity to participate in physical activity (cited in Blubaugh & Kohlmann, 2006). It is about providing a space that is adapted to the individual needs of children/youth with autism.

Without continuous reformulation the present physical activity program would not have been successful for this group of participants. I continuously reflected on the progression of the physical activity program and adapted the program when necessary to ensure that it remained centred on the needs of the children/youth.

The second chapter of this study will provide an overview of the literature; in the third chapter a discussion will follow about the methods used to conduct the study; the fourth chapter will give an overview of the results and a discussion will follow that address the strategies that were implemented for the development of the physical activity program. It will also include the reasons for changes and adaptations/modifications that occurred during the study. In this section, four indicators that contributed to the changes and adaptations will be presented namely: a) parents' suggestions, b) children's interests and needs, c) variety of movement possibilities, and d) positive or negative movement experiences. In chapter five conclusive thoughts and recommendations for future studies will be made and it will include specific learning experiences I had during the action research process.

The research question for the study is: How can a physical activity program for children/youth with autism be developed in collaboration with the parents and children?

Chapter 2: Literature Review/Theory

If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow.

~ Rachel Carson ~

In this chapter different approaches and purposes for physical activity for children/youth with autism will be reviewed. The purpose of this investigation is to discover an array of reasoning for providing children/youth with autism with the opportunity to participate in physical activity. The study of existing literature will provide guidance and insight for the development of a physical activity program for children/youth with autism. The current research study is grounded in a phenomenological approach. In my understanding of the quote by Rachel Carson, the lived experiences – the emotions, the impressions - of the human body cannot be separated from the facts; it actually provides the context to discover knowledge and wisdom.

2.1. Physical Activity for Children/Youth with Autism

The importance of a physically active lifestyle has long been a global phenomenon that still receives much attention and discussion. Despite the emphasize on physical activity as an important part of a healthy lifestyle for all people (U.S. Department of Health and Human Services, 1996), it is still overlooked in people with severe disabilities (Ellis, Cress and Spellman, 1992), including those with Autism Spectrum Disorder (ASD) (cited in Todd and Reid, 2006: 167).

Researchers have spent many years investigating numerous approaches for interventions to improve the behavioural deficits of children/youth with autism. The Classic Behavior Management approach is a well known approach that focuses on extinguishing autistic behaviors (Sherrill, 2006). This approach is often used but it is not the only approach that has been used to reduce autistic behaviors. Several sensory and motor interventions have also been attempted to impact certain sensory and motor deficits in children with autism. Baranek (2002) investigated the efficacy of sensory and motor interventions for children with autism. Interventions found in the study by Baranek (2002) included Classical Sensory Integration Therapy, Sensory-Integration Based Approach, Sensory Stimulation Technique, Sensorimotor Patterning, Auditory Integration Training, Ambient Prism Lenses (Visual Therapy) and Exercise Therapy. Baranek (2002: 415) concluded that though some positive

attributes were made by some of the above mentioned interventions, methodological constraints (e.g., use of small and convenience samples, weak/uncontrolled designs, observer bias, etc.) limited conclusive statements and generalizability of much of this work. Therefore Baranek (2002: 418) suggest that future research must move from the current level of small-scale, poorly controlled, unsystematic studies of effectiveness, to a level that demands scientific rigor and well-controlled large-scale designs. The improved methodological measures in the research process could potentially provide the answers to important questions of not only what is effective but with whom and under what conditions (Baranek, 2002: 418). Exercise was one of the interventions from the above mentioned sensory or motor interventions that resulted in some positive outcomes.

Since the early 1990's physical activity has increasingly been used to reduce stereotypic behaviors.

> Stereotypic behaviors are defined as repetitive non-functional behaviors (Foxx & Azrin, 1973) and include rhythmic rocking, repetitive jumping, arm flapping, floor pacing, object spinning, hand staring, eye rolling or crossing, and toe walking (Cushings, Adams, & Rincover, 1983). These behaviors have been shown to interfere with previously learned behaviors (Bucher & Lovaas, 1968) and with learning (Koegel & Covert, 1972 cited in Levinson & Reid, 1993: 255).

The concerns with the interference of stereotypical behaviors with previously learned behaviors and the impact of these behaviors on learning seem to be reasonable motivators for conducting studies to decrease these behaviors. Levinson and Reid (1993: 255) examined the effects of exercise intensity on the stereotypic behaviors of three subjects with autism. The subjects participated in two exercise programs with different intensities. The mild exercise program consisted of 15 minutes of walking and the vigorous program consisted of 15 minutes of jogging. They measured the frequency of stereotypic behaviors on three occasions; before the exercise, directly after the exercise, and 90 minutes after the exercise (Levinson & Reid, 1993). According to the results significant reductions in stereotypic behaviors occurred with the vigorous exercise program. These reductions were only temporary (Levinson & Reid, 1993). Since there is only a temporary reduction in stereotypic behavior vigorous exercise can be viewed as a practical and successful method of temporarily reducing the frequency of stereotypic behaviors of individuals with autism (Levinson & Reid, 1993: 266). I do not want to condone the importance of the above mentioned study since the

concerns that led to this study is a reality for many children/youth with autism. But I cannot help to wonder whether there is potential for this kind of intervention to lead to a physically active and healthy lifestyle for children/youth with autism. I am not convinced that the emphasis that is placed on reducing stereotypical behaviors through physical activity would transfer into lifelong physical activity. Why continue with an activity that only offers temporary solutions to stereotypic behaviors. Thus, if there is such a strong emphasis on reducing stereotypical behaviors through physical activity it could potentially discourage participation in physical activity because the activity does not provide the intended hoped for results. In addition to this concern one could ask whether it is enough to only use the claims of physical and mental health benefits to encourage participation in physical activity.

Very few studies have been conducted with regards to physical activity and children/youth with autism. More than 10 years after the above mentioned study Pan and Frey under took the challenge of investigating the physical activity patterns of youth with Autism Spectrum Disorders (ASD). Thirty youth, between the ages of 10 – 19 years participated in the study. Each participant wore an accelerometer and completed an activity questionnaire for seven consecutive days (Pan and Frey, 2006: 597). The results indicated that elementary youth were more active than the other groups. The type of day or time period did not make any difference. Secondly, the results indicated that there were no consistent patterns in physical activity of youth with ASD. The time of day or time period again did not make a difference. According to the findings in this study there is a need for interventions to address the increase of extracurricular physical activity options especially during adolescent years (Pan and Frey, 2006). Pan and Frey (2006: 597) pointed to the statement made by the Autism Association of America in (2002) that youth with ASD may be at risk for inactivity due to social and behavioral deficits often associated with this condition. Thus, there is a possibility that the social and behavioral deficits of children with ASD might impede on opportunities for participation in physical activity with peers (Fox and Riddoch, 2000 cited in Pan and Frey, 2006). An immediate question that comes to mind is; how can physical educators and instructors or a physical activity program contribute to decrease the negative impact that social and behavioral deficits could have on opportunities for physical activity.

Todd and Reid (2006) conducted a study to evaluate the outcomes of an intervention package on participation in two physical activities: snowshoeing and walking/jogging. The participants were three male secondary school students. The design used for this study was a changing conditions design. The program consisted of six phases and the phases were

determined by the amount of edible re-inforcers provided during the sessions. The results showed an increase in the distance snowshoed, walked and jogged per 30 minute session as edible and verbal reinforcement decreased. Based on the results from this study Todd and Reid (2006) suggested that interventions could be used to encourage sustained participation in physical activity for individuals with autism. The reinforcement intervention package used in this study is directed toward research findings that children/youth with autism have low motivation to participate in physical activity. The edible reinforcement was used upon requests from the teachers to have continuity between the school program and physical activity program. Verbal cuing was the other part of the intervention package that was used as encouragement during the session to motivate participants to keep exercising. The participants made use of a self-monitoring board; they placed a smiley face under their name to keep record of each completed circuit. The participants in this study had a positive response to the positive reinforcement instructional strategy that was used. Thus, this appears to be an affordable strategy to encourage children/youth to participate in physical activity to increase their physical activity levels. In general low motivation seems to be a concurrent occurrence in children/youth with autism. A question that comes to mind is whether the type of physical activity presented to the child has a direct influence on the child's motivation and attitude toward the activity. Thus, is it the child's motivation or the activity?

Other approaches to interventions include a psychotherapy approach, which is acceptance and imitation [mirroring] of the child's autistic behaviors until she or he is ready to give them up or replace them with other more age-appropriate activities. Central to this approach is the presence of an adult in a one-to-one therapeutic relationship almost every hour of the day. Much of the intervention used is dance or movement therapy (Sherrill, 2006: 606). Therapeutic riding is another approach – after individuals with autism leave school, they follow the same schedule at the stables that was used in the classroom. Reports from parents and teachers indicated that children with autism improved in most areas of sensory processing and their reactions to the environment around them after riding (Sherrill, 2006: 607). It seems interesting that the children's reactions to the environment around them changed after the therapeutic riding. Therapeutic riding is a popular therapy option for children with autism. I am wondering how long after the therapeutic riding the effects were present.

The North Carolina TEACCH program uses a cognitive approach that manages behavior by addressing it as indirectly as possible. TEACCH is the acronym for Treatment and Education

of Autistic and related Communication-Handicapped Children (Landrus & Mesibov, 1985 cited in Sherrill, 2006: 606). TEACCH is a *visual approach* that involves both assessment and instruction in strategies based on the skills, interests, and needs of individuals with autism. This program involves an organized physical environment, structured daily education activity schedules, clear and explicit expectations, and the use of visual materials that provide visual cues about how and when to respond. The key areas of instruction are functional skills, communication, social and leisure skills that will enhance community integration (Bartlett, Weisenstein, & Etscheidt, 2002 cited in Sherrill, 2006).

It is apparent from literature that various treatment approaches have been taken to intervene in the social and behavioral deficits of children with autism. Very few studies have been conducted to explore physical activity as an extracurricular activity.

2.1.1. Benefits of Physical Activity

Why is physical activity important for persons with and without disabilities? Regular physical activity participation reduces the risk for morbidity and mortality associated with chronic diseases such as cardiovascular disease, certain cancers, diabetes, and obesity (USDHHS, 2002), and multiple cardiovascular disease risk factors have been observed in youth (Berenson & Srnivasan, 2005 cited in Pan & Frey, 2006: 597). Thus, there is a suggestion that physical activity can reduce the risk for secondary health diseases. Reducing health risks is not the only reason why physical activity is important for all persons even though it receives most of the media attention and is mainly emphasized in scientific/experimental literature. Physical activity also leads to positive self-esteem, behavior, happiness, and intellectual and social outcomes in youth (Biddle, Sallis, & Cavill, 1998; Strauss, Rodzilsky, Burack, & Colin, 2001 cited in Pan & Frey, 2006: 597). The social gains through physical activity are important for mental health. Even though there is a lack of research to substantiate the social, mental and health benefits, it is reasonable to assume that the general physical and mental health benefits of physical activity would also extend to youth with ASD (Pan & Frey, 2006: 597). Physical activity can be a valuable means to contribute to the social development of the child with autism. Children with autism are confronted with social interaction challenges due to their deficits in communication. Thus, physical activity does not only impact on the physical and mental health of the child but can also affect the child's personal and social development. I would like to argue that merely

providing an opportunity for physical activity is a benefit in itself for the individual with autism who undertakes the opportunity to participate.

2.1.2. Challenges for Participation in Physical Activity

Children/youth with autism stumble upon a number of challenges when it comes to participation in physical activity. Physical activity is a challenge because of poor motor functioning and low motivation (Koegel, Koegel, & McNerney, 2001; Reid, O'Connor, & Lloyd, 2003), difficulty in planning and generalization (Ozonoff, Strayer, McMahon, & Filloux, 1994; Renner, Klinger, & Klinger, 2000) and difficulty in self-monitoring (Hughes, Russel, & Robbins, 1994 cited in Todd and Reid, 2006: 167). The Autism Association of America (2002) identified a number of social and behavioral deficits such as difficulties in understanding social cues, making eye contact, playing imaginative and social games, engaging in sharing/turn-taking and reciprocal conversation, and making friends as risk factors for non-participation in physical activity (cited in Pan and Frey, 2006: 597), which means that these deficits may predispose children to inactivity (Reid, 2005). The above mentioned challenges to physical activity is a one sided approach in which the inabilities and deficits of the child with autism seem to be the only reason why participation in physical activity is a challenge or why the child is at risk for becoming inactive. Is this really true?

In a research application undertaken by Reid (2005) he looked at two studies; one by McKenzie et al. (1991) and the other study by Garcia et al. (2002) where they compared the activity levels of children and youth with and without ASD. There were no statistically significant differences between youths with ASD and youths without ASD. In these studies adolescents with ASD were significantly less active than children, and few engaged in extracurricular activities. The results indicated that age and sedentary pursuits were the strongest predictors of physical activity in youths with ASD, while neither parent activity or support had a significant impact on physical activity (Reid, 2005). It became apparent that in the present studies the activity levels and patterns between youths with and without ASD were very similar. The factors that influenced activity seem to be somewhat different. With sedentary pursuits as a strong predictor of physical activity, it turned out that participants with ASD watched less television than recommended. Thus, it is suggested that few opportunities for physical activity is rather likely to be the problem. To add to this finding, neither parent physical activity nor support had a significant influence on youth physical activity. Again, there is a suggestion that this is due to the lack of physical activity

opportunities (Reid, 2005). The study by Reid (2005) revealed a very important finding and this certainly indicates the other side of the coin. It is not any longer only the one sided approach that suggests that the deficits and inabilities of the child with autism is the only source of the challenges but that opportunities play a vital role in the participation in PA. Who can provide opportunities for PA? I believe that as physical educators or instructors it is necessary to see these challenges as opportunities for personal learning and development instead of inconveniences that distract us from providing opportunities for physical activity for children/youth with autism (Norton, 2009). In this way the challenges become constructive because there is a shift toward enquiry; how can a suitable physical activity program be developed to meet the needs of the children/youth with autism.

2.1.3. Strategies for Physical Activity Programming

Children and youth with autism spectrum disorder (ASD) are often mistakenly perceived to be unapproachable and unteachable (Reid et al., 2003: 20). Literature provides sufficient accessible information about autism with practical suggestions of how to overcome these once perceived notions of children and youth with ASD as being unapproachable and unteachable. Specific strategies for programming and organising physical activity for children and youth with ASD are available to assist the physical educator in providing meaningful and positive movement experiences for each individual.

Reid et al. (2003: 20) point out that organizational principles such as low student-teacher ratios, structured environments, and routines are largely antecedent in nature. Thus, these principles are fundamental to the instructional process; it is important to mention that these principles should precede the actual instruction (Reid et al., 2003). It will require that the instructor take time and make an effort to create a well structured program to accommodate the specific needs of children and youth with autism.

Janzen (1996) highlights the need for structure when teaching students with autism (cited in Houston-Wilson & Lieberman, 2003: 40-41). She states that events, space, and time are three areas that should be organized and structured for students with autism. *In organizing and structuring events*, routines can be used since routines have set beginning and end points; they allow for more predictability and, therefore, reduce sensory overload (Houston-Wilson & Lieberman, 2003) and it is a means of increasing familiarity and reducing anxiety (Reid and O'Connor, 2003). An example of a routine could be to start and end the physical activity session in a consistent manner (Reid and O'Connor, 2003).

In organizing and structuring space a number of considerations can be taken into account for example the teacher need to tell the students where the activity will take place (e.g. gymnasium, soccer field), where the equipment is located, how to move from one activity to the next (e.g. rotating stations and positions, moving from inside to outside) and concrete boundaries needs to be established (Houston-Wilson & Lieberman, 2003). Modifying and planning the use of space and time can provide the necessary structure children with ASD need to participate effectively in class (Hamilton-Pope & Miller, 2006: 13). The organization of the physical structure and space is a vital component of the planning process for physical activity. In an over-stimulating environment, children with autism may attempt to reduce sensory overload in a negative manner (e.g. spinning in circles, covering their ears) to soothe themselves (Hamilton-Pope & Miller, 2006: 13). How can these over-stimulating elements in the environment be eliminated? The environment needs to be adapted to minimize distractions meaning that unnecessary background noise and visual distractions needs to be removed or limited (Hamilton-Pope & Miller, 2006). TEACCH stresses the importance of physical boundaries since distinct boundaries can promote independence for students with autism (Schultheis et al., 2000). Schopler et al. (1995) noted that students are more able to identify and carry out assigned tasks when visually clear boundaries designated the exact space that is available for specific activities (cited in Schultheis et. al., 2000:159).

In organizing and structuring events in time it is important to remember that for the student with autism it is important to know and to understand what will happen next (Houston-Wilson & Lieberman, 2003). Numerous methods have been employed to facilitate events in time. Schedules are one method that has been used to provide children with autism with a detailed overview of the day (Reid & O'Connor, 2003). Schultheis et al. (2000: 160) stated that schedules are designed to accommodate difficulties in understanding the concepts of "what", "when" and "where". Schedules can consist of words, pictures, or objects, which is depended on the developmental level of the individual (Mesibov et al., 2002 cited in Reid & O'Connor, 2003). The use of pictures or visual supports is a visual teaching strategy, which is supportive of the learning styles of students with autism (Fittipaldi-Wert and Mowling, 2009). These visual supports create predictability order, and consistency, which are what students with autism need and want (Simpson & Myles, 1996 cited in Fittipaldi-Wert & Mowling, 2009: 40). Pictures, line drawings, visual activity schedules, spots and lines on the floor, timers, written schedules, and specific boundaries are all examples of useful visual supports (Blubaugh & Kohlmann, 2006; Rao & Gagie, 2006 cited in Fittipaldi-Wert &

Mowling, 2009: 40). Fittipaldi-Wert and Mowling (2009: 42) concluded that visual supports help to provide a predictable and organized environment by appealing to the processing strengths of students with autism or of any student who processes visual information more effectively.

The above mentioned strategies for programming and organising physical activity for children and youth with autism are only a fraction of the guidelines that are available in the literature. These are good and well thought through strategies that provide the physical educator with enough resources to construct a well organised physical activity program for children/youth with autism.

2.2. Phenomenology and Physical Activity

How do you perceive the world? Do you look at the world from a natural science point of view with detached observation, controlled experiments, and mathematical or quantitative measurements (Van Manen, 1990)? Or do you look at the world from a human science perspective, which involves description, interpretation, and self-reflective or critical analysis, (Van Manen, 1990). Natural sciences are inclined to taxonomize phenomena (such as biology) and causally or probabilistically explain the behavior of things (such as in physics), whereas human science aims to explicate the meaning of human phenomena (such as in literary or historical studies of text) and at understanding the lived structures of meanings (such as in phenomenological studies of the lifeworld) (Van Manen, 1990: 4). These two views of the world will have contrasting interpretations of the lifeworld and the lived experiences encountered in this world. The natural sciences will attempt to scientifically explain and quantify lived experiences (e.g. behaviors) whereas the human sciences approach will attempt to interpret the lived experiences in accordance with the reality it has for the individual who lived these experiences.

Phenomenology is the core of the current study. What is phenomenology? Phenomenology is the study of lived experiences or meaning structures as they reveal themselves to an (embodied) consciousness (Connolly, 2008: 241). Van Manen (1990: 9) states that phenomenology aims at gaining a deeper understanding of the nature or meaning of our everyday experiences. One way of gaining a deeper understanding might be to put our ‘natural attitude’ or already assumed ‘truths’ or ‘givens’ about the everyday world on hold (Connolly, 2008). This could open up a whole new world if the phenomenologist is able to experience the phenomena as if they had not been encountered or accounted for

(Connolly, 2008). What kind of questions would then be of interest to the phenomenologist? One could ask directly what specific lived experiences are like (Van Manen, 1990). A good example of a direct question comes from the work of Connolly (2008: 243) in which she argues that phenomenology has allowed her to ask questions such as:

> If I cannot feel my skin as boundary between me and the world, what might I do to create some awareness of the boundary? What if this was a fluctuating experience? What if I discovered strategies to make myself present to myself – might I repeat them? Or the converse: if my skin feels everything, what might I do to protect myself? What surfaces or textures might be more soothing? Or: how do I process my body's physiological responses to emotion? Or: how might I manage one activity when so much is happening simultaneously? How do I know what separates one experience from another?

The above mentioned questions are reflective of the lifeworld of a person with autism. The phenomenological body is constructed as subject/object (Connolly, 2008: 241). This serves to highlight the tension between having and being a body (Lyon and Barbalet, 1994 cited in Connolly, 2008: 241). The subject/object means that it is a person first approach. In being a body; the person experiences the world and interacts with the world and these interactions and experiences impact the persons' experience of being in the world.

Merleau-Ponty (1962), in his book, *Phenomenology of Perception,* grounded perception in the experienced and experiencing body (cited in Connolly, 2008: 241-242). The world as perceived through the body was, for Merleau-Ponty, the ground level of all knowledge, for it is through the body that people gain access to the world (Connolly, 2008: 242). Thus, the body is an integral part of the person. The body expresses itself through movement and indirectly communicates with the everyday world that the body is an integral part of. Rudolf Laban, sought to free the body's expressive potential from the limitations and structure of classical dance forms, and he also sought a return to the body's natural rhythms and to the authentic experience of movement (Connolly & Lathrop, 1997: 30). Rudolf Laban is well known for his contributions to the theories of movement. Connolly & Lathrop (1997: 31-32) stated that, Laban determined that the dynamics of movement lay in the continual swing between balance and imbalance; tension and relaxation. He described the body's movement through space and theorized that these harmonic laws or associations could be used as a basis for creative dance.

Upon reflection on Laban's passion to 'return to the body's natural rhythms and the authentic experience of movement'; I am wondering about the lived body experiences of the person with autism in movement; what are the natural rhythms of the persons' body? Is it possible to see the lived body experiences and expressions of the body of the person with autism as harmonic? How can I best guide the body of the person with autism, to bring a balance between balance and imbalance and tension and relaxation? Would it be possible to use physical activity as a means to evoke the harmonic movements; then leading to creative movement patterns that could potentially enhance the re-discovery of the body's natural rhythms.

Groff (1995: 27) stated that movement is the most ubiquitous means of communication and possibly, the least understood. I cannot help but wonder how I will perceive the lived body experiences of the child with autism and whether my interpretations will resemble what the child is actually expressing through his/her bodily movements.

It is important to create a movement context where the child feels free to move and explore different movement possibilities. Laban's Movement-Framework offers useful suggestions for structuring physical activity so that children get a broad movement experience and through experience gain movement competence (Langton, 2007). The movement-framework is made up of four aspects: body, space, effort and relationships (Langton, 2007: 19).

Below follow a description of the four aspects of Laban's Movement-Framework:

ASPECT	DESCRIPTION
Body	Focuses on what the body is doing, students become skilful in locomotor, non-locomotor, and manipulative skills.
Space	Focuses on where the body is moving, and the student develops skill in the use of personal and general space, and competency in moving in various directions, on different pathways, and through varied levels, planes, and extensions.

ASPECT	DESCRIPTION
Effort	Focuses on how the body is moving. Here, the student develops the ability to use time (e.g., fast/slow), weight (e.g., strong/light), flow (e.g., free/bound), and space (e.g., straight/flexible) to improve the quality or the "flavor" of movement.
Relationships	Focuses on with whom or what the body is relating as it moves. This aspect helps students develop awareness and skill in how body parts relate to one another when moving and how the mover relates to individuals, groups, apparatus, objects, and other factors such as rhythm, music, boundaries, and rules.

The four aspects of Laban's movement-framework provides a well structured foundation from which the physical educator can develop a physical activity program that would meet the developmental needs of students and guide them in a process of discovery and expansion of their movement repertoire. The four aspects are seen as overarching 'themes' of the moving body – which are always present, regardless of the movers, the context or the activity (Laban, 1949 cited in Connolly, 1993). These 'existential' movement themes allow the teacher to plan activities which are *inclusive*, i.e., which operate at a *conceptual* planning level (Connolly, 2008: 236); examples might be 'sending' as an activity rather than perfecting the mature pattern of the overhand throw, or 'stability' rather than learning a handstand balance. This is not to say that overhand throwing and handstands do not occur in movement education settings – they most certainly do; but the emphasis is on understanding, contextualising, developing and refining movement patterns that are relevant and meaningful to the learners at their own skill level; the emphasis is not on everyone in the class doing the same thing, at the same time, or in the same way (Connolly, 2008: 236).

The physical activity program I have developed includes Laban's Movement-Framework as basis from which to encourage the exploration of the *self* through movement. I believe through thoughtful application of the movement-framework, we can provide meaningful, enjoyable skill-building activity and go a long way toward creating a lifelong mover (Langton, 2007). A phenomenological approach to movement and physical activity challenges the reader, physical educator, parents and assistants in the way we see the child with autism and how we intend to meet the movement needs of the child with autism. I get a

strong sense from the above mentioned literature that it is not important that the child with autism measure up to the movement ‘norms’ but *we* need to adapt to the lived-bodily experiences of the child with autism.

Chapter 3: Methodology

In this chapter the methodology for the study will be presented. The chapter starts with an explanation of what action research is and how action research will be employed to make action research relevant to the context of the present study. In the method section the design, participants/context, the procedure, data collection and data analysis will be outlined.

3.1. What is Action Research?

Action research is a distinct research strategy, reaching across and beyond boundaries to encompass practices from many disciplines (Grant, 2007: 266). A commonly quoted definition for action research is:

> Action research is implying a form of self-reflective enquiry undertaken by participants in social situations in order to improve the rationality and justice of their own practices, their understanding of these practices, and the situations in which the practices are carried out.
>
> (Carr and Kemmis, 1986: 162 cited in Norton, 2009)

Upon reflection on the definition, my understanding of action research is that the practitioner is a participant and observer in the 'social situation'; directly involved and engaged. Through the direct involvement in the 'social situation' the practitioner becomes involved in a process of 'self-reflective enquiry'. In this way the practitioner will gain insight into his/her practices and how these practices can be utilised or changed or further developed to be most effective in the 'social situation' to bring about positive change and to best facilitate the way in which learners/students learn (Norton, 2009). Norton (2009) proposes that an essential part of carrying out a pedagogical action research project is to be a 'reflective practitioner'. The term 'reflective practitioner' came from the early work of Donald Schon (1983) who wrote a book called *The Reflective Practitioner*, which is widely recognised as a highly influential piece of work (cited in Norton, 2009). Boud, Cohen and Walker (1993) define reflection as a generic term used to describe the process involved in exploring experience as a means of enhancing understanding (cited in Norton, 2009). Reflection is essential because it is the means by which experience can be turned into action (Norton, 2009: 32). Thus, the practitioner becomes an active learner in the continuous reflective process, which empowers the practitioner in their own development and process of making meaning through firsthand experience. It could be argued that the empowerment of the practitioner through the

reflective process lead to self-knowledge, and this is important if not fundamental to the development of the practitioner/lecturers (Hammersley-Fletcher and Orsmond, 2005: 214 cited in Norton, 2009: 33).

The action research process is interactive across multiple levels: between researcher and participants; emerging (student) and established (supervisor) researchers; and also as we, the researchers, reflect and 'interact' with the process and our developing selves (Grant, 2007: 272). Thus, potential collaborative interactions among the different levels will play a key role in the overall reflections of the 'social situation' and the developments within the 'social situation'. The context of the 'social situation' for the present study is a 'Physical Activity Program' for children with autism.

Action research is guided by some key principles. One of the fundamental principles of action research is that educational action research should be emancipatory (Carr and Kemmis, 1986 cited in Norton, 2009). Bradbury Huang (2010) said that the emancipatory aim of action research is often the trickiest and most alluring to scholars. Nevertheless, in my mind in the current study the physical activity program could potentially remove the apparent barriers or limitations of insufficient opportunities for organised physical activity for students with autism. The physical activity program could also serve as a medium for empowering all active participants as members of knowledge creation efforts that will inform their efforts to take the work forward, thus leaving them stronger (Bradbury Huang, 2010). Another important principle of pedagogical action research is to improve some aspect of the student learning experience. In the context of physical activity for students with autism, it would be to provide the student with autism with the opportunity to learn about different movement possibilities beyond the boundaries of their existing movement repertoire to contribute to a variable movement learning experience, which could potentially broaden their base of foundational movement skills.

Finally, the purpose of pedagogical action research is to systematically investigate one's own teaching/learning facilitation practice with the dual aim of modifying practice and contributing to theoretical knowledge (Norton, 2009). The question now is how does one systematically investigate one's own teaching/learning facilitation practice? Norton (2009) suggests that pedagogical action research involves using a reflective lens through which to look at some pedagogical issue or problem and methodically working out a series of steps to take action to deal with that issue. In the upcoming action research study the 'issue' is a lack

of PA programs in the immediate community in which students reside that is specifically designed to provide for the unique and special needs of students with autism.

METHOD

Where do I start this action research study and how do I address the 'issue' of a lack of PA programs for children/youth with autism? The classic advice is to think of action research as a spiral where you plan, act, observe and reflect (Kember, 2000 cited in Norton, 2009: 68). Norton (2009) proposed a simple five step process, which can be remembered by the acronym ITDEM. This should get the practitioner started.

> Step 1 – Identifying a problem/paradox/issue/difficulty
> Step 2 – Thinking of ways to tackle the problem
> Step 3 – Doing it
> Step 4 – Evaluating it (actual research findings)
> Step 5 – Modifying future practice
>
> (Norton, 2009: 70)

The present study is a qualitative, observational research study. Participant observation (direct and naturalistic) is one of three types of observation that can be used. In the present study participant observation will be used. Being a participant observer means that the observer is actually part of the group of people he/she is observing. Norton (2009) indicates that this approach has some advantages as well as disadvantages. The advantages of this approach is that it gives an 'insider's' view. Thus, the observer could potentially give a more accurate account of the observed behaviour whilst being part of the context in which the observations are made. A potential disadvantage could be that the observer is unable to make objective observations because he/she is too 'close' to the participants (Norton, 2009: 107). The awareness of the advantages and disadvantages of this approach can make the practitioner more attentive to his/her observation processes; enabling the practitioner to provide as accurate an account of the observed behavior as possible. In the rest of this section the cyclical nature of action research will be put into practice to illustrate its role in the physical activity program development process. A description of the methods involved in this action research project will also be presented in this section.

3.1. Participants

At the outset of the discussion about the participants it is important to mention that the personal information of the participants in the current study will be treated with utmost confidentiality. Therefore the real names of the participants will not be used within the text. Participants for the study were recruited from the Autism Association of Oslo, which is a division of the Autism Association of Norway. There were a total number of 7 participants (2 girls and 5 boys) with autism; who were between the ages of 7 and 12 years old with the exception of one participant (a boy) who was 18 years old. The government body; 'Norwegian Social Science Data Services' gave ethical approval for the current research project to be carried out, (See Appendix A).

3.1.1 Recruitment of Participants

A general information letter with all the necessary details about the prospects of developing a physical activity program for children with autism was sent to the Autism Association of Oslo, (See Appendix B). One of the requirements for participation in the program was that the children need to be accompanied by one or two parents or assistants. Included with this information was a parental consent form (See Appendix C), which had to be completed and signed and sent back to the supervisor or practitioner/educator if the child was going to participate in the physical activity program. The physical activity program started with two participants. In the sessions that followed more and more families became interested in the program and new participants continued to join the group up to the fourth session. No new participants joined the group in the last session.

3.1.2 A Brief Introduction to the Participants

I would like to take the opportunity to briefly introduce the seven participants who participated in the physical activity program at the Norwegian School of Sport Sciences (NSSS). The information that will be used in the introduction of the participants is partly my own observations throughout the physical activity sessions and partly information that was provided by the parents/assistants as background information about the child (See Appendix D). I requested the background information about the children to give me an idea about the physical activity experiences of the children and to be aware of any special needs or medical concerns they might have. The first contact with the children was in the first PA session.

Thus, the information provided me as instructor with general information about each participant.

Jonty is seven and a half years old. He has previously been involved in a number of different activities for example swimming. Currently he participates in horseback riding. He seemed to be really enthusiastic about participating in the physical activity program. He enjoyed the gross motor skill activities like the balance beam, trampoline and the balance track, which all belong to Station 1 and Station 3, (more detail about the stations will be provided later). The eye-hand coordination activities were more challenging for him; despite the challenges he seemed to be getting more and more into these activities towards the end of the program.

Jacques is 18 years old. He has participated in a number of different activities before, like cross-country skiing, trampoline jumping, cycling (tandem and tricycle) and bowling. He was good in bowling since this is a familiar activity and he also enjoyed it. He likes to have a variety to choose from and the greater the variety the longer he remained interested in the activities. He enjoyed the activities in Station 1, especially the rings.

Elana is 8 years old. She is a very active young girl and is on the go the whole time. She performed the gross motor skill activities quite well and she showed good balance on the 'balance track'. She is easily distracted by many people in the same room. She does horseback riding and cycling (on a tricycle) and swimming. She seemed to enjoy all the activities in the physical activity program.

Natalie is 11 years old. She seemed to enjoy the 'balance track' and the trampoline. She has a lower activity level than the others. She needs motivation to participate in the activities especially activities that she is not familiar with. She showed a willingness to try some of the new activities which was really good to see. She seemed to be more and more active during the physical activity sessions as the weeks progressed.

Herschel is 8 and half years old. He previously participated in gymnastics for special needs children. Currently he has a swimming session at school once a week. He seemed to enjoy the 'balance track' in the current physical activity program. He is easily distracted and would often leave an activity half way through and then try something different.

Shaun is 9 years old. He has a very active family lifestyle. He is quiet and reserved and seemed to pay attention to the activities while he is performing. He has a low activity level. He seemed to enjoy the 'balance track'. In general he tried to participate in all the activities

that were presented during the physical activity session. He does a lot of cycling with his mother and it sounds like they participate in physical activities as much as possible during the different seasons of the year. He enjoys cycling in the woods a lot. This program was his first exposure to organised physical activity.

Graham is 11 years old. He knows how to swim. He does some activities at school. Many of the activities were new to him. He needed a lot of encouragement to participate in the activities. He enjoyed playing with the rings. He also spontaneously played with a rope. He would just take the rope and swing it round and round and round. He continuously went back to the big red mattress at Station 1, and would just jump on it and land on his buttocks with his legs almost in a crossed position on the landing. He tried some new activities in the second session that he attended, which was good to see.

3.1.3 Attendance:

There were a total number of five, one hour physical activity sessions. One of the participants was present in all five physical activity sessions. Three of the participants were present in three sessions and three participants were present for two sessions. Potentially two participants would have been present in all the sessions but due to an injury outside the physical activity program one of the participants could not attend all the sessions. It was mentioned earlier that new participants continuously joined the group until the fourth session. It was noticeable that once participants joined the program they attended the subsequent sessions.

3.2. Procedure:

The Norwegian School of Sport Sciences (NSSS) were approached by the Autism Association of Oslo in October 2009 with an enquiry for a physical activity program for children/youth with autism. The association specifically requested information/tips on how to adapt physical activity for a group of children with autism. As master student at the NSSS I agreed to undertake the project of designing a physical activity program for children/youth with autism. At the beginning of March 2010 my supervisor and I had a meeting with one of the board members of the Autism Association of Oslo to discuss the proceedings of the physical activity program. The Autism Association of Oslo presented their goals for the physical activity program namely:

- to present their members with the opportunity to participate in physical activity,
- to get the children/youth (target group for this project) active, and
- to provide the association with guidelines for future physical activity possibilities

During the meeting we agreed that the maximum number of participants for the current physical activity program will be eight. As instructor I thought eight seemed to be a reasonable and manageable number of children/youth with autism to attend the one hour physical activity session, once a week. The Autism Association of Oslo had a board meeting later the same evening following the meeting at NSSS and this provided the opportunity for the representative of the board to present the program and to recruit participants. Several days later the suggested dates for the program was confirmed and two children/youth were interested in participating in the program. The program started at the end of March 2010.

3.3. Context and Content of Physical Activity Program:

The physical activity program was held at the Norwegian School of Sport Sciences in a large gymnasium. The large empty space was divided into four sections in which four activity stations; Station 1 – RED, Station 2 – BLUE, Station 3 – GREEN and Station 4 – ORANGE were positioned, (See Appendix E). Each station contained a variety of activities, which enriched the movement opportunities within each station. Station 1 provided opportunities for gross motor skill related movement possibilities; Station 2 provided opportunities for a selection of locomotor movement possibilities; Station 3 provided an opportunity for each individual to detect their own balance capacity and provided different movement possibilities to explore balance; and Station 4 provided opportunities to take part in different eye-hand coordination related activities, which offered different but unique movement possibilities. The main aim with the different stations was to provide the participants with as many different movement opportunities and possibilities as possible.

The planning, organization and implementation of the program originated from the extensive literature review study that was carried out prior to the study. The physical activity program was established from the suggested strategies for physical activity programming for children/youth with autism.

3.4. Data Collection:

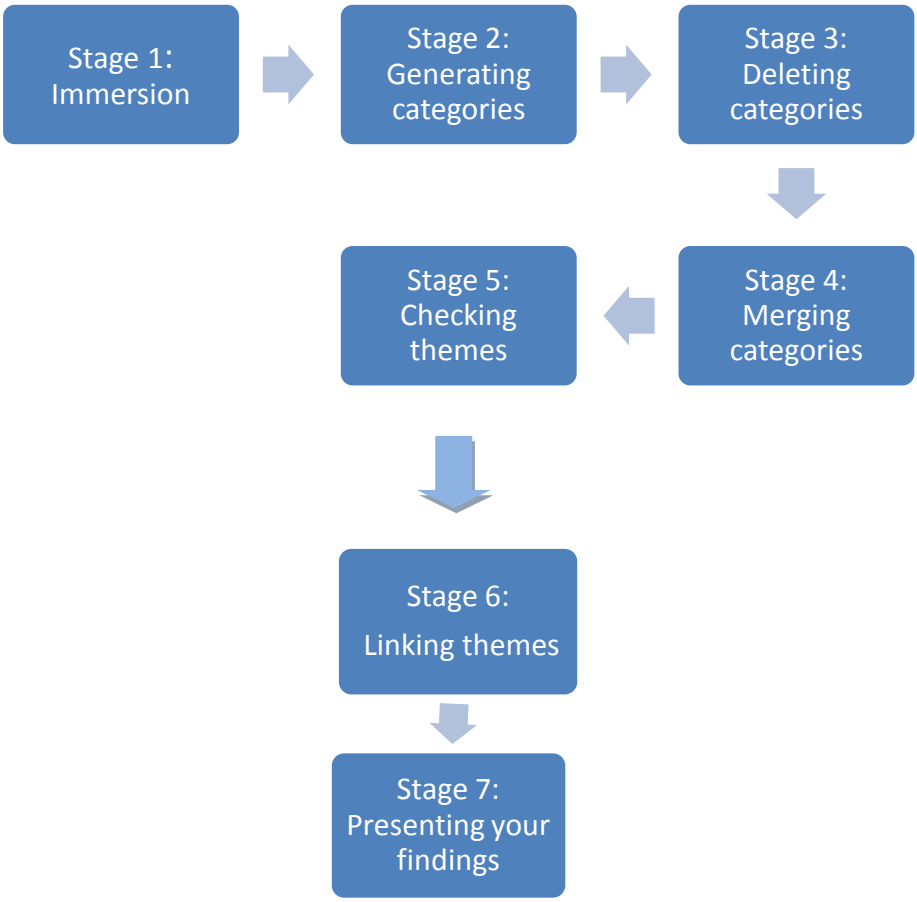
Data were collected through participant observation. As mentioned earlier participant observation means that the observer is a part of the phenomenon he/she is studying. As

observer and researcher it gave me the opportunity to directly interact with the environment and the participants in the environment. The conversations that took place during the sessions gave me an opportunity to learn more about the participants and their experiences of the program (Standal, 2009). I kept a log book and after each physical activity session I wrote down what my thoughts were of the program of the day, what happened during the session, noted insightful conversations I had, and in general reflected on the program. The reflections were an integral part of aiding me in the decision making process for changing and adapting components in the program. The changes within the program will be discussed in Chapter 4. Thus, these reflections resulted in action (Ponte, 2002 cited in Norton, 2009). Close observations were made of the interactions that took place between the environment and the participants and the participants and the parents/assistants as well as the conversations that commenced among the participants and parents/assistants and the practitioner during the physical activity sessions (Van Manen, 1990). These interactions were noted and detailed descriptions were written down in my log book. Additional information was collected from parents through the use of e-mail questions (See Appendix F) that reflected on the physical activity program. The reason for the use of e-mail communication to collect additional information is that I hoped to be able to engage in conversations with the parents/assistants after the sessions but there was no time. The parents had to leave soon after the session because the children could not wait so long. All the above mentioned information collected constitutes my 'raw data' which need to be analysed in the next phase of the research process.

3.5. Data Analysis:

I will draw on thematic analysis to analyse the qualitative data that was collected during this study. Thematic analysis involves a search for patterns (Norton, 2009). What meaning would theme have in a phenomenological description and interpretation context? Van Manen (1990: 79) suggest that making something of a text or of a lived experience by interpreting its meaning is more accurately a process of insightful invention, discovery or disclosure – grasping and formulating a thematic understanding is not a rule-bound process but a free act of "seeing" meaning. Thus, the thematic analysis is not only a search for patterns but it is a process of discovering meaning within the text, which is a presentation of the lived experiences of the participants of the participants in the study.

Norton (2009) divides the process of thematic analysis into seven stages:



The stages for thematic analysis suggested by Norton (2009) provide a good starting point for the data analysis process. In the data analysis process I went back to my log book and started to highlight key words for example enthusiasm, happy, interested etc. I looked for words that were key descriptors of the physical activity program and words that described experiences and interactions between the participants in the physical activity environment. I constructed subheadings that provided a structure to use as I categorized the experiences of the participants under the appropriate subheadings. I used specific incidents to illustrate the lived experiences of the participants. I interpreted the lived experiences as the experiences related directly to the physical activity program. I had one or two questions in my mind during the analysis; what were the children and parents/assistants' experiences of the program, and how did the participants relate to one another?

3.6. Trustworthiness

McNiff and Whitehead (2009: 75) stated that claims to knowledge are also called 'truth claims'. In the context of this phenomenological oriented study I would like to state that I have attempted to provide a truthful account of the lived experiences as I encountered them. Thus, I have attempted to tell the truth. I am aware of the fact that there are concerns about the generalizability of action research studies and I therefore do not intend to generalize the results of this study. It is known that Autism Spectrum Disorder (ASD) is a heterogeneous condition (Connolly, 2008), and therefore I do not think it is reasonable to generalize the observations in this study to the general population.

One of the means to increase trustworthiness of the data is 'member checking' (Kvale, 1996 cited in Standal, 2009: 33). In this study I have made observations during the physical activity sessions and I made certain interpretations of the observations. After reflection on my interpretations I had conversations with the parents/assistants during the following physical activity session to enquire whether my interpretations reflected their experiences (Standal, 2009). Thus, I did not only rely on my own interpretations but I valued the interpretations of the parents/assistants. In some cases I have received contradictions to my initial interpretations. I would like to argue that in this study some contradictions enriched the text and it was thought provoking and lead to considerations for future studies. I would like to state that I do not claim my interpretations as the only true interpretations since I made these interpretations based on my background and values, which will be indifferent to the readers' perception of the world.

Chapter 4: Results and Discussion

> I have chosen to suspend cultural norms and inscriptions regarding appropriate behaviour –especially as they relate to embodied expressions of lived experience characteristic of people with ASD – and have chosen to accept these embodied expressions as serious sites of somatic exploration and understanding (Connolly, 2008: 241).

At the beginning of this chapter I would like state that I will approach the results and discussion of this study with the same mind as Connolly (2008). It is my intention to distance myself from the 'norm' and to explore the alternative; to discover the meaning of the lived experiences I observed during the extent of the physical activity program for the children/youth with autism. In this chapter an overview of the outcomes of the strategies implemented in the physical activity program as well as the concurrent program adaptations will be discussed. The emerging themes from the data analysis will be shared. Lastly, I will delve into the lived body experiences of the participants, and expectantly this will aspire to reveal a part of the meaning of these experiences.

Before I discuss the strategies implemented in the physical activity program I would like to provide some examples of activities from two of the activity stations.

Station 1 – RED

Station 3 - GREEN

4.1. Strategies Implemented in the Physical Activity Program:

The effectiveness of the strategies implemented in the physical activity program can guide the instructor to adapt and improve the program as necessary to the needs of the participants. Creating adaptations to enhance success and the use of good instructional techniques can be considered as motivational (Reid et al., 2003). Thus, the instructional strategies might have an influence on the child's motivation to participate in the program and without careful planning and continuous adaptation there could be an influence on the level of motivation.

4.1.1. Structuring Events

- At the beginning of the session everybody gathered for the greetings and welcoming
- At the end of the session everybody gathered again in the same area to end the session

Every session started and ended in the same manner, which offered consistency and structure to the program. This is one example of how a routine can be used to establish predictability, which provides a sense of familiarity to the child with autism. Thus, this could provide a feeling of 'safety' and reduce anxiety (Reid & O'Connor, 2003). I would like to refer to an incident that occurred during one of the physical activity sessions. One of the children came late for this particular session. I noticed that the child seemed to be upset. After a conversation with the dad, I learned that the child was upset and felt out of place because he was late and could not start the activity session at his regular starting point. Thus, this is a very good example of how easily a session can have a chaotic start for the child with autism if the routine changes unexpectedly. This illustrates the role and importance of routines for children with autism.

4.1.2. Structuring Space

- The parents and children were informed that the PA program will be in a gymnasium
- The large gymnasium was divided into four sections; lined up next to each other
- The different sections were separated by benches
- Each activity station provided a variety of movement possibilities
- The children could start the session with the activity of their choice and then rotate through the four stations; permitted they participated in each
- The curtains of the windows overlooking the sports fields were closed

The physical activity environment was characterized by clearly defined boundaries, for example the benches were used to define the boundaries of the activity stations and cones and ropes were used to indicate the boundaries of specific activities. Schultheis et al. (2000) suggested that boundaries in the gymnasium will eliminate the overwhelming atmosphere of large open spaces for many children/youth with autism. The physical activity program offered the participants numerous activity choices within each activity station; thus, included diverse movement options. O'Connor, French, & Henderson (2000) suggested that different learning or activity stations could potentially increase motivation in children with ASD (cited in Crollick et al., 2006). Thus, the structure in the space could have an impact on the child's motivation.

In general students with autism are more able to identify and carry out assigned tasks when visually clear boundaries designate the exact space that is available for specific activities (Schultheis et al., 2000). The children and parents/assistants seemed to respond in a positive manner to the structure of the physical activity environment; they were able to immediately identify the different activity stations. The feedback that I received from the parents indicated that the arrangement of the environment corresponded well with methods of instruction that are familiar to the children. Thus, indicating that consistent methods of instruction across different environments can be beneficial to the child since it immediately creates a sense of familiarity to the child. It can be assumed that indirectly it also eases the parents' minds since they know that their children will respond to the structure and organization of the environment.

One of the purposes of the visually clear boundaries is to reduce the number of external distractions (Houston-Wilson & Lieberman, 2003; Schultheis et. al., 2000 cited in Fittipaldi-Wert & Mowling, 2009). I would like to refer to an incident that occurred with the first physical activity session to illustrate the elimination of external distractions. Minutes after the parents/assistants and children entered the gymnasium one of the parents requested to close the curtains of the windows that overlook the sports fields. I did not object to this request, since I purposefully did not close the curtains to observe the reactions of the parents toward the environment. This incident is an illustration that the parents are well aware of potential distractions and that they have knowledge of how to organize the environment to best facilitate the child's needs.

The structure that the environment offers, after considerable modification and organization of the physical activity space, could have potential benefits to the child with autism. Schultheis et al. (2000) observed an increase in independent student behavior. Independent student behavior can be a valuable outcome of a physical activity program since this means that the program empowers the individual to become independent. Another possible benefit that was identified in the study by Schultheis et al. (2000) is that the boundaries allowed for maximum time on task for the student through decreasing external stimuli that might have distracted him or her.

4.1.3. Structuring Events in Time

- Each activity station was labelled with a coloured square on the wall, and the order remained the same for the duration of the physical activity program
- Physical demonstration and verbal instruction was used to introduce the activities
- The children were told how long they will participate at each station
- The change of activities were signalled with a coke bottle with beans on the inside and this almost sounded like a tambourine
- Minimal changes occurred within each activity station, (this will be discussed later)
- Activity sheets (See Appendix G) were provided

As mentioned before the four activity stations were distinguished from each other by different colours; RED, BLUE, GREEN and ORANGE. In conversations with parents/assistants during the physical activities some parents remarked that their children were able to recall the activities that were associated with the different coloured activity stations. These remarks are consist with findings in literature that students were able to identify and remember clearly marked activity areas, and as a result they were able to effectively follow their schedules and relied less and less on teacher prompts (Schultheis et al., 2000). I would like to mention an incident that illustrates how observant one of the children was upon entering the gymnasium for one of the physical activity sessions. The child and parent came a few minutes before the session started and the child immediately noticed that the designated colours for each station was still missing and the child also noticed that I placed the trampoline in a different position. The child immediately identified the changes in the environment. Thus, in my view the child becomes complacent within the structured environment and it can be assumed that it almost becomes an expectation that little changes will occur within the environment.

The instructional methods used to introduce physical activities to children/youth with autism needs to be adapted to suit their needs to be effective. In general it is accepted that verbal explanation is not the most productive method to instruct children/youth with autism. I have used physical demonstration in conjunction with verbal explanation and this seemed to be well received by the children and parents. Surprisingly the children paid attention for the duration of the demonstrations. I would like to suggest that similarly to the function of schedules that accommodate difficulties in understanding the concepts of 'what,' 'where,' and 'how'; the physical demonstrations facilitated the comprehension of the 'what' and 'how' for each activity (Schultheis et al., 2000). I noted from conversations with the parents/assistants that the combination of the physical demonstration and verbal explanation seemed to be an effective method of instruction. The feedback about the method of instruction from the parents/assistants is consistent with findings in literature that the combination of visual and verbal prompting is an effective way to explain an activity or skill to a child with ASD (Reid et al., 2003; Reid, Collier, & Cauchon, 1991 cited in Crollick et al., 2006).

The children/youth responded well to the sound of the coke bottle for the rotation of activities. The moment that they heard the sound they knew it was time to progress to the next activity station. Although there is a suggestion in literature that it is helpful to provide the children/youth with forewarning signals to make transitions easier (Houston-Wilson and Lieberman, 2003), it did not appear to be necessary to implement this method of instruction with this group of children/youth.

It is important to remember that there is not just one correct or best method of instruction for children/youth with autism (Fittipaldi-Wert & Mowling, 2009). The individual needs of each child need to be taken into consideration when considering suitable methods of instruction (Crollick et al., 2006). Sherrill (2006) suggested that students seldom fail when teaching is based on individual differences. Thus, success in physical activity means that children will have positive movement experiences that could in turn affect the sustainability of lifelong physical activity.

4.2. Program Adaptations:

The action research approach with the cyclical process of identifying a problem, thinking of ways to tackle the problem, doing it, evaluating it and modifying future practice (Norton, 2009) was utilized to make the necessary program adaptations during the period of the

physical activity program. The adaptations took immediate effect in the current study to continuously improve each activity session. Specific changes and reasons for changes will be discussed in the subsequent section.

I have identified a few indicators that contributed to the changes and adaptations in the physical activity program, namely; (a) parents' suggestions, (b) children's interests and needs, (c) variety of movement possibilities, and (d) positive or negative movement experiences.

4.2.1. Emerging Changes in Events

As mentioned previously each physical activity session began and ended in the same manner. Minor changes in the proceedings after the beginning of the sessions occurred during the third and the fourth sessions, when new children became participants in the physical activity program. The new children received individual instruction at the different activity stations to avoid the loss of activity time for children who have been present in the first and second session, during which group demonstrations were done to illustrate the 'what' and 'how' of the activities.

4.2.2. Emerging Changes in Space

The content and construction in the physical activity space changed periodically as the sessions progressed. I would like to mention a few changes and modifications that occurred. After the first session (See Appendix H) parents suggested the inclusion of a skipping rope in Station 2 – BLUE; they mentioned this will be a new movement challenge for the children/youth. The children/youth noticed the gymnastic rings in the gymnasium and they indicated that they are interested in the rings and therefore the rings were included in Station 1 – RED, for the subsequent sessions. Thus, the program development included cooperation between the instructor/researcher, the parents/assistants and the children.

Further changes occurred to enrich the movement possibilities in Station 1 – RED, Station 2 – BLUE and Station 4 – ORANGE. The main motivation for adding additional activities in the activity stations were to provide Jacques with more challenging movement possibilities. Jacques' assistants expressed a need to have more stimulating activities to increase his activity time and to keep him interested in the activities for a longer period of time. The assistants expressed that at times it is challenging to keep him motivated when he reaches the point of boredom. In general it is suggested that children with autism have low motivation.

This incident with Jacques prompted me to speculate about the possibility that children with autism might seem to have low motivation due to the boredom that they experience because they do not get sufficient stimulation from the attempted activity. Thus, it is not only because they seem to not be interested in physical activity but because of the lack of stimulation by the activity. I would like to suggest that children with autism will be interested in physical activity if the activities are interesting and includes an element of fun. Station 2 – BLUE seemed to be the activity station that proved to be most challenging due to the more 'free' locomotor possibilities it had to offer. Therefore, different pieces of equipment were introduced during the progression of the program to attempt to enrich the movement possibilities and to stimulate more creative movements.

A specific incident at Station 2 – BLUE also encouraged the instructor to consider modifications to the paper and paper roll activity – in which the child had to balance the paper roll on the palm of the hand. Both the children who came to the first activity station really struggled to carry out the task. Feedback from the parents suggested that there is a possibility that the children/youth do not perceive and interpret the aim of the activity and therefore it is difficult to perform the task. I then introduced a plastic plate and tennis ball – the child had to balance the tennis ball on the plastic plate while in locomotion. This modification was successful for two reasons. The first reason is that one of the parents shared with me that this was a thoughtful modification and that her son became more successful with the task. I also noticed that the other children/youth were able to perform the activity successfully.

4.2.3. Emerging Changes in Time

The physical activity program started out with 10 minute bouts per station. Thus, the children/youth rotated from activity station to activity station every 10 minutes. Upon reflection and communication with my supervisor a suggestion was made to adapt the activity time per station to 5 minutes. This suggestion originated from an observation that the activity level of the children dropped after a certain amount of time. The time adaptation had a positive impact on the time at task, attention level of the children and also in general the activity level of the children was more consistent. The parents/assistants commented on the effectiveness of this adaptation. The time adaptation appeared to also have a positive impact on the motivation of the children. The parents/assistants mentioned that they no longer needed to put so much effort in keeping the children motivated. The effects of this adaptation

are consistent with a suggestion by O'Connor et al. (2000) that a frequent change of activities can increase motivation (cited in Crollick et al., 2006). Crollick et al. (2006) suggests even shorter bouts of activities, which lasts between two or three minutes, which will keep students engaged. The 5 minute bouts worked well, and I assume that the time per activity station could be determined by the observed activity level and adjusted accordingly. It would be difficult to generalize the time per activity session since it will differ from group to group depending on the individuals within the group. It is important to mention that the 'time' is not the issue here but the 'activity level' of the children since it is directly connected to their experiences of the physical activity.

The amount of changes during the physical activity program development was kept to a minimum. I can recall a short conversation with one of the parents after the first time that their child participated in the program:

> *Karin*: How was the program?
> *Parent*: It was good and challenging.
> *Karin*: Will I see you and Natalie next week?
> *Parent*: Will the program be the same?
> *Karin*: Yes, the program will be the same; if there are changes it will be minor.
> *Parent*: It will be good for Natalie if it is similar.

I could hear a certain amount of concern in the parents' voice. It was not the last time that I was asked whether the program for the following week will be the same or not. It was a general concern from the parents. This concern is a reality since it is important for children with autism to get familiar with the new environment, have good structure, and a set routine. Thus, there will be a period of adjustment to the environment, other participants and the instructor (Schmidt, McLaughlin, & Dalyrymple, 1986 cited in Reid et al., 2003). Therefore, the new environment needs to be consistent to give the child with ASD time to adjust.

Another adaptation that was introduced was 'Activity Sheets' for each station with a variety of movement ideas within each station. I reached a point during the physical activity sessions that I felt detached from the environment even though I was a participant in the phenomena I was studying. The increasing number of children left me feeling torn in two. I was not able to be everywhere at the same time. The intention with the 'Activity Sheets' were to provide the parents/assistants with some alternative movement ideas for each activity station to encourage the children to explore a variety of movements. The parents/assistants welcomed

this idea. Indirectly the parents also became more independent in the physical activity session. In general schedules provide structure and guidance with less direct adult control, thereby promoting independence (Reid et al, 2003) for children/youth with ASD. I would assume that the 'Activity Sheets' could have the same outcome for the parents, in which they are less dependent on the instructor for movement ideas.

To conclude the emerging adaptations; the cyclical activity analysis was an effective method to continuously evaluate the activity sessions and to determine where changes or adaptations were required to improve not only the program but the movement experiences of the children. If the children/youth continuously experienced failure with the paper roll and paper activities in Station 2 – BLUE, they would have been discouraged and they would lose interest in the program and they will become less responsive (Dunlap, Koegel, & Egel, 1979 cited in Reid et al., 2003). The activities presented in the physical activity program varied in the degrees of difficulty. The gross motor activities seemed to be less challenging than the eye-hand coordination activities in Station 4 – ORANGE. One of the assistants mentioned that the eye-hand coordination activities were more 'skilled' activities and that these activities demanded more concentration from the children/youth. Thus, making these activities more challenging for the children/youth with autism. It is important to keep in mind that the activities should be challenging but not impossible (Reid et al., 2003). Station 1 – RED seemed to be the overall favourite activity station. It could be assumed that this activity station was the 'easiest' and the children/youth felt most comfortable with the movement possibilities that the activity station had to offer and therefore they preferred this station.

The adaptations and changes that were implemented throughout the duration of the physical activity program seemed to be effective. Finally, it is important that children with ASD are provided with opportunities to experiment with different activities to find potential preferred lifetime activities. Children/youth are capable of successful participation in carefully organized environments (Reid et al., 2003) with modified teaching strategies to suit individual needs. I have learned that it is not only adapting the activities but adapting the environment that will help promote positive movement experiences.

4.3. Making Meaning

What were the children/youth, parents/assistants and instructors' experiences of the physical activity opportunity? How did the participants relate to the space? How could the

interactions in the physical activity experience impact on the child with autism's experience of being in the world?

4.3.1. Children/youth's Interaction with the Environment

I have obtained permission from the parents of two of the children to use some photos as illustration of the children's involvement within the environment. The first picture is an illustration of the '*Balance Track*' and the second picture is the '*Plastic Walking Cup Track*'.

Station 3 – GREEN

Station 3 - GREEN

It is 17:30 Thursday, 25 March 2010 and the first participant arrived for the physical activity program. As soon as he entered the gymnasium he immediately wanted to start with the activities. His parents held him back for a moment, and asked whether he could play in the activity stations while we are waiting for the other participant(s) to arrive. I said certainly and he could not start quick enough.

The first participant seemed to be enthusiastic to participate in the physical activity program. I got the sense that he was excited since he was so eager to start. He tried different activities for a couple of minutes until the other participant arrived. The second participant also wanted to start with the activities soon after he arrived. I was pleased with the reaction of the children/youth that wanted to participate so eagerly. The children/youth seemed to be interested in the activities. In general findings in literature suggest that children with autism have low motivation levels. It is one of the main reasons why there are concerns with regards

to opportunities for participation in physical activity. In the subsequent sessions the sense of enthusiasm remained constant till the end. I noticed in the last activity session that the children continued with their activities for minutes after the last signal was given. It seemed like the children did not want the session to end. The overall feeling I have about the physical activity program is positive. The enthusiasm and excitement indicated to me that the children enjoyed the activities. Thus, one could assume that the activities were inviting and seemed to appeal to the children. The interpretations I made about the lived experiences I observed during the physical activity sessions are in accordance with the experiences the parents/assistants have of the children/youth. The children/youth seemed to be happy and content with the physical activity program.

> Elana quickly moves across the balance track, then jumps down and fall on her knees. She gets up quickly and move across the room and runs behind the curtain. The next moment she moves to the next activity station and quickly picks up some bean bags and throws them toward the hoops. Then she moves swiftly across the balance beam.

Elana seems to have a high activity level. The scenario gave rise to some questions; is this her way of being in the world or is this perhaps her reaction to the new environment. One could also ask whether physical activity should facilitate her fast movements or should physical activity be used to slow her down? Upon reflection on my approach to the physical activity program I realised that this physical activity program do not intend to intervene but to rather let the child 'be'. Thus, at present I would like to rather prompt her to try alternative movement speeds to broaden and stimulate her movement experiences within the boundaries of the current physical activity program. The emphasis is not on changing her fast movements but just encouraging alternative movements. In the Laban Movement-Framework the experience of time in 'effort' incorporates slow and fast. Moving slower or faster can potentially improve the quality of movement (Langton, 2007). I can recall an activity session that Elana's mother came with her; I noticed that she seemed more relaxed and did not rush through the activities in comparison to the activity session that she came with her assistants. I could actually notice that she had good movement abilities. Thus, the moving slower, with more focus revealed the latent quality of the movements. Whether this is her way of being in the world or her way of reacting to this particular environment, it remains important that she can 'be'. Elana seemed to enjoy the activities and it appeared as if she liked coming to the PA program.

I would like to share an incident from the last activity session:

> *Karin*: Bye-bye Elana, thank you for coming again today.
> *Elana*: Bye, see you next time, (I could not understand her and her assistant translated her words to me).
> *Karin*: Today was the last session.
> *Elana*: No, next time?

Elana's reaction indicated to me that she expected to have another session the following week. I noticed the disappointment in her face when I told her that there will not be another session next week.

> Jonty is on the balance track. The next moment he comes running across the room and says a few words in Norwegian. His mother followed him and I asked her to please translate what he just said. It turned out that he wanted me to come and look at his performance of the activity.

As Jonty came running across the room it was clear that he had something in mind, he seemed excited. As instructor, I did not immediately understand what he wanted, but with translation the message was clear. I noticed as I watched him perform he would look up every once in a while to make sure that I was watching. He seemed to be really pleased that I came to watch his performance on the balance track. He seemed to be confident in his performance and I got the idea that he wanted to show me what he can do. Thus, he has become more competent on the balance track through the movement experience he gained in the physical activity program. To a large extend this is an illustration of a positive movement experience.

4.3.2. Parent Involvement

> It is the first activity session and Jacques is on the balance beam. He is getting support from an assistant as he walks to the other side of the balance beam. His mother is waiting at the end of the balance beam. She is encouraging Jacques to keep walking toward her. She waved at Jacques and pointed to a higher point on the beam to get Jacques to look up and not at his feet.

I observed that Jacques' mother tried her best to encourage Jacques to move forward on the balance beam. His mother really seemed involved in what he was doing. There was

continuous interaction between Jacques and his mother as he progressed through the different activity stations. It appeared that they related well to each other and Jacques responded well to her guidance and encouragement. Thus, she seemed to be supportive of Jacques' participation in the physical activity program.

The interaction that I observed between Jacques and his mother could be observed among the other children/youth and parents as well. I noticed that the parents took more and more initiative as the activity sessions progressed. For example, one of the parents spontaneously showed her son a movement routine with rhythm at Station 2 – BLUE. I noticed that the parents were in general actively involved in their children's physical activity participation. The parents showed excitement when their child for example, threw the bean bag into the hoopla. There were a few moments that the parents also tried several activities within the activity stations. The parents did not only guide and instruct their child but they participated with the child. I would assume that the message conveyed through this level of interaction could serve as encouragement to the children and give them a sense that *they are not in this alone*.

> *Karin*: Hei, my name is Karin and I am the instructor for the program.
> *Parents*: Hei, my name is Karla and my name is Kris.
> *Karin*: Welcome at the physical activity program.
> *Parents*: We are looking forward to the program. The activities seem to be interesting.
> *Karin*: I hope the children will enjoy the program.

I can still vividly recall this moment of the first introduction. I was nervous and excited at the same time. I remember the relief that I experienced the moment of the introduction to the above mentioned parents. They both had good spoken English. The impression of the first contact was positive. I later discovered that all the parents could speak English. I was relieved when I realised this, since I was concerned about the language-barrier between me and the parents and me and the children and what affect that could have on the program. The communication throughout the program was easier than expected. The parents showed a willingness to share their experiences, the child's experiences and the experiences with the program.

Karin: What is your experience of the program at this point?
Parent: It is good.
Karin: Has Herschel been involved in physical activity previously?
Parent: Yes, he did gymnastics for children with special needs but we stopped the activity because he caused distractions in the class.
Karin: It is a pity he could not continue. Does he do anything else now?
Parent: He does swimming once a week.
Karin: I hope he will enjoy the program and you do not need to be too concerned about his behavior.

This conversation with the parent was really good. It was informative and I had the opportunity to put her at ease by sharing with her that she does not need to be too concerned with her son's behavior. The parent seemed a bit more at ease once I shared with her that her son can just 'be'. Upon reflection of this incident I came to realise that parents might often be concerned with their children's behavior and reactions in social situations. I assume that these concerns can often influence parents decision making process to enrol the child for an activity or not, especially when it is an integrated program.

Good interactions appeared with the parents and assistants too. The interactions are valuable and is an important part of the action research process since as instructor I am a participant in this environment just as much as the parents/assistants and children. I can recall moments during which assistants shared information with me about what the child likes or dislikes or what the child needs for the activity session to be more effective for the particular child. The interactions were important for the program development process. The physical activity program development is dependent on the collaborations between the instructor, parents/assistants and children. Overall the interactions with the parents/assistants, children and instructor were satisfactory.

I would like to mention one last observation of the parents' interaction with the environment. I noticed that during the first activity session that one of the representatives from the board members of the Autism Association of Oslo took notes of the activity session and also took some pictures with his mobile phone. And he also took many pictures during the last activity session. One of the parents also took pictures of the activities and specifically of her son. I learned from the board member and parent that they want to remember the activities and that the pictures were taken to remind them of the content of the activity program. The parent

also seemed to be proud to take the pictures of her son participating in the physical activity program. Thus, the parents demonstrated sincere interest in the physical activity program.

4.3.3. Instructor Engagement with the Participants

As previously mentioned as instructor I was concerned about the communication with the parents/assistants and children/youth. The spoken English abilities of the parents made it easier than expected to communicate and interact with the participants.

> Today was the second last activity session. Graham was one of two new children that joined the physical activity session for the first time today. Graham immediately started to play with the rings; he would spin them round and round and let them collide with each other. The next moment he walked across the room and untangled a rope from one of the activity stations and started to play with the rope. Once the activity session started I demonstrated to Graham how to perform the activities and then encouraged him to try the activity but he just stood there and watched me[2].

In a conversation with Graham's father I learned that Graham does not like it when demands are placed upon him. When Graham just stood there and watched me it seemed that he did not want to participate in the proposed activity. His father mentioned that he is also trying to figure out what I want of him. In many ways this is part of the adaptation to the new environment. As instructor I instinctively tried another method to encourage Graham to participate in the new environment. I asked him to follow me on the balance track; Graham did not hesitate and immediately followed me on the balance track. Thus, the different approach seemed to be a more suitable approach with Graham, since it was not a typical learning situation in which the child was told what to do but there was cooperation between the instructor and the child. Thus, it might be assumed that the approach is seen as more positive by the child and therefore he is willing to respond to the alternative method of instruction. It is important to continuously be aware of the individual needs of the children/youth. This became an instrumental moment in my learning process as instructor. I learned that there are alternatives and that it was not the child that was unwilling to participate but it was the method of instruction that needed to be adapted.

Throughout the physical activity program I consistently made an effort to not only speak to the parents/assistants. I always asked the children/youth direct questions. The

[2] This text was included from my log book.

parents/assistants would translate the questions to the children/youth and then I would get an indirect response from the child via the parents. Personally, I would have preferred to directly communicate with the children/youth in Norwegian. The reason is that I feel the translation creates a distance between me and the child. I assume that through direct verbal language with the children/youth I could have been more effective in encouraging the children/youth in their movement discovery and experience. I would have also been able to hear directly from the children/youth which activities they liked and which not and what kind of activities they would prefer to see in the physical activity program. Thus, there is a limitation in the direct communication with the child. I have learned to take note of the non-verbal communication of the child. The interpretations of the non-verbal communication might not be 100% accurate but it was an alternative way for me to become more involved in the environment. In the end, the non-verbal communication is inherently part of the child's bodily experiences.

> *Karin*: What did you think of the method of instruction, was it good or bad - why?
> *Parent*: You were calm and gave clear instructions, which were good. You met the children in a good way, and it was good that you spoke directly to the children and not just to the parents. Even though the children don't speak English (much), it was important to both them and us parents that you relate to them.

The question above was one of the questions that I asked the parents in an e-mail (See Appendix F). I did not realise that my interaction with the children were noticeable. It is important feedback for instructors. The communication and interactions at all levels are important for the program development.

4.3.4. Physical Activity Program and Phenomenology

The intentions of the phenomenological centred physical activity program were to meet the individual needs of the children and to guide them in a process of discovery and expansion of their movement repertoires. The four aspects of Laban's Movement-Framework; body, space, effort and relationships were an integral part of the movement experiences of the children/youth. The children were encouraged to explore 'what' their bodies were doing e.g. different locomotor activities like running, skipping, target throwing etc. They were also encouraged to explore 'where' the body is moving e.g. in different directions for example forward, backward, sideways and at different levels for example crawling on all fours, crawling on their stomach underneath the chairs and walking on the balance beam at a higher

height. They were also encouraged to explore 'how' the body is moving e.g. in relation to time (fast/slow) and weight (strong/light) for example to run fast or to walk slowly and to walk like an elephant which is a strong movement. Lastly they were encouraged to explore with whom or what the body is relating as it moves e.g. how the body parts relate to each other, for example this could have been explored during the 'plastic walking cup track', and this is not the only activity that offered this opportunity. Also how they relate to the boundaries, each other and the equipment used during the activities.

As illustration of how the children related to each other I would like to recall an incident that occurred during the activity sessions. At the end of each session the children were afforded the opportunity to spend the last few minutes of the session at their favourite activity station. Most often Station 1 – RED, was chosen by all the participants. Thus, all the children present would then participate together. I did not observe any difficulties during this time; they each went to the one activity in the station that they wanted to perform. They all seemed content and enjoyed their favourite activity.

The children/youth were encouraged to explore different movements. There were no right or wrong movements. Thus, the children's movements were not measured according 'norms'. The environment presented the children/youth with an opportunity to just 'be'. Phenomenology allows the instructor to defer assumptions of what is 'normal' and fixed ideas about what needs to happen (Connolly, 2006). Thus, the children/youth were allowed to be themselves in the environment. There were no behavioral expectations that the children/youth had to measure up to. It was their environment and they could feel free to express their lived experiences within this environment. Thus, the environment can be perceived as 'autism friendly' (Connolly, 2006).

Chapter 5: Conclusive thoughts and Recommendations

In this final chapter I will reflect on some of the insights I gained through the action research process. I will also reflect on the contributions of this study and share the limitations of the study. Finally, I will give some recommendations for future research.

5.1. Insights through Action

I would like to recall one of my thoughts during my literature review. After much reading I reached a point where I asked myself: 'Is it really necessary for children with autism to have so much structure?' Through the implementation of the suggested strategies in literature and the positive response of the children to the structured environment; I now realise that it is good for children with autism to have structure. The structured physical activity space offers the child a comfortable and supportive environment (Hamilton-Pope & Miller, 2006). One example of a supportive environment is an environment that makes use of visual supports that enhances comprehension as well as accessibility (Mesibov, 2004 cited in Blubaugh and Kohlmann, 2006), which can help children to be more successful in physical activity (Blubaugh and Kohlman, 2006). The accessible environment offers the child the opportunity to actively participate in the activities and the successful participation could potentially lead to overall positive lived movement experiences. These positive movement opportunities and experiences can translate into greater movement confidence (Lavay, 2003: 42). I would like to agree with Lavay (2003) that all children need to be afforded opportunities to enjoy and successfully participate in movement.

In my reflection on the program development process I realised that the collaborations with the parents/assistants played a central role in the program development. The continuous interactions between the parents/assistants and the children were important since this was the children's support during the physical activity. The interaction between the instructor and the parents/assistants were important because it presented an opportunity for an exchange of ideas and moments to review the positive and negative aspects of the activities. Many of the adaptations and changes originated from the collaborations with the parents/assistants. The children's observed experiences also contributed to the adaptations and changes of the activities. For example, when I noticed that the children struggled with the paper and paper roll activity in Station 2 – BLUE, I adapted the activity. Thus, the collaborations between the children/youth, parents/assistants and instructor was essential for the program development. I will certainly consider collaboration with parents/assistants in future practice.

I would like to elaborate on the parents' involvement in the physical activity program. In my view the involvement of the parents seemed to be good and I would like to argue that the parent involvement is essential for the development of a physical activity program. However, in conversations with parents I learned that there are two interpretations about the parent involvement, one parent expressed that it was a positive experience to be involved with the children and to 'guide' the child during the physical activity session and another parent expressed that it was like becoming a 'coach'[3]. Thus, the 'guide' and 'coach' roles stand in contradiction to one another. I would like to make it clear that there is no right or wrong experience in this situation. Both these experiences are valid and the former gave rise to the question of parent involvement with the physical activity program. How much should the parents be involved? This was a valuable contribution from the parents. The incident was meaningful in my learning process, since it made me aware that interpretations based on observations alone are not necessarily the true experience for every individual. Through interaction with the participants within the environment useful information can be collected.

A question that came to mind during the literature review, was whether it is enough to use the claims of physical and mental health benefits, to encourage participation in physical activity? I do not have a conclusive answer to this question. I would like to, based on my observations suggest that physical activity should be promoted as a fun and enjoyable activity. The setting and equipment should be natural stimuli or cues to activity (Reid et al. 2003: 23). The environment should elicit spontaneous activity, thus be inviting so that the children/youth are motivated to participate (Reid et al. 2003). I can recall a few incidents in the present study where spontaneous activity occurred during the physical activity sessions with the children/youth with autism. I vividly remember how one of the children used the plastic plate for activity Station 2 as a frisbee. Another example was when one of the children decided to take the plastic walking cups and tried to fit them on the cones that indicated the boundaries for the activity. And there was an incident where one of the children tried to hoopla with the hoopla. I know that it is the intended purpose of the hoopla but it was not one of the intended purposes for this program. The hoopla was used as a boundary, a target and to climb through while in motion. Thus, the physical activity program did elicit spontaneous activity which could mean that the environment was inviting.

[3] In the context of the conversation 'coach' was seen as an added responsibility to all the other roles the parents have to fulfil for the child with autism.

Physical activities have social and/or cognitive demands that should be matched to the participant (Reid & O'Connor, 2003: 21). Physical activities are a natural venue for promoting positive social interaction (Kitson, 1993; O'Connor, French, & Henderson, 2000; Schleien, Heyne, & Berken, 1988 cited in Reid & O'Connor, 2003). Thus, physical activity can also be promoted for the social interaction aspect of physical activity.

Consistency is one of the main ideas that run through the physical activity development process. I have come to realise that it is not only important that there is consistency in the program for the participants but that consistency is important for the instructor as well. What do I mean with consistency for the instructor? I found it really challenging when I allowed new participants to join the program in the second last session. It was challenging because I had to explain the activities to the new participants while the other participants started the activity session and it made me feel like I am missing some observation time. It is also a very short time to get to know the new participants in only two sessions. I have also learned from the parents/assistants that new participants and new activities can be a distraction for the children/youth, since they would be more interested in the new participants and the new activities, and not focus on their current activity. Thus, consistency plays an important role in the overall experience of the program not only for the participants but the instructor as well.

5.2. Limitations of the Study

The first limitation in the present study that I would like to mention is the limited time period for the study. A personal limitation is my own inexperience as action researcher. I continuously wondered whether I am not missing some important observation data, because I am not aware of all the cues for the data collection process. At times I felt that being a participant observer, is limiting since I do not get an overall picture of the scenario, due to the active participation in the study.

5.3. Suggestions to Improve Program

I would first like to suggest one additional strategy, which could be implemented in the current physical activity program for the specified group of participants. I would suggest the use of 'Task Cards' – which provide a visual illustration of the activity (Fittipaldi-Wert & Mowling, 2009). The Task Cards will provide the children/youth with clear visual instructions of how to perform the activity. The child will become less dependent on the parent/assistant and instructor for guidance. In conversation with one of the parents it came

to my attention that some of the activities were not self-explanatory to the children. Example activities are; the aiming activities where the child had to take the hockey stick and dribble the ball in between the cones, the activity where they had to kick the ball into the bucket and the activity where they had to hit the target with the hockey stick and a ball. If 'Task Cards' are provided especially with these activities, it will help the children/youth to see what is expected of them and I would think that they would be more interested in trying the activity, once they have a visual illustration of 'how' to perform the activity. The hockey stick, with tennis balls placed next to each other with cones spread out on the floor, might be meaningless to the child with autism. But the visual illustration will give the activity meaning. It is important that the child sees the objective of the activity. I think this suggestion will improve the program and the children might be more encouraged to participate more actively in the eye-hand coordination activities.

The parents gave some feedback on the program that I think can be considered for future developments of this physical activity program. There was a suggestion to provide the children with an opportunity to all participate in the same activity e.g. everybody have to wait in line to participate on the balance beam. The thought behind the suggestion is that it is necessary for the children/youth to learn to take turns. Reid, O'Connor, and Lloyd (2003) stated that socially important learning is part of physical activity and it is appropriate for children to learn to share the same space and equipment, or to wait for a turn on the trampoline. This presents an opportunity for social skill development which could be good for the child with autism. Parent feedback is valuable and I would like to argue that it is important; since the feedback can contribute to the improvement and success of the physical activity program.

5.4. Recommendations for Future Studies

I have found a large amount of literature on programming but minimal literature on the collaboration with parents and children/youth in physical activity settings. I would therefore recommend that more studies need to focus on the collaboration of parents and children in developing a physical activity program. I would also like to suggest a study that explores the reasons why parents would like for their children to participate in a physical activity program. This could potentially emphasize the need for physical activity programs for children/youth with autism. I would also like to suggest more studies that implement the recommended strategies to evaluate the effectiveness of the strategies. This could potentially lead to more

program development which will be beneficial for the children/youth with autism because they will have more opportunities for participation. After conducting the present study, I realised that there is a need for more studies, to study the involvement of the parents in a physical activity program to provide an idea of the extent of the parent involvement.

5.5. Contributions of the Study

The physical activity program provided the children/youth from the Autism Association of Oslo with an opportunity to participate in physical activity. Thus, children were given an opportunity to be active, which was also one of the aims that the Autism Association of Oslo presented before the program commenced. I learned from one of the parents that as parents they think it is important for their child to have a meaningful activity or hobby to go to in her spare time. I would suggest that the current physical activity did meet the needs of both the child and the parents to see their child participate in a meaningful activity. The program provided the parents with hands-on experience of how a program can be designed and adapted to continuously meet the needs of the individual child. Thus, the parents were empowered and can now take ownership of the program. The study also indicates that with thoughtful implementation of appropriate strategies, it is possible to develop a physical activity program for children/youth with autism. Thus, the applied theory worked in practise for this study.

5.6. Conclusive Thought

Finally, in my understanding I learned that there should be an interaction between theory and practice; in this study neither can stand alone to be seen as significant. Theory contributed to the successful development of the physical activity program.

I have come to realise that children with autism are unique individuals. I would like to conclude with Connolly (2008) that our strangeness to each other need not be the end of a shared world. We have to move to a place of learning from each others' differences (and embodied experiences) rather than creating hierarchies of legitimacy which exclude (or re-programme) those who not fit within the narrow parameters of what is considered to be the 'norm'. Thus, there is a working together with the child with autism to learn about their lived experiences of the world. It is not merely about learning from the differences, but it is about accepting each unique child with their unique attributes.

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Appendix A

Norsk samfunnsvitenskapelig datatjeneste AS
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Vår dato: 11.05.2010 Vår ref: 24073 / 2 / LMR Deres dato: Deres ref:

TILRÅDING AV BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 19.03.2010. Meldingen gjelder prosjektet:

24073	*Bevegelsesprogram for autistiske barn*
Behandlingsansvarlig	*Norges idrettshøgskole, ved institusjonens øverste leder*
Daglig ansvarlig	*Øyvind Førland Standal*
Student	*Karin Kleinhans*

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.

Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, vedlagte prosjektvurdering - kommentarer samt personopplysningsloven/-helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, http://www.nsd.uib.no/personvern/forsk_stud/skjema.html. Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, http://www.nsd.uib.no/personvern/prosjektoversikt.jsp.

Personvernombudet vil ved prosjektets avslutning, 30.06.2010, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Bjørn Henrichsen

Linn-Merethe Rød

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Appendix B

Informasjonsskriv og samtykkeerklæring

Kjære deltakar!

Velkommen som deltakar i prosjektet ”Bevegelsesaktivitet i gymsal”. Hensikten med dette prosjektet er å prøve ut og vise fram eit aktivitetsopplegg for barn og unge med autisme i gymsal. Målet er at foreldregruppa etter prosjektet sjølv kan ta med barna og organisere slik aktivitet. I dette skrivet vil de finne informasjon om den forskinga som blir gjort i prosjektet, og de vil bli spurt om å samtykke til å ta del.

Dette prosjektet er ein del av ei internasjonal mastergrad som studenten Karin Kleinhans gjennomfører ved Norges idrettshøgskole. Karin vil utvikle aktivitetsopplegget, og hennar forsking går ut på observere barna og deira reaksjonar på opplegget, samt foreldre og assistentar sine erfaringar med opplegget. Det vi ber om samtykke til er at de stiller dykk til rådigheit for å bli observert og for samtalar undervegs.

Dei opplysningane ho hentar inn gjennom observasjonar og samtalar undervegs i aktivitetsopplegget vil blir brukt til å forbetre aktivitetsopplegget og forståinga av bevegelsesaktivitet for barn og unge med autisme. Desse opplysningane vil bli systematisert i hennar masteroppgåve, og vil ikkje brukt utover denne. Alle personopplysningar vil bli anonymisert, og som forskarar har vi teieplikt. Datamaterialet vil bli forsvarleg oppbevart av Karin og vil bli sletta når prosjektet er avslutta, seinast i august 2010. Prosjektet er meldt til Norsk samfunnsvitenskaplig datatjeneste (NSD), slik kravet er.

Deltaking i dette forskingsprosjektet er frivillig, og dersom de gir samtykke til deltaking, kan de når som helst trekkje dykk frå prosjektet utan at det får konsekvensar for deltaking i aktivitetsopplegget.

Med helsing

Øyvind Førland Standal Karin Kleinhans

Appendix C

Kontakt:

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Oyvind Standal

Karin Kleinhans

SAMTYKKE

Eg _____ har mottatt informasjon om prosjektet

”Bevegelsesaktivitet i gymsal” og samtykker til at eg, og mitt barn

_____ og ønsker å delta i prosjektet.

Appendix D

1. How old is the child?

2. Is the child currently enrolled in additional therapy sessions e.g. physiotherapy, occupational therapy etc.

3. Is the child taking part in physical education/activity?

4. Do the child have special medical concerns that need to be taken into account when planning the physical activity sessions?

5. Which days and times would suite the child and parents best to come to participate in the physical activity sessions?

6. What is the main reason(s) why the parents would like for the child to get involved in a physical activity program?

7. What specific aims and goals do the parents have for the physical activity sessions?

Appendix E

Components of the final physical activity program:

Station 1 – RED

- Balance beam
- Trampoline
- Horse (gymnastic box)
- Big mattress
- Rings
- Bench, placed at a declined angle

Station 2 – BLUE

- Long mattress
- Square pieces of carpet (4)
- 2 x Jumping ropes
- Plastic plate and tennis ball
- Skipping rope taped to the floor
- 3 chairs at the end of the long mattress
- 1 x hoopla

Station 3 – GREEN

- Balance track
- Plastic walking cups track

Station 4 – ORANGE

- 2 x Hooplas and 16 bean bags (4 yellow, 4 red, 4 green, 4 blue)
- Bowling
- 2 x Hooplas hanging at different heights, 4 beanbags (1 yellow, 1 red, 1 green, 1 blue), 3 large newspaper ball slings and 3 medium newspaper ball slings
- A bucket turned on its side with the open end facing to the front, 6 newspaper balls
- 6 x small cones placed in two rows, square block as target, 6 tennis balls and a hockey stick
- 8 x small cones placed in two rows, 6 tennis balls and a hockey stick

Appendix F

1. What was your first impression(s) of the physical activity program the first time you came to the session?

2. Which activities worked well and why?

3. Is there anything in the activity stations RED, BLUE, GREEN and ORANGE that you would change or maybe did not work well and why?

4. Do you have any other suggestions to improve the physical activity program better?

5. What was your child's experience of the program? (Did he/she like to come to the program, did he/she talk about the program at home, have you noticed anything different about your child since he/she started to come to the program, how do you see your child's progression so far, was he/she motivated to come)

6. Why do you think it is good for your child to come to the program?

7. What is your general impression of the program?

8. What did you think about the method of instruction, was it good or bad and why?

Appendix G

Station 1 – RED

Balance beam:

1. Walk forward on the beam
2. Walk sideways first with the right foot in front
3. Walk sideways with the left foot in front
4. Walk backwards with assistance

Trampoline:

1. Jump 5 times on trampoline before jump
2. Jump as high as possible
3. Jump and land on your buttocks
4. Jump into the air and twist

Horse:

1. Jump as high as you can
2. Jump and land on your buttocks
3. Jump and turn in the air
4. Jump backwards

Climbing rack:

1. Climb to the highest point and jump down
2. Try to climb with your eyes closed
3. Climb up and then jump down with eyes closed
4. Climb using only one hand at a time

Station 3 – GREEN

Balance track:

1. Walk with eyes closed
2. Walk slow
3. Walk fast

Plastic walking cup track:

1. Walk sideways

Station 2 – BLUE

Long floor mattress:

1. Walk from one side to the other
2. Walk sideways from one side to the other
3. Hop on the right leg from one side to the other
4. Hop on the left leg from one side to the other
5. March like a soldier from one side to the other
6. Crawl on your hands and knees
7. Roll on the mattress in different ways
8. Walk heel-toe, heel-toe

Jumping rope:

1. Jump slowly
2. Jump fast

Plate and tennis ball:

1. Walk slowly
2. Walk fast
3. Try to run

Square carpet pieces:

1. Put carpet under hands and walk
2. Put carpet under knees and walk
3. Put carpet under hands and knees and walk

Station 4 – ORANGE

Bean bag throw:

1. Throw with right hand
2. Throw with left hand
3. Throw with eyes closed
4. Stand closer and further away
5. Throw over head
6. Stand on your knees and throw

Bowling:

1. Throw with the different size balls
2. Stand closer and further away

Aiming at hoops:

1. Throw with the different size balls

Hit the target:

1. Use the different size balls to hit the target

Appendix H

Components of the first Session Physical Activity Program:

Station 1 – RED

- Balance beam
- Trampoline
- Horse (gymnastic box)
- Big mattress

Station 2 – BLUE

- Long mattress
- 2 x Square pieces of carpet
- Paper roll
- Paper

Station 3 – GREEN

- Balance track
- Plastic walking cups track

Station 4 – ORANGE

- 2 x Hooplas and 8 x beanbags (2 yellow, 2 red, 2 green, 2 blue)
- Bowling
- Body board track