



GÖTEBORGS UNIVERSITET
INSTITUTIONEN FÖR PEDAGOGIK OCH DIDAKTIK

Qigong in school

A study of the process in a primary school class that practiced
Qigong exercises daily during a school term

Gerd Brolin

Qigong in school: 15 credits
Program and/or course: PDA 161
Level: Advanced
Term/year: Autumn 2009
Supervisor: Lena Folkesson
Examiner: Pia Nykänen

The following is the first western scientific study covering the importance of Chi Neng Qigong for children. The study shows that Chi Neng Qigong can make a substantial difference in improving the well-being of children. It provides us with a valuable and relatively easily implementable tool that promotes feelings of self-awareness, social competence, confidence and independence in children.

I believe the outcome of this study to be so important that I decided to have the Swedish study translated into English. With validation from Gerd Brolin, and translation by Joe Eagan, the study can now be spread internationally.

Patricia van Walstijn,
Chi Neng Institute Europe

Below an image of the CD with Chi Neng Qigong exercises for children that was used for the study 'Qigong in school'.



Swedish version www.chineng.se
Dutch version www.chineng.nl

Abstract

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Background

Children and stress should not be synonymous with each other. However, sales data from the Swedish National Pharmacy shows that prescriptions of hypnotics and sedatives to children and adolescents continues to increase. We live in a society where the pace and flow of information is accelerating. At the same time, this increases the demands on our children in different contexts.

We cannot change the times we live in but we can, and need, to find ways to manage stress and thereby increase quality of life. This is an urgent situation because we now know that children not only suffer from stress that is immediately apparent, we also know that stress is also a reason for the development of diseases later in life.

Purpose

The purpose of this study is to find a tool for children to manage and reduce stress, and thereby increase their well-being. The question is whether Chi Neng Qigong can be considered such a tool.

Method

The study was carried out at a school in the area of Västra Götaland in Sweden during the autumn term of 2008 in a class with 23 pupils. My students and I have carried out Chi Neng Qigong exercises daily during one term.

In accordance with the purpose of finding tools for children to manage and reduce stress, which entails the question as to whether Chi Neng Qigong is one such tool, I have chosen to use action research as my methodological research approach. With this approach I am using both qualitative and quantitative data collection methods.

Results

At the start of the study, there was great concern in the class. Conflicts were common, and sound levels were high. In the beginning, the children managed to focus on Qigong exercises for about one minute. Gradually, we could increase the time, and by the middle of the term we reached up to 15 minutes per class period. Then something happened, absenteeism declined significantly compared to the control class. Conflicts between the children decreased, and in the end, petered out completely. Children's complaints of stomach pains and headaches showed the same trend. Sleep habits improved. Some children who were only able to work without interruptions for not more than five minutes could, after a Qigong session, triple their concentration times. It was predominantly boys who showed the greatest improvements in concentration between 'with' and 'without' Chi Neng Qigong.

The study shows that an increase has taken place in the level of the children's social skills, sense of community, self-confidence, concentration, motor skills, confidence in their own abilities and capacities to achieve a state of peace and calm.

Together with other research in the field, the study shows that Chi Neng Qigong has its rightful place as a tool to enhance the well-being of children. Health improvement measures also go hand in hand with good quality and results.

Preface

I wish to express my gratitude to the Chi Neng Institute in Sweden and my Qigong teacher Lise-Lott Persson, who has assisted and mentored me in my training of instructors.

Patrik Ljung (Chi Neng Institute) has helped me in finding research results surrounding Qigong.

I would also like to say a big thank-you to the class that has travelled on this Qigong journey with me.

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Background

Children and stress should not be synonymous with each other. However, the number of children and young people today who are stressed and have concentration difficulties is increasing. The Children's Ombudsman study (BR2004: 3) reports that children and young people feel the influence of stress and, for them, stress has increased and is ever increasing. It stems from a variety of factors such as study environments at school, schoolwork, family problems, friend commitments, media and time constraints. The reasons and combinations of reasons are endless.

The Swedish National Pharmacy's sales statistics show that prescriptions of hypnotics and sedatives to children have increased throughout the country in recent years (Pharmaceutical statistics unit at the Swedish National Pharmacy).

The Public Health Report from 2009 shows that girls in Swedish grade level 9 feel increasingly stressed by schoolwork, and the number has increased from 50% to almost 70% over the period from 1997/98 to 2005/2006. In an investigation (SOU, 2006:77) it was revealed that studies carried out among comparable groups of young people aged 15-24 years, from 1980 to 2005, showed that that anxiety, depression, insomnia and fatigue, and aches and tensions have increased with time, and furthermore that there has been a tripling of the number of women aged 16-24 years who experience such symptoms (from 9% to 30%). The proportion of 16-24 year olds with headaches, aching shoulders, necks, hands, legs and knees have doubled for men and tripled for women, and more young people are being treated in hospital for depression and anxiety.

We cannot change the times we live in but we need to find tools for children to handle the stress they face from day to day. This is an urgent situation because we now know that children not only suffer from stress that is immediately apparent, we also know that stress is also a reason for the development of diseases later in life. (Währborg, 2002). There are also connections between stress and children's self-image and self-esteem (Poulsen 1995).

As a professional educator, the question is if I'm going to give in and accept that stress is the price we pay in our society, or choose to follow Roosevelt's wise words "Do what you can, with what you have, where you are." The latter is far more constructive and attractive.

Through my own experience of what a Qigong exercise can provide, both physically and mentally, it tweaked my curiosity as to whether Qigong can work in a school environment. What I've done in this study is to examine more closely whether Chi Neng Qigong can be a preventive tool to deal with stress' adverse effects on our health and well-being.

Chi Neng Qigong is a modern, medical qigong, developed by Grand Master and Professor Dr. Pang Ming at the Huaxia Zhineng Qigong Recovery Centre in China. Medical Qigong is a part of traditional Chinese medicine and aims, through slow movements combined with relaxation, to balance body and mind. The body is activated by soft movements that see stress effects on the sympathetic nervous system decrease (Sancier KM. Medical applications of Qigong. *Altern Ther Health Med* 1996;2:40-6).

My intention is to, in a primary school class, introduce one Qigong session per day and follow the processes related to stress, concentration and well-being within the group during one term.

Ellneby presents in his book, *Om barn och stress* (About children and stress) (1999), a list of different stress factors a child can be affected by. This list of factors in relation to stress was first developed by Dr. Thomas Holmes and Dr. Richard Rahe. The list has since been adapted to reflect the perspective of children by David Elkind (1981). Ellneby points out, however, that you should embrace the list with a "pinch of salt" (s 81). Sub-factors can be perceived very differently by different children, and the assessment is made on the basis of American children's living conditions. The list should be seen as an indication of how many stress factors a child is exposed to.

I have chosen to largely rely on Elkind's list to develop an idea of the stress levels in the class. I have been privileged to know the children well and could also get, by listening to children's stories at the start of school year, a fairly good idea of the outcome of the stress test.

At this point I chose not to conduct any surveys or carry out any similar measures because I know from experience that young children (7-9 years old) have a difficult time in formulating or being aware of whether they experience chronic stress or not.

I perceive it is not ethically correct to ask detailed questions about family relationships, etc..

My assessment was that, of the 23 children in the class, around 16 children were exposed to stress factors that they could not have an opportunity to influence. More than half of the children in the class showed different behavioural patterns that are synonymous with a stressed child - such as anger, inability to concentrate, fatigue, hyperactivity, frequent visits to the toilet, etc. (Ellneby, 1999).

As it is clear that a majority of the children in the class exhibit different stress symptoms of varying degrees, it will be an interesting journey to see how their experiences, behaviours and self-esteem respond to Qigong exercises.

As part of the study, I have trained to be a Chi Neng Qigong instructor in order to gain a deeper understanding of the subject of Qigong.

Literature review

In the literature review I have chosen to focus on stress and concentration, as it is in these areas that the school has concerns for, as was the actual case in the class anyway.

Peace and calm is another area that is directly related to the study. It is a desirable state of mind in terms of student well-being and is a prerequisite for learning. The question is whether Qigong can achieve this. Therefore, it is preferable to gain insight into how peace and quiet systems function in the body.

Qigong involves slow movements where, among other things, motor skills such as coordination, balance, agility and spatial awareness are trained. Subsequent research on motor skills has a holistic approach that, in my view, leans towards Eastern practices. To look at this research more closely is therefore an important step in being able to interpret and draw conclusions from the study's results.

A description and background of Qigong is necessary as the study examines the process involving daily Qigong exercises in school. Qigong is a broad area because there are many different forms. In the "Qigong" section I will not go into details, yet will broadly describe the prominent features and aspects of Chi Neng Qigong.

Since the study of Qigong is implemented within the compulsory school system, it is required that there are records of the exercises having taken place for various governing documents relating to the school.

In the concluding section, a summary of the literature review is included which focuses on learning. My intention is that my students, through Qigong, should be relaxed and achieve well-being, and thus be provided with a good foundation for learning.

Areas addressed in the literature review are:

- The concept of stress
- Concentration and attention difficulties
- Peace and calm
- The importance of motor skills
- Qigong
- The school's governing documents
- A summary with a focus on learning

Stress

Hans Seyler (1956) was the doctor and scientist who developed the concept of stress into a scientific context. He saw stress as a purely physiological reaction in which the body gets wound up in response to a physical, emotional or mental strain or challenge.

(Www.NE.se stress) provides the following explanation of stress;

When there is a balance between demands and our ability to manage those demands, stress can be experienced as a positive challenge and "speed provider". Negative stress is induced both when demands exceed the individual's ability (over-stimulation) and when the demands are so low, that one does not have the opportunity to use and develop their skills and abilities (under-stimulation).

Stress is not a new concept yet has existed as long as humans have existed. Stress has changed in character from having helped prehistoric humans to mobilise forces in order to survive, to the stress factors of today which often are not even goal or survival oriented. Today's 'stress' often occurs frequently over a long period of time without receding. A high stress level over a long period of time can cause serious wear on i.e. the cardiovascular system and can increase the risk of high blood pressure, heart attacks and strokes (Levi, 2000).

Peter Währborg (2002) Swedish cardiologist and medicinal stress therapist with training in psychology, believes that few words have grown in use as much as the word stress has. He feels that one could say that it is a buzz word that illustrates the characteristics of our time. Almost all adults and even children have an idea of this concept and use it in everyday life. Children often interpret the concept of stress as a form of time constraint, while adults usually have more varied responses to what the term means.

Währborg believes that there is no accepted definition that objectively describes what is meant by stress. Why is there no agreed definition of stress? Währborg thinks that the answer to that question is complicated and says “Stress is not a static condition that can easily be shown through objective measurement. Nor does it let itself be captured by an individual’s subjective perception” (Währborg, 2002, p.32).

Physical reactions during stress

Psychoendocrinology has provided new knowledge about the links between stress hormones adrenaline, noradrenalin, cortisol and psychological functions. In situations where you are under strain, adrenaline secretions increase if the situation is perceived as challenging or uncomfortable. Cortisol levels are often elevated in the state of prolonged uncertainty and helplessness resulting from the inability to influence one’s own situation.

“High job demands, which allow one to have complete influence and control, create conditions for job satisfaction and are rarely associated with health risks. Emotional support from those surrounding someone may also be an effective stress buffer that protects against harmful strains. (Www.NE.se stress).

Stress in children

Children and stress is a relatively new area of research. Währborg (2002) believes that “knowledge of stressors in a child’s life is limited, particularly because for ethical reasons it is not easy to conduct studies with children.”(Währborg, 2002, p. 79). To carry out research on children and stress has proved difficult, as you do not want to expose children to more stress factors than they already might be exposed to. Miller (1982) believes that adults have overlooked the situation of children and have had the perception that stress develops in adulthood. Miller (1982) points out that “it is possible that we allowed ourselves to be misled by the myth that childhood is a carefree time in life.” (Miller, 1982, p.11).

We now know that stress symptoms such as headaches and stomach pain have increased since the 1980s. Währborg (a.a), after his own research and a study made at Harvard University (the study involved 10-year old children), found that diseases such as diabetes, cardiovascular diseases and depression are caused by and develop from stress.

Lena Nyberg (2003), a children’s ombudsman, has recognised just as Währborg the problem and the risk factors that exist in children with stress. Nyberg has written a report during 2001-2003 where she worked with various national stakeholder agencies and organisations. The main purpose of this report was to promote improved public health and highlight the risk factors for children experiencing negative stress. The report covers mainly the situation in secondary schools.

Since 1990, all pupils from grade one and upwards are incorporated in the Work Environment Act. According to law, schools must have a good study and working environment with as balanced a workload as possible. According to Mary Sundstrom (www.av.se/omoss/vp), who works at the Work Environment Authority, work-related stress and illness has increased alarmingly in schools and the cause is a substantial increase in workload of both staff and pupils. The Work Environment Authority wants to get employers at schools to study and assess the risks of ill health as a result of, among other things, stress, workload, bullying and noise. Through oversight, the Work Environment Authority want to raise awareness in order to increase politicians’ knowledge of the Work Environment Act and make them more self-aware of their responsibilities that they have to see to it that good working environments are created and that illnesses are prevented.

Stressors in children

Ellneby (1999) highlights the various causes of stress in children. The main reason for children developing stress is that they feel they are inadequate and not good enough.

A situation that may be causing stress for the child in schools is having to share space with other children. Another aspect is not having their own adult for themselves. Many interactions can be another source of stress. A child meets many people during a day (friends, school and recreational staff) that they interact with. In schools it often means large classes with few adults, students sharing a locker room and dining room etc.. and this can be stressful

in the long run. It's about teachers who do not have time to help everyone and for students who are not taken care of by the adults on an individual enough basis. Ingrid Pramling (1993), professor and researcher, has found similar results regarding early childhood groups - that it is better to have fewer children and fewer adults than more children and more adults. It involves reducing the social contacts that the child relates to and enhancing a child's own physical space.

Noise is another stress factor for children as much of their time is spent in environments that may involve high sound levels (pre-school, school, leisure time). Ellneby (1999) points out that adults should not misinterpret that children tolerate noise better than adults just because children are often noisy. It is rather the opposite, since children's sense of hearing is more sensitive.

Another sensitive aspect in a child's environment, according to Ellneby (1999), is when children become under-stimulated. Children can cope with doing something that does not feel meaningful for them. Yet if this under-stimulation carries on for too long then this leads to feelings of anxiety, discomfort, and boredom and thus can lead to serious passiveness. The child loses their ability to take initiatives.

More common, however, is that children are over-stimulated. They have a packed schedule where leisure time is compartmentalised into the smallest detail. Students have no time where they can just unwind and 'be'. It is often, writes Ellneby, that parents strive for their child's best interests and therefore sign them up for various activities. It may also be that parents want to realise their own dreams and try to live them through the child. Children's stress may be due to parents putting high and irregular demands on their children in terms of performance and adaptability.

Many students feel stressed because their parents are worried about their finances. Some parents are unemployed and take out their anxiety on their children, which makes the child feel uncomfortable.

In cases of divorce, many children are affected severely. Without being able to influence the situation, the child has to deal with the family being split up (Ellneby, 1999).

Miller (1982) partially takes up the same things as in Ellneby's (1999) research, yet Miller also covers children living in captivity and extends the concept. He believes that all children live in a kind of captivity by the rules and regulations set up in school or at home.

Westlund, a PhD. in pedagogy and a teacher, discusses in his book 'Elevens tid och skolans tid (The student's time and the school's time) (1998), a kind of captivity in time. She means that schools govern children's time by schedules and different time frames. Each subject gets its fixed time and date allocated strictly within the terms of lessons and breaks. This fixation on time can create stress for some children because children's activities are interrupted all the time.

Währborg has presented the major stressors for children as follows:

- Emotionally significant separations, i.e. divorces and teacher exchanges.
- Unhappiness at school, i.e. because of perceived inadequacy.
- Relationship disruption such as bullying or when the class is too large.
- Traumatic experiences such as abuse or accidents.
- Time and decision conflicts, i.e. keeping up with homework and recreational activities.

Faults in security and social stability, i.e. family problems or illnesses. (Währborg, 2002)

Stress symptoms in children

Literature reveals various symptoms of stress and how we as adults can see or identify children under stress. Variations from child to child are many and all are affected differently. Ellneby (1999) claims that one can see it in a changed behaviour, such as eating or sleeping problems, being less able to concentrate and learn, or through a deterioration in health. (Ellneby, 1999, p. 15).

She believes that stress surfaces differently from child to child, some are sensitive and quickly develop behaviours that indicate they do not feel well and other children cope better with stress.

Ellneby (1999) has listed the following behaviours that can reflect a stressed child. If you can simultaneously observe several of these, you should interpret them as signs that the child may need help.

- Aggressiveness
- Listlessness
- Impulsiveness
- Restlessness
- Sadness
- Fatigue
- Nervous twitching
- Nervous laughing
- Stuttering
- Tooth grinding
- Insomnia
- Hyperactivity
- Constant visits to the toilet
- Poor appetite or sympathy eating
- Nightmares
- Tendency of being involved in accidents (p. 67)

Ellneby writes that even the skin can react to stress by becoming reactive to new allergies. Stress can also cause asthma (Ellneby, 1999).

The Children's Ombudsman's report (BR 2004:03) reported that when children themselves describe the feeling of stress, they show actual physical symptoms such as fatigue, restlessness, sadness, anger, panic, anxiety, nervousness, loss of appetite, concentration difficulties, nausea and headaches.

Protective Factors

What is it that enables some children to be able to deal with stressful situations and environments better than others? Different researchers have concluded similar properties synonymous with a stress-resistant child. Elkind (1981) identifies five characteristics:

1. Social skills. The child is happy with adults and their peers.
2. Ability to make an impression in a positive way.
3. Self-confidence. The child has a realistic sense of their own capacity and can see difficulties as challenges.
4. Independency. The child is independent and doesn't let him/herself get affected too much by things.
5. High performance level. The child is inventive, sustainable, creative and often original.

Another synonymous characteristic according to (Ellneby 1999) is that the child does not put a great emphasis on needing instant gratification.

Also, the stress-resistant child often has a rich emotional life, and can express themselves easily.

Concentration and attention difficulties

Another problem area in today's schools is students' difficulties with concentration.

One of the cornerstones of Chi Neng Qigong is that thoughts are stabilised and concentration improves. It seems therefore natural for me to look at the concept of concentration and difficulties in concentrating.

Concentration

An ability to concentrate consists of two parts - attention and concentration. Attention is described as "selective attention". It's about the ability to provide an overview and a whole, and from there, be able to select the most significant things to focus on.

Concentration means that you have the ability to maintain your mental attention focused for some time. The concepts of "sustained attention" and "vigilance" cover this area.

The National Encyclopaedia of Sweden (www.NE.se 'koncentration') defines concentration as the following: Oriented and retained attention for a particular type of information or for a particular task. In school, for example, it can be a matter of being able to concentrate on what the teacher is saying and being able to ignore the sounds from the music class in the next room, or to be able to read a text closely and focus on the content without letting thoughts drift away in different directions.

Barkley (1995) has concluded that concentration and motivation are factors that are closely linked and controlled from the same place in the brain. According to Barkley (1995), concentration difficulties stem from a lack of motivation, and not vice versa. It is easier to concentrate and understand information about interests and concerns. Kadesjö (2002) believes that the ability to concentrate determines whether a person should be able to orient themselves in life and have meaning and context.

Kadesjö (2002) believes that good concentration means that a person can gather important and relevant information in an efficient manner. That which is most important is kept while that which is unnecessary is discarded. In order to concentrate on one task one should be able to:

- Direct one's perceptions, thoughts, and feelings towards the task
- Exclude irrelevant stimuli
- Get started with, stick with, and finish the task (Kadesjö. 2002. p16)

Similarly to Barkley (1995), Kadesjö (2002) believes that in order to achieve conditions that lead to children being able to concentrate, there must be a consistency between the impressions from the outside world and the child's own emotional and developmental conditions. Information should, in other words, be on the child's level so they can reach it. By observing a child's concentration on a task, it is easy to determine whether the task has any meaning for him or her.

There are a number of factors that determine which impressions a child opens up to and which ones are shut out. The most important factors are:

- The child's experiences, knowledge and intellectual level to date.
- The child's emotional life, that being the emotional reactions that impressions from the outside world result in for the child.
- The child's motivation for wanting to move closer to embracing an actual task. (Kadesjö, 2002. S17)
- The child's self-confidence is crucial to their ability to concentrate (Kadesjö, 2002). Both to tackle a task and to complete it in order to assess it means taking a risk that is made easier through having a high level of confidence.
- Concentration and attention are also important for meaningful communication. It's a matter of both parties in an act of communication being attentive to the common message so that the act of social interaction they are undertaking actually works.

In the context of a school environment, those involved with cognitive theory agree that attention is a critical factor in learning and performing well at school (Imsen, 1992).

Concentration difficulties

There are different forms of attention difficulties that manifest in different ways. Underlying causes may be biological, psychological or social factors.

In children with learning problems in school we often see difficulty in concentrating. According to Ingvar Lundberg (Swedish National Encyclopaedia internet service 2009, 'Koncentration'), a chronic lack of concentration is characteristic of ADHD and some related diagnoses (DAMP and MBD).

ADHD children usually focus on a particular detail, rather than seeing the big picture and being able to prioritise what's important. The children are likely to perceive impressions as fragmentary and disjointed, and they cannot manage to put them together to form a whole.

Kadesjö (2002) examines different types of attention difficulties.

It may be that a child is confronted with a task that does not relate to their experience and intellectual capacity, and this results in the child maybe having difficulty in concentrating on the task.

Other reasons include perceptual and/or motor skills difficulties.

Imsen (1992) considers the problem of attention being related to limitations in working memory. The ability to draw our attention to several things at once is extremely limited. If an action, on the other hand, is automated it does not take up as much capacity in the working memory, meaning that attention can be used for other things.

Hyperactivity, restlessness and lack of concentration are, according to Ellneby (1999), also behaviours that can be found in a stressed child where the cause is neurological. Even Kadesjö (2002) addresses the lack of concentration in response to i.e. a stressful environment in which a child is growing up or in response to a traumatic event.

Children with attention difficulties often have a poor self-esteem and lack of self-confidence and self-reliance (Kadesjö, 2002). A school has a special responsibility for these children. This is also an area where a lot of research is carried out which results in better methods and a greater understanding of these difficulties.

An ability to concentrate can be summarised as partially involving focus, being able to focus attention, limiting sensory impressions and thought processes, and perseverance – to be able to keep at a task long enough and finally, to partially be able to allocate attention – to do two things at once.

Peace and calm

Kerstin Uvnäs Moberg is a Professor of Physiology and has worked with medical research for 25 years. In the book 'Lugn och beröring' (Calm and touch, 2000), Uvnäs Moberg describes how calm systems (biochemical) in the body work and what happens when calming hormones flow in the blood.

Balance between stress and anti-stress

For us to feel good in the long run, 'fight or flight' reactions and calm reactions need to be in balance with each other. This is not reflective of our society today where the number of experiences that provide peace and calmness have decreased.

Every living organism is in constant contact with, and constantly influenced by, their surrounding environment.

Fight and flight have an opposing force not only in life but also in our biochemical system that affects our bodies. Simplified one can say that the sympathetic and the parasympathetic systems have opposite functions and balance each other.

The sympathetic nervous system is responsible for stress increasing the body's readiness. The parasympathetic nervous system calms the body and lowers levels of stress hormones.

To not constantly over-activate one of these systems is, according to Uvnäs Moberg, one of the most important criteria for health and well-being.

Many of the peace and calm system's processes are not visible to the naked eye. The effects are also slow and gradual.

Oxytocin

Uvnäs Moberg takes up the notion of oxytocin in her book. Oxytocin is, from a developmentally historic standpoint, an ancient compound. The fact that oxytocin has been around for so long means that the compound has a fundamental importance for organisms and steers effects that are essential for both animals and humans.

In 1906 the British scientist Sir Henry Dale already found a substance in the pituitary gland that he gave the name oxytocin. Oxytocin was then to become one of the first hormones whose composition could be identified in the mid 1900s.

You could say that there are two oxytocin systems. One consists of the oxytocin that goes into the bloodstream and thus acts as a hormone; the second consists of the oxytocin that goes through the nerves and acts as a neurotransmitter. These separate systems coordinate in some situations.

Oxytocin can be easily freed via "nice" external stimuli, such as comfortable warmth and touch.

Good relations likely stimulate the peace and calm system, not only through physical contact, yet also via feelings of support, warmth and love. Even some places that we have a good relationship with may have a calming effect, likely through the oxytocin system being turned on.

Even mental images seem to trigger what looks like oxytocin effects.

Exercise is another way to activate the peace and calm system where levels of stress hormones are reduced.

The fact that oxytocin can act in two ways, both via nerves and as a hormone in the blood, means that it is a substance that can create a variety of effects. Moberg (2000) describes the effects of oxytocin within the following areas:

- Fearless and social; Fear and aggression is replaced by friendly interaction and impressions, and feelings can be more easily processed.
- Social memory means that you recognise someone you met before; Oxytocin may accelerate this development of “acquaintance”.
- More effective learning because Oxytocin reduces stress and thereby improve conditions for learning. This is also true in individuals who normally have difficulties with learning.
- Being able to find flexible solutions to problems
- Increases creativity
- Calms
- Dampens pain
- Lowers heart rate and blood pressure
- Repairs the body (recovery, healing of wounds)

First and foremost it is the decreased levels of the stress hormone cortisol, which results in more calm. With repeated oxytocin administrations, a prolonged reduction in cortisol is achieved. This effect occurs because the entire cortisol control system is affected. These changes persist even after some time.

Motor skills’ importance for child development

The definition of motor skills is, according to Sigmundsson (2004), everything that has to do with movement. Annerstedt (2002) believes that motor skills involve all the functions that help manage and control our bodily movements.

It is common to divide motor skills into two groups, basic motor skills and fine motor skills. Basic motor skills involve i.e. jumping and running, where the major muscle groups are active and where requirements for precision are not so great. Fine motor skills involve i.e. hand and eye movements where small muscles are involved and it entails high precision. This division may be misleading because most movements include both small and large muscle groups with varying degrees of precision (Sigmundsson, 2004).

Whether it’s basic or fine motor skills involved, movements are automated the more they are repeated and practiced. A child’s attention can be directed in another direction because the autonomic nervous system has taken over the motor skills.

The body adapts itself even to the degree of movement it makes (Dessen, 1990). It affects how bones, cartilage, tendons, muscles, the vascular system and the nervous system develop in a child.

A change has occurred in the area of children’s motor skills. According to Raustorp (2004), children are more still than they used to be, as games and playing where movement is involved have been replaced with TV/DVDs and computer games, which in the long run can lead to serious decreases in levels of health and well-being.

Current research on motor skills shows which various areas that motor skills have an impact on.

It is mainly Ernst J Kiphard who has inspired this holistic approach that looks at the whole development of a child. He is credited as being the founder of psychomotor pedagogy.

Kiphard developed his psychomotor development theory by studying children with various disabilities. Hammer and Johansson (2008) have, in their work “Of course everyone can join in”, drawn inspiration from Kiphard where they relate to motor skills’ physical, emotional, cognitive and social dimensions.

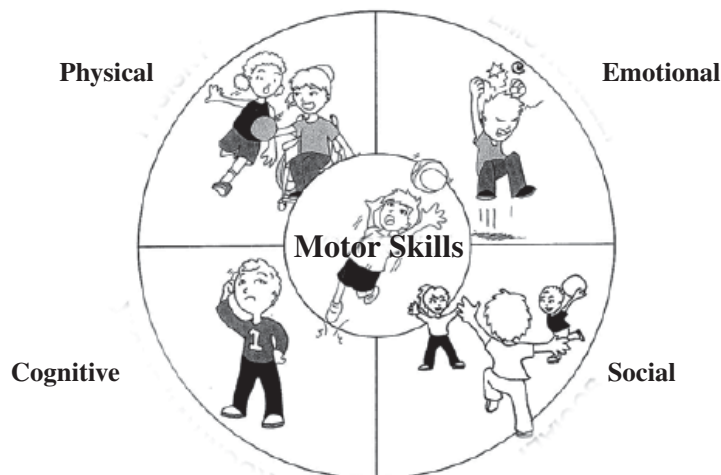


Figure 1. "Of course everyone can join in! - in sports, play and games" (Hammer & Johansson, 2008, p.13).

Physical

There are different theories and terms surrounding a child's physical development.

Holle (1987) bases his conclusions on the brain's development and deems that a child's motor development follows a pattern, where each step builds upon the previous. You cannot skip any step, but steps can take different lengths of time.

The first step is reflex movements that the child makes involuntary, spontaneous movements without the brain halves coordinating.

The second step involves the child handling symmetric movements since the cerebral cortex begins to play a part in the child's movements.

When the child has reached the third step, they control various movements themselves. Movement stems now from intent.

The fourth step involves the movements being automated. The child no longer needs to focus on the movement. For a movement to be automated, the child needs to coordinate their movements. Coordination is not innate, yet depends on the central nervous system's maturation. With coordination, the child's perception and motor skills interact.

Hammer and Johansson (2008), just as Kiphard, divide up motor development into four phases.

The first phase is the neuro-motor stage in which the nervous system develops.

During the second phase, we move through our senses. This phase is called the sensory motor phase. Our impressions that are based on inheritance, maturation and stimulation are coordinated and interpreted.

During the third phase, known as psychomotor phase, the child feels that movements are value driven. They are experienced by the child as being positive or negative depending on the feeling associated with the activity.

The socio-motor fourth phase occurs during school ages. It is now that the child, through play, communicates and acquires social relationships with their peers.

Emotional

Children show themselves how important motor skills are for our development and how we perceive ourselves. It is by moving that the small child explores and investigates their life. If the child feels that they have succeeded with something then the abilities of a child's body is given a boost. This positive experience enables the child to experience joy in moving and having a will to move. There is a connection between self-esteem and physical and mental states (Annerstedt, 2002).

Our self-esteem consists of, among other things, a social, cognitive and physical self-esteem. Physical self-esteem is composed of four sub-groups; physical activity, physical strength, physical fitness and motor skills (Harter, 1985).

Stenberg (1992) argues that the main purpose of the motor training is to create self-esteem and self-reliance, which are essential qualities for success, including in schools.

Physical Activity and Health (1996) is a report from the U.S. that compiled research on physical activity. The report concluded that there is a correlation between regular physical activity and good mental health. Physical activity has an anti-depressant effect and it affects mood as well as self-esteem.

Social

It is through play that children develop their motor skills and social skills.

Play is important because the child learns empathy and compassion. It also provides training for a child in how to apply rules and resolve conflicts. It is only when a child feels comfortable with their body's movements that they can let themselves whole-heartedly embrace a game (Annerstedt, 2002). Children actively participating in games develops their motor skills further, which in turn leads to a high level of confidence and joy from movement.

Research shows that good motor skills provide children with a higher social status where they become more accepted among peers (Larsson and Meckbach, 2007).

Cognitive

When the child moves and explores their environment the child learns new skills and knowledge. Motion is intimately connected with cognitive development. Sensory development is also an important basis from which a child can develop abstract thinking (Dessen, 1990).

Motor skills are also developed in symbiosis with perception. Through this interaction between motor and perception, the child develops a sense of time, body, and spatial awareness.

A child having good motor skills and a well-developed perception and psyche that are in balance – these are prerequisites for concentration and motivation for learning (Raustorp, 2004).

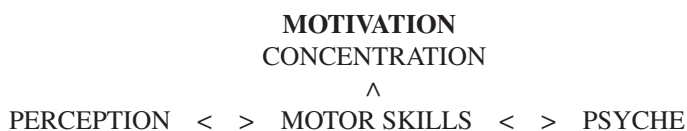


Figure 2. Raustorp (2004) "Learning physical activity" (p. 14).

Raustorp (2004) argues that the correspondence between theory and practice favours our creativity and learning. Even physical activity indirectly affects our capacity to learn. This is done via hormones released during physical activity that increase the feeling of well-being and a feeling of relaxation afterwards. This combination of muscular relaxation and mental concentration is the optimal condition for learning.

Ericsson (2003) has in his thesis, 'Motor skills, concentration abilities and performance in school', followed two school classes of the same year who have carried out daily physical activities and compared them to two classes who have had physical activities periods just twice per week. The thesis is part of the Bunkeflo project (a project for a healthy lifestyle – Bunkeflo is a small town in the south of Sweden).

In the classes that had daily physical activities, results showed:

- Basic motor skills (balance and coordination skills) improved
- A clear correlation between motor skills and concentration abilities.
- Children with motor skill deficiencies showed better results in national tests in both Swedish and mathematics than children with similar motor skill deficiencies who had less frequent physical activities.

The conclusion is that when basic motor movement patterns gradually improve and thus become automated, pupils are able to focus their energies on other cognitive functions.

Wolmesjö (2006), has in his phenomenological study, arrived at similar results suggesting that increased physical activity and motor skill training improves study results. Wolmesjö (2006) also believes that self-esteem is reinforced

through daily physical activity, that in turn affects concentration in a positive way. Jagtøien, Hansen and Annerstedt (2002) argue that physical development may be an important factor in cognition but does not necessarily have to be. The most common approach is to see motor skills and cognition as a whole in which development takes place through interactivity.

The same holistic approach in research about children's motor and cognitive development is advocated by Sandborgh (1984).

Increased self-confidence, better basic and fine motor skills, improved concentration and endurance, and a greater possibility to be able to sit still - all are skills that can be improved through conscious movement stimulation and training, and contribute to achieving a favourable learning environment.

It is never one factor that determines an individual's overall development, yet it is the sum of factors, that influence both positively and negatively, that result in one's 'whole' self (Sandborgh, 1984. P.11).

Governing documents

Together with other member countries in the WHO's European Region, in 1998 Sweden adopted a new health strategy, "Health 21 - health for everyone in the 21st Century." Several goals of these governing documents involve school activities such as:

Goal # 13: In school, students, teachers and parents should together, in cooperation with the municipality, analyse their own surroundings in order to achieve and maintain good health and develop action plans.

Goal # 14: All sectors of society are responsible for health. Decision makers in all sectors must take into account the benefits that can be achieved through health-oriented investments in each sector and formulate their policies and activities accordingly (Health 21, 1998)

The Swedish National Health Committee has developed public health goals as well as strategies for how to achieve those goals. In goal # 9 it states:

The body is dependent on physical activity. A half hour per day of moderate physical activity is enough to reduce the risks of many diseases. It is therefore important that physical activities increase both at schools and in the context of workplaces. (SOU 2000:91).

Comprehensive policy documents highlight the importance of physical activity for people's health and cover the responsibilities that decision makers have regarding this issue. Here I see a Qigong session per day at schools as a good start towards achieving the goals of the policy documents.

Curricula

By looking at primary schools' recent curricula, it shows that a shift has taken place towards a greater focus on health.

In the LGR 69 curriculum, the concept of fostering disappeared and focus was shifted to students' physical, social and aesthetic development.

In the LGR 80 curriculum teaching became more theoretical. Coeducation was implemented. The aim was to know about the basic forms of movement, develop self-confidence and gain knowledge about the body.

Current curriculum known as Lpo 94 was adopted in Sweden in 1995. Then all the school subjects were given new curricula. The big change was that the performance-oriented approach gave way to a more health-oriented approach. The name was also changed from Sport to Sport and Health.

Despite the focus on health, physical education activities in primary schools decreased by 20% (Ericsson, 2005). The reason for the cutbacks was to allow more time for academic subjects (Raustorp, 2004). The reduced time for physical activities has been met with concern from many sources. Ericsson (2003) deems that two physical education lessons a week is not enough to provide children with the motor skills training they need for their development.

Hopefully, the new curriculum to come is going to consider the research available in the area of Sport and Health.

Lpo-94

The curriculum especially emphasises on school's activities being characteristic of concern for the individual's well-being and development. In the section "Good environment for development and learning", among other things, it states that:

The aim should be to create the best overall conditions for students' education, thinking and knowledge. Personal security and self-esteem stem from children's home environments, yet the school has an important role in this respect (Lpo-94's 9).

From my experience, a good environment for development and learning is when students are relaxed, focused, have good self-esteem, and when social interaction works. All are attributes that can be achieved through Qigong exercises (Benson, 1989).

Sports and Health

In relation to Sport and Health, under the title "The aim and role in education of subjects", it states:

"The subject shall also arouse curiosity and interest in new activities."

Children often find it interesting and exciting to try something new. Switching between theory and physical activity benefits learning and creativity (Raustorp, 2004).

In 'goals to strive for' one can read the following:

The school, in its teaching of physical education and health, should aim to ensure that students:

- Gain knowledge of what promotes health
- Gain a good sense of their bodies and gain knowledge which makes it possible to see, choose and evaluate different forms of activities based on a health perspective.
- Are stimulated and maintain a continued interest in regular physical activity whilst taking responsibility for their health.
- Develop and deepen their physical abilities and desire to be physically active, whilst encouraging them to express their imagination, emotions and feelings of togetherness (Lpo-94 Course's 22).

In relation to the goal that pupils should have achieved upon completion of the course in Physical Education A at high school, it states that:

- Students should be able to apply different methods of hyperactivity regulation and stress management.

In the 'goals to strive for' the health perspective dominates and is congruent with the goals of other policy documents (Health 21 and the National Public Health Committee's public health goals).

It is of utmost importance that schools find activities that promote health and provide an understanding of how we, in everyday life, can affect our health.

It is mainly the balance between three human dimensions - the physical, mental, and energetic – that make Chi Neng Qigong stick out. Qigong also emphasises the holistic vision of human beings. The same ideas can be found in the curriculum for Sport and Health.

Under the title, 'The subject's structure and nature', the following is stated:

At the base of it all is a health perspective that involves physical, psychological, and social well-being.

The subject stands for a holistic view of human beings, i.e. that body, mind and thoughts are interdependent and can thus contribute to the development of a student's self-awareness of their own body.

The curriculum emphasises the international perspective. Here I see Qigong as an opportunity to discover and develop understanding of other cultures and their traditions by talking about Qigong's origin.

A cultural perspective in the subject reflects both traditions and ways of thinking as an approach and form of expression through movement in other cultures.

After reviewing and interpreting existing curricula (Lpo 94 and others), I think there are good reasons to carry out Qigong exercises in primary schools as a complementary activity to other teachings...

Qigong

History

According to Dr. Pang Ming He, Qigong was developed about 3,000 years ago by Chinese Taoists; since then, the method has been developed by Indian Buddhists. The method is described in detail in the classic work called 'Huang Ti Nei Ching', and is said to be a forerunner to Asian martial arts. Today there are around 100 different variations.

Qigong has common roots with many other cultures' medical traditions. The method is based on studies of nature and is the underlying force behind the whole ancient Chinese art of healing.

In China, several hospitals focusing on Chinese medicine have a special qigong department. Doctors specialise in qigong and follow medical theories to help patients to prevent, cure or alleviate disease.

In China, Qigong is considered as a national treasure. Until 1978 it was a Chinese state secret, which explains why it came to the West much later than i.e. acupuncture.

What is Qigong?

In the book *Basic Theories and Methods of Zhineng* (2007) by Yuanlong Liu, it's said that Qigong is based on the theories of yin and yang, the five elements, and the meridian system (energy pathways). Acupuncture, herbal medicine and massage are all methods that, via external means, balance energy in the body. Qigong is a way to activate one's own internal forces to prevent and treat diseases and strengthen physical and emotional balances in general. Through meditative movement exercises, the body's meridians and acupuncture points are stimulated so that tensions dissolve and energy can again flow freely. Qigong is a method to strengthen and renew vitality. Qi means vitality or vital energy, whereas gong means method or technique. Qigong is based on the same ideas as acupuncture or reflexology - that the body is made up of energy centres and meridians (energy pathways) in which life's energy should flow freely.

Chi Neng Qigong

I have trained to be a Chi Neng Qigong instructor and it is this form of qigong that I carried out with the children. Zhineng Qigong consists of movements developed by Grandmaster Dr. Pang Ming in China. Professor Pang Ming is trained in both Chinese and Western medicine. He founded the hospital called The Huaxia Zhineng Qigong Recovery Centre in China, where he, among other things, carried out continuous scientific studies on a large scale. Patricia van Walstijn from Holland has brought the teachings of Dr. Pang Ming to Europe under the name Chi Neng Qigong. She makes the link to the Western way of teaching, including didactics and she developed the education to become a licensed (children)instructor.

The essence of Chi Neng Qigong is to combine motion, affirmation (the formulation of the idea of what you want to achieve with training) and visualisation (creating a mental picture of what you want to achieve). "It is primarily the balance between the three human dimensions - the physical, mental, and the energetic that is characteristic of Chi Neng Qigong" (Patricia van Walstijn, 2006, p. 5).

Children and qigong

Qigong for children has not been around that long in Sweden. It is mainly in the form of qigong called Biyun that there has been instructor training for practicing it with children.

Within peace and health pedagogy, "The dream of the good" initiated by Anna Bornstein, qigong is used as one of the methods to achieve peace and harmony. In Holland, Patricia van Walstijn developed Chi Neng Qigong for children. The material has recently been translated into Swedish by Lise-Lott Persson at the Chi Neng Qigong Institute in Malmö, Sweden. I have had the privilege of being involved with this work.

Qigong and research

I have chosen a small selection of the research available to show that qigong affects diverse areas - both physically and mentally. Finally, I present the research that I believe is relevant to my own study.

Dr. Pang Ming chose active components from traditional qigong methods and took away the idle "padding" that

the tradition has added over the years. He simplified form, took away the movements that did not seem to have any purpose and added other, more active movements.

When the Huaxia Zhineng Qigong Recovery Centre was founded, it became possible to train together in very large groups. This made it possible to conduct continuous scientific studies. Zhineng Qigong is one of the few qigong methods that have been tested on such a large scale and scientifically. Zhineng Qigong was named the most effective and health-promoting qigong by Chinese authorities after 11 different forms of qigong were tested scientifically (Pang He Ming, 2007).

Chinese studies have shown that the effects of qigong on well-being are on par with those achieved through physical education activities (Sancier KM. Medical applications of Qigong. *Altern Ther Health Med* 1996;2:40-6) and just as through fitness training, you can get so-called endorphin kicks if you train for a certain intensity and length. (Swedish sports research published in F&F 4/01 p. 49).

Qigong has been found to: have positive impacts when swimmers recover after exercising (Jiang, 1991), reduce stress (Lee, Ryu & Chung, 2000), decrease back pain in spinal patients (Wu, Wen-hsien, 1999), strengthen the immune system (queue, 1994), lower high blood pressure (Mayer, 1999), reduce asthma symptoms (Reuther & Never, 1998) and increase blood circulation (Sancier, 1996).

In an interview study (Brinkler, 1998), it was shown that Qigong reduces anxiety, resulted in more energy, and increased self-awareness.

Research has shown that in qigong, when the body is completely relaxed, it leads to a decreased heart rate, respiratory rate and also reduced metabolism (Luskin, 1994).

In Qigong, plasma cortisol levels are reduced, whilst a higher intensity of (EEG) alpha waves are produced in the brain when compared with sleep and rest. Alpha waves' increased activity allows the parasympathetic nervous system to increase its activity. Alpha waves' increased activity is correlated with cortisol levels decreasing. Even cholesterol in the blood can be reduced. (Jouper, 2000).

Jones has even shown that daily qigong sessions for 14 weeks leads to decreased cortisol production (Jones BM. *Altern, Med* 2000; 1:8).

Ongoing research surrounding children and adolescents is being conducted by, among others, doctoral candidate Yvonne Terjestam, psychologist and lecturer at the University of Kalmar. She is examining, in the research project called "Children in balance", the effects of various relaxation techniques where Qigong is one of the methods. To date, the study shows very good results.

Similar studies have been carried out in the U.S. by Professor Herbert Benson (1989). Stillness and other methods that trigger relaxation effects resulted in the following at some American boarding schools:

- facilitates learning and leads to better scores
- reduces aggressive behaviour and proneness to violence
- provides relief upon having medical symptoms
- reduces absenteeism
- increases self-confidence
- increases the ability of self-control
- increases concentration
- It has also shown that the exercises had been warmly welcomed by students.

At Örebro University there are two new doctoral dissertations in the field of Qigong. It is John Joupers' thesis *Motivation and Intention to Mindful Exercise* and Mattias Johansson's *Acute affective responses to qigong exercise*.

The overall research and tried and tested experiences suggest that humans feel good and perform well as a result of practicing qigong. Therefore, I see it as an obvious indication that our children can reap the benefits and have access to this tool, and that practicing qigong is supported by a strong scientific basis.

Summary of Literature Review

This study's focus is geared towards finding tools for children to increase their well-being. This also results in favourable conditions being created for student learning. Learning is a very complex and multifaceted concept. Illeris (2007) argues that consideration must be given to many different approaches, theories and scientific disciplines.

For the literature review I have covered learning from different aspects. In the following sections, among other things, a summary of these approaches is made. My intention is that the summary should provide the study with a background and a holistic approach to well-being and learning in schools.

Stress

Stress can be both positive and negative for well-being and learning processes. We experience positive stress when there is balance between demands being made on us and our ability to manage them. Positive stress means that we perform better and gives us a sense of pride and satisfaction.

Negative stress develops when a child feels that they are inadequate and not good enough. The school environment can also create negative stress by children having to share limited space and also the attention of adult's. Noise level is another disturbing element in today's schools.

Ellneby (1999) also highlights under-stimulation as a stress factor even if the opposite is more common.

Währborg (2002) has compiled the most important stressors for children: separation, unhappiness at school, relationship disruptions, trauma, time and decision conflicts, and lack of security and social stability.

Negative stress triggers both physical and psychological stress symptoms that complicate learning, and even in some cases, make learning impossible.

Elkind (1981) identifies some characteristics that make a child more stress-resistant: social skills, ability to make a positive impression, confidence, trust, independence and high performance.

Concentration and attention difficulties

An ability to concentrate consists of two parts - attention and concentration. Attention is the ability to attain an overview as a whole and, from there, select the most significant things to focus on. Concentration means that you have the ability to maintain mental attention focused for some time.

In order to concentrate on a task, Kadesjö (2002) deems that one should be able to address one's perception, one's thoughts and one's feelings towards a task, and be able to exclude irrelevant stimuli and initiate, stick to, and finish a task. Factors affecting concentration can be, among other things, a child's previous experiences, emotions and motivation. Even a child's self-confidence is important.

Concentration skills are of great importance in communication and are a critical factor in learning and performing well at school (Imsen, 1992). There are different forms of attention difficulties that manifest in different ways. Underlying causes may be biological, psychological or social factors. Concentration difficulties usually result in learning problems at school.

Peace and calm

Uvnäs Moberg, a professor of physiology, highlights the importance of balance between stress and anti-stress for our health and well-being. There should be a balance between the sympathetic and the parasympathetic systems. This applies primarily towards lowering levels of the stress hormone cortisol because cortisol is harmful to our health.

Uvnäs Moberg (2000) has taken a special interest in Oxytocin's ability to precisely reduce cortisol levels, that results in an increased sense of calmness and gives rise to a variety of effects, i.e. that social interaction works better, learning becomes more effective and creativity, as well as the ability to solve problems, increases.

Oxytocin is released upon i.e. pleasant warmth and touch, good relationships with feelings of support and warmth, mental images, and physical activity.

Motor skills' importance for children's development

Today's research shows what areas that motor skills have an impact on. In their work "Of course everyone can

join in”, Hammer and Johansson (2008) draw inspiration from Kiphard (deemed as the founder of psychomotor pedagogy) covering how motor skills affect physical, emotional, cognitive and social dimensions.

An important step in motor skills development is a child’s ability to coordinate their movements in order to achieve automated movement. It is only when a movement is automated that energy and attention can be focused on other things.

It is important that children have faith in their body’s abilities. There is a correlation between self-esteem and physical and mental states (Annerstedt, 2002).

According to Stenberg (1992), the main purpose of motor skills training is to improve self-esteem and self-reliance, which are necessary characteristics to i.e. succeed in school.

Research shows that good motor skills provide children with a higher social status where they become more accepted among their peers (Larsson and Meckbach, 2007).

Motion is closely related to cognitive development. Several studies have been carried out, among others by Ericsson (2003) and Wolmesjö (2006), where physical activity and motor skills training was shown to improve study results.

Governing document

In the governing document ‘Health 21’, the National Health Committee’s public health goals and the current curriculum and course plans surrounding the subject of Physical Education and Health, a focus is placed on health, where physical activity is emphasised.

In relation to the subject of Physical Education and Health, you can read about the following goals which are strived for:

- Schools, in their teaching of physical education and health, should aim to see to it that students:
- develop their own knowledge of what promotes health
- develop a good self-awareness, and gain knowledge which makes it possible to see, choose and evaluate different forms of motion from a health perspective, which in turn stimulates a continuing interest in regular physical activity and taking responsibility for their own health.
- develop and deepen their ability and desire to move, and get encouraged to express their imagination, emotions and togetherness (Lpo-94 Course’s 22).

The holistic approach to health is consistent in the curriculum of physical education and health. Under the heading “The subject’s structure and nature” it states;

- Fundamentally, a health perspective should include both physical, psychological and social well-being.
- The subject stands for a holistic view of human beings, i.e. the body, intellect and ideas are interdependent and can thus contribute to the development of a student’s self-awareness.

Qigong

Qigong has roots far back in time and is the foundation for Chinese medicine.

The method is used to dissolve tension, strengthen the body and find inner peace. Through slow movements, the body’s meridians and acupuncture points are stimulated.

The Qigong form used in this study is Chi Neng Qigong. It has originally been developed by Grand Master and Professor Dr. Pang Ming. Dr. Pang Ming is trained in both Chinese and Western medicine. He founded the hospital called The Huaxia Zhiheng Qigong Recovery Centre in China, where he among other things, performed continuous scientific studies on a large scale with very good results (Pang He Ming, 2007). Dr. Pang Ming’s Qigong-system has been brought to the West with the emphasis on the education to become an instructor by teaching the Chinese background, show links with the great philosophies as well as western modern science and teach didactics in order to raise instructors with a deep understanding of this form of Qigong. The essence of Chi Neng Qigong is to combine motion, affirmation and visualisation. It is characterised by its focus on mostly the balance between the three human dimensions - the physical, mental, and the energetic.

From a learning perspective, Qigong involves life-skills training where students are provided with tools to manage even the most stressful and high-pressure situations, both for themselves and others in as supportive a means as possible, thereby increasing their well-being and quality of life.

Related theory

There is an urgent need to find tools for today's children to function in a society characterised by speed, appearance, choices, and flexibility.

In terms of theory, I would like to highlight the theories that have inspired and influenced my choice to include Qigong in my primary school class.

Theories play different roles in the study and in my approach with the children.

Aaron Antonovsky and the salutogenesis model

Aaron Antonovsky represents a shift in thinking about the perception of illness and health. He focuses on what it is that makes people stay healthy despite various pressures and difficulties. According to Antonovsky, a lot of time and money is spent on explaining why people get sick. This pathogenesis approach has been dominant until Antonovsky presented his theories.

Antonovsky's health perspective coined the term salutogenesis - an approach that he presents in his book *Mystery of Health*, 1987. Salutogenesis comes from the Latin word *salus*, meaning health or freedom, and the Greek word *genesis*, meaning origin, in other words, health's origins.

Antonovsky (2005) has a holistic view of human beings. Every person has their personal history where they are of a part of certain social and cultural backgrounds. Other factors that come into play are age and gender. All these factors determine how a person solves their problems and manages their health. To study the relationship between sociology and medicine believed Antonovsky to be a road towards the development of health issues.

Antonovsky sees human beings as active and empowering individuals. It is when the individual feels like they are participating that they find meaning in life.

According to Antonovsky (2005), man is constantly exposed to various stimuli and stress situations where it's vital to create a balance in order to maintain health.

The Antonovsky salutogenesis model is based on three components - comprehensibility, manageability and meaningfulness. In Swedish the model is abbreviated to KASAM, where K is feeling, A for 'of' and SAM stands for context. It is this sense of context that is crucial to how well we cope with stress and adversity in full health. KASAM is achieved by someone being able to:

- understand different situations
- have confidence in their ability to handle them
- think that it makes sense to manage them (Tamm, 2002, p. 214)

When the individual perceives internal or external stimuli or information as being clear, concise and coherent, it becomes understandable. If the information is however perceived as a some noise of incoherent fragments, it is difficult to interpret and understand its meaning.

If the person feels that they have the resources to handle the demands of the situation, life becomes manageable. They are aware that life involves both prosperity and adversity that cannot always control. Nevertheless, they see life as not being unfair. Antonovsky defines resources as sources of strength from within the individual, yet also help that comes from the outside, such as from friends and family, is also defined as a resource (Tamm, 2002).

Meaningfulness is the third and most important component according to Antonovsky (2005). When you experience life as being meaningful, you also see setbacks as challenges. There is something worth fighting for and putting energy into. It is the degree of meaningfulness that determines how difficulties in life are handled.

All three components - comprehensibility, manageability and meaningfulness are important in order to be able to develop a sense of respect for life through its ever-changing course of events. The components' interaction is what determines whether you can manage life and remain in good health.

The three components are closely interlinked, yet not inextricably linked.

It is man himself who draws up one's own natural sphere in which they perceive their life. It is within this sphere that comprehensibility, manageability, and meaningfulness have significance. For a man to experience his life meaningfully and have a strong KASAM, at least four sectors are needed in the life sphere. The four sectors

include the individual's emotions, intimate relationships, employment and certain existential states such as death, grief and failure.

Antonovsky (2005) takes up the concept of strong and weak (rigid) KASAM. Characteristic of a person with strong KASAM is that they see difficulties and problems that can be solved. The person is flexible in their solution strategies and can adapt to new conditions and make the best of it. A person with strong KASAM radiates calm and confidence.

A person with a rigid KASAM usually gets stuck at a particular position and does not have the ability to adapt to new circumstances. This allows the person to become vulnerable and fragile in situations in life that involve stress.

Factors that cause problems in life Antonovsky terms, like other scientists, as being stressors. He addresses three different types of stressors.

1. The chronic stressor is a life situation, a state or a quality that covers and affects large parts of life and hovers as a chronic stressful notion. It can be a physical or mental disability. It may also be childless couples that see childlessness as an intruder on the joy and meaning of life. To constantly feel that resources are not sufficient is another source of chronic stress.
2. Life event stressors are more limited in time and space than chronic stressors. It could be a divorce, the emergence of a new family member, retirement, etc that causes tension and stress. The incident may evolve harmfully, neutrally or curatively - it is the strength of a person's KASAM that decides.
3. Daily annoyances are the third type of stressors that Antonovsky addresses. They can be a bad day, conflicts with a family member or boss etc. This type of stressor does not really affect a person's KASAM or health. If the stressor returns day after day, then it involves a more fundamental life situation and is categorised under chronic stressors.

Stressors are embedded in a person's life whether we like it or not. How we handle these stressors depends on a person's KASAM - if it is strong or rigid. A person with strong KASAM selects an appropriate solution strategy and tackles the problem with confidence. They are convinced that chaos can be transformed into order, and confusion to clarity.

A person with a rigid KASAM is not flexible in their solution strategies and can use the same over and over again without any solution being realised. They lack the ability to strike a balance.

Antonovsky has created a standardised questionnaire in order to empirically measure a sense of context and thus identify the relationship between KASAM and individual health.

The questionnaire is available in two versions: a 29-question KASAM questionnaire and a short version with 13 questions. The short version can be found in Swedish as an appendix in the book *Health's Mystery* (Antonovsky, 2005).

Antonovsky and Marianne Cederblad at the Child and Adolescent Psychiatric Department in Lund, Sweden, started working together closely during Antonovsky's final years. The cooperation has resulted in the choice of using Antonovsky's model both in the investigation and treatment of children and adolescents (Hansson & Cederblad, 1995) – where an emphasis is placed on health and well-being rather than illness and psychopathology.

It is the report “Salutogenesis therapy in theory and practice” (Cederblad 1996), where ten factors are presented relating to an individual that serve as a protection against stress and illness, which has inspired my questionnaire in the study.

Antonovsky and the salutogenesis model are, for me, a vision or a goal to strive for. I see the model as providing knowledge about the building blocks towards achieving health and well-being. Namely, by making life more comprehensible, manageable and meaningful - which provides a sense of context.

Abraham Maslow and the humanistic psychology

Abraham Maslow is the spiritual father of humanistic psychology. This school of education has been influenced by ideas from existentialism, phenomenology and Eastern philosophy.

The core of humanistic psychology is the notion that human beings are constantly evolving. Humans are seen as a whole that it seeks to understand the basis of their own world of experiences (Greening; Maslow; i. Tamm, 2002).

According to Tamm (2002), Maslow's theory is focused on the healthy and wholesome individual. A healthy person is the starting point of his whole theory. There is a creative potential within every human being that should be tapped. He believed in man's ability to know himself, and as a result of this knowledge, to be able to create a better life for himself and humanity.

What Maslow is probably best known for is his motivation theory and needs pyramid. He believes that human beings seek goals in life so that they can experience life as being meaningful. The needs pyramid is divided into three levels where the primary needs form the base, followed by the secondary needs, and finally meta needs at the top.

Primary needs are vital and equal to all people and include such things as food, drink, sleep, and stimulation of senses.

Secondary needs entail security needs, needs for love and community, needs of self-esteem and self-fulfilment.

Meta needs are the needs of knowledge, need for beauty, creativity and spiritual values. Unlike the basic needs that are basically always 'shortage needs', meta needs are only developmental needs. Meta needs lack a hierarchy, unlike the primary and secondary needs.

In the 1960s a global health movement began to take shape that was entitled "Holistic Health". This movement was influenced by Maslow and his theories. In holistic health the human as a whole and their uniqueness was emphasised. At the same time it is believed that man is part of a system of other people and nature. Holistic health means positive, all-round well-being.

This approach is also prominent today. In one of the World Health Organisation's statutes, health is formulated as a state of full physical, mental and social well-being, and not merely the absence of disease or weakness.

Maslow's needs pyramid helps me as a teacher to prioritise the right things in the right order. The theory also gives me a greater understanding of situations that may arise in the classroom environment and qigong sessions.

Erik Homburger Erikson and the theory on the life cycle

Erikson has further developed and expanded Freud's theories and created a theory about man's total life course. He works both as a child psychoanalytically oriented psychologist and researcher.

Eriksson's view of man is bright and optimistic. He emphasises human creative potential. Like Maslow, Erikson believes that man is a holistic being. Human development and maturation is a product of biological, psychological and social factors.

Erikson's theory entails dividing life into eight phases. You cannot skip any phase or change the order. In each phase there is a maturing crisis of some kind. A person is characterised as being harmonious if they have the satisfaction of working through internal and external conflicts that are reflective of each maturity crisis. According to Erikson, each maturity crisis entails both a positive and a negative component.

The phase at issue in this study is the fourth phase (7 to 11 years), characterised by working smoothly vs. inferiority. The children who, for some reason, are unable to carry out their school work smoothly or may not be getting help to address this, may begin to experience new feelings towards themselves and their school work, which in turn leads to inferiority.

My knowledge of children's susceptibility to failure leads me, in my approach to students, to take on an affirming and humble attitude, both during qigong sessions and during other activities. It also feels more effective in strengthening children's self-esteem.

George Kelly's cognitive personality theory

Kelly's theory (constructive alternativism) focuses on how a person thinks, how they acquire knowledge about their life, how they react to threatening situations, and how they build up their perception of reality.

Even Kelly uses the holistic concept of man as a unique whole. In Kelly's theory, the ways in which a person embraces their environment, how he or she interprets the signals from their environment, and he or she takes actions based on those interpretations they make.

According to Tamm (2002), this theory is closest to a philosophical principle, where man is free to construct his own reality, have integrity, and be responsible for his actions.

Kelly argues that human beings are oriented towards the future. Humans have an ability to predict, based on present, their future in a way that results in them having a better grip on their lives, both now and in the future. In Kelly's (1955) own words:

"Man ventures constantly out into the future through the window of the present" (Tamm, 2002, p. 154).

Humans are able to imagine reality instead of only passively reacting to it. Such an ability to represent reality results in an individual being able to reinterpret or reformulate their reality. They are free to construct subjective interpretations of events in their surroundings, yet they are bound to their own frameworks.

Here, I see strong connections to qigong methods involving affirmations and visualisations as a tool to shape one's reality in a positive direction.

Summary

There is, in my opinion, common features with Antonovsky, Maslow, Homburger Erikson and Kelly and their theories that have heavily influenced me and resulted in my having a strong desire to carry through with my study "Qigong in school."

The above theories have a holistic view of man in which the whole is emphasised. Each person is unique with their own personal history that the theories seeks to understand based on human beings' experiences in the world.

The 'individual' approach is positive, where one sees people as active and self-determined individuals. Every human being has creative potential. They have the ability to develop their own reality that they also have responsibility for.

The focus is on health. Even setbacks and difficulties can develop into something positive. It's the same basic values and attitudes that Chi Neng Qigong stands for and my hope and desire is that children in the study will be helped towards finding a strong KASAM (sense of context) in their lives.

Purpose and questions

Ellneby (1999) emphasises the importance of, in a time like this when the tempo is turned up fast, us conveying knowledge about relaxing activities. She believes that stress may leave traces in children, especially as they are young and still growing and evolving. My purpose of this study is, as the teacher at a school, to find a way for children to manage and reduce stress and thus increase their well-being. I want to see whether Qigong can be an effective method in this context.

Stress and its effects have been studied and researched about a lot, however, not as much focus has been placed on peace, calm and well-being.

My research questions are:

1. How can the process be described that occurs when children in a primary school class frequently carry out Chi Neng Qigong exercises during one term?
2. What happens in the class, during one term, in relation to student well-being?
3. I want to explore if you can see any changes over the course of a term in the areas of
 - Conflicts with peers
 - Frequency of headaches/stomach pains
 - Students' concentration on tasks
 - Absenteeism
 - Sleep habits
4. I also want the children's views and am therefore looking for answers to:
 - What are the children's thoughts about stress?
 - What do the children think about practicing Qigong?

Method

The following section presents the approach and method I have chosen for the study. The study group is presented and the study's results are reported. The ethical principles that formed a framework around the study are presented. A presentation of the analysis procedure and a discussion about the credibility of the study conclude the chapter.

Approach and method

A study's research approach is determined according to the purpose and issues. According to the purpose of finding tools for children to manage and reduce stress, the issue is whether Chi Neng Qigong is one such tool. Therefore, I have chosen to use action research as my research method approach. Under this approach, I am using both qualitative and quantitative data collection methods.

The study "Qigong in school" has, in addition to aiming to generate additional knowledge about Qigong, focused on change, improvement and development of schools (Carr & Kemmis, 1986; McNiff, 1992).

According Rönnerman (2004), action research is a concept that is composed of two words, namely, action and research. Action means that something is to be launched and tested. In this case, it is Qigong. Another distinctive feature of action research is that it is the practitioner who formulates what is to be studied, and is the operator of the process. One of action research's strengths is that it emanates from a perceived problem in the field. Through effective and continuous reflection and analysis activities, the gap is bridged between theory and practice (Carr & Kemmis, 1986), where the research and application are not separated.

Action research is geared to follow a process where "inside knowledge" and "tacit knowledge" come into play. Social psychologist Kurt Lewin, who worked in the U.S. during the 1940s and is seen as the initiator of action research's four different phases: plan - act - observe - reflect (Rönnerman, 1998). These phases make up the cornerstones of my study.

In the process of developing and implementing Qigong session in the class, using action research with children was a given. They are constantly involved in the formulation of qigong sessions. We also adhere to action research's patterns in relation to the plan, act, observe and reflect steps that entail changes in a social situation (Rönnerman, 1998). In this case, the children were my grandmaster. Simultaneously, as an active educator and researcher, I kept a diary where I used action research's methodology in keeping constant assessment records.

The second word in action research is research - that can be described as a process that, through systematic work and connections to theories, provides new knowledge.

It is the qualitative approach that controls scientific thought in my study. The emphasis is on holistic information, i.e. not only details but the focus is on the whole that emerges. The main task is, through systematic work, to study how individuals perceive and interpret the world. A qualitative approach searches for occurrences, frequencies and possible links between these (Widerberg, 2002). The act of focusing on describing and understanding these unique phenomena is called ideographical research by Stukas (2005).

The aim of a qualitative analysis is, according to Starrin (1994), "to identify and determine yet unknown or unsatisfactory known phenomena, characteristics and meanings in relation to variations, structures and processes" (p. 23). The qualitative covers characteristics, values and motives, meaning, intention or the intention of human sensations, experiences, behaviours, gestures and actions. Further support for a qualitative approach to study "Qigong in school" comes from Marshall and Rossman (1995) who argue that a qualitative approach is used where the research problem concerns the unexpected or unknown.

We need different approaches in order to identify different processes in the class. Since the aim is to gain deeper insights into complex events, I have chosen to use both qualitative and quantitative data collection methods. Kidder & Fine (1987) consider that there isn't anything strange with combining qualitative and quantitative methods. It is rather a form of triangulation that enhances both the validity and reliability of the study that has been done.

I have, in my choice of methods, also been influenced by Maslow and his scientific approach (Tamm, 2002). He believes that research should consist of two phases, one qualitative and one quantitative. In the first stage, the data is collected through interviews. People have a qualitative, phenomenological orientation. The researcher

works intuitively and tries to gain an overall impression of their research area. In the second phase the researcher begins using different methods. These two phases, according to Maslow, ensure that you embrace a comprehensive approach surrounding a research area.

Eikeland (1994) sets forth three traditions for action research 1) action research related to school development, 2) action research related to organisational and leadership development, and 3) action research related to adult learning and local community development. In this study, it is action research linked to school development that is relevant because I seek knowledge on how we can improve students' well-being in school.

Study Group

The study is carried out in an age-integrated primary school class with 23 students. There are ten students following school line 1 - with six boys and four girls. In line 2 there are seven students composing of three boys and four girls. Line 3 is composed of five girls and one boy. Because of ethical reasons, I have chosen not to describe the group in more detail.

Implementation

After receiving parental permission (app. 1), I conducted the study during the autumn term of 2008. I told the kids that we would try Qigong as a way to get relaxed. To date the children were familiar with relaxation and massage buddies so Qigong was perceived as nothing strange or different.

In late August and early September (bil. 2) the children were interviewed where they could say what they thought and felt about stress. They were also asked to explain in what ways they relax. These interviews were conducted before we started with qigong. The interviews were conducted to gain an idea of whether stress was perceived as a problem for children. The purpose of the qualitative interview is, according to Kvale (1997), "to obtain descriptions of the interviewee's natural surroundings in order to interpret the described phenomena's meaning" (p. 35).

The interviews were recorded on tape. Notes were also taken down during the interview to record facial and body expressions. After each interview, I wrote down my own thoughts and ideas that came up as a result of the interview.

The report "Salutogenesis therapy in theory and practice" (Cederblad 1996) presented ten factors in relation to the individual that serve as protection from stress and illness.

The ten factors are:

1. Good social capacity
2. Positive self-esteem
3. Independence
4. Successful coping
5. Intelligence and creativity
6. Development of special interests and hobbies
7. Internal control
8. Impulse control
9. High activity and energy
10. Optimism and confidence

It is, among other things, from these parameters which students base their sense of well-being in the study. What caused me the greatest difficulty was designing the questionnaire so that it would provide me with a clear idea of the children's well-being based on Cederblad's salutogenesis factors that act as a protection from stress and illness (Cederblad 1996). The questionnaire would be answered before we introduced Qigong and at the end of the study too.

Firstly a pilot study was done in which Antonovsky's short version of the KASAM questionnaire was used (Antonovsky, 2005. *Health's Mystery*, p. 247). It turned out that the questions were difficult for children to understand because it required a level of reflectivity that the children were not yet ready for.

After looking at a number of ready-to-use EQ-tests for children, I decided to design the questionnaire based on what the children in the class interpreted in Cederblad's factors.

To get an idea of what i.e. social skills were to them, I asked the children:

- How do you see or notice that a classmate is working well with others?

The children were enthusiastic and it went better than expected to develop criteria based on the children's definitions of Cederblad's factors (app. 3).

The questionnaire was extensive and therefore was divided up into several occasions.

Two different observation procedures were used in the study, one incorporated the freedom associated with a Qigong session and the other was observing different behaviours in conjunction with the special registration schedule. As Paul Repstad (1999) points out, the advantage of observations are that they provide the researcher or the person who will conduct a study with direct access to social interaction and social processes.

The children actively participated in the study by recording when they had been at odds with a classmate (app. 4).

They also noted down when they had a headache or stomach ache (app. 4).

This approach meant that children were involved. The results painted a picture reflecting each day of the term and provided concrete information that supplemented the survey.

Once a month, a survey was carried out covering the children's sleep habits (app. 5).

A second interview was carried out at the end of the study where the children told of their experiences with the Qigong sessions (app. 6). In the second interview I sought answers to what Qigong meant for the children and also got answers about how we should proceed.

Ethical approach

There are fundamental ethical principles for research that are described by the Humanities and Social Sciences Council of Sweden, HSFR (2002). The principles are designed to protect the rights of intellectual property by taking into account copyright and to contribute to the accuracy and precision of scientific knowledge.

In HSFR's Ethical Guidelines four key requirements are also described; information requirement, the consent requirement, confidentiality requirement and utilisation requirement. It is mainly the first three requirements that are relevant because the study is carried out within in a public organisation.

Information requirement implies that those involved in the study aware of the study and that participation is voluntary. The study's purpose and approach are presented along with how results will be used.

Consent requirement implies that participants in a survey have the right to determine their involvement.

In the current study, parents of students in the class were informed about the purpose and implementation via a written message sent to their homes (app. 1). Via an answer form, parents gave their consent as to whether they allowed their children participate in the study.

The children in the class were asked out loud whether they wanted to try Qigong to see what they thought about it. All the children wanted to try it. I then told them about the format.

Confidentiality requirement implies taking into account the participants' anonymity. This has been a balancing act. The fact that I am both the class teacher and a researcher means that the school and class can be identified. That is why I was eager to protect the anonymity of the students and referred to them anonymously in the study. The issue has also been discussed in a parent meeting where parents saw no problem with the study taking place at the group level.

Analysis

I have been using the qualitative data analysis to obtain the main elements in hindsight of the study's purpose and questionnaire.

Collection and analysis of information in the qualitative study were carried out simultaneously. The analysis starts already at the first interview, the first observation or when you read the first paper.

The analysis is the result of a lengthy reflection, in what Wadel (1991) calls a perpetual feedback circle between theory, method and data.

The analysis process involves screening, combining, reducing and interpreted empirical data.

The initial analysis involved what data collection methods I would use to obtain base material that reflected the objectives and issues, the literature and the actual theories. After the analysis it became clear that a broad range of methods were needed that complemented each other. Literature was selected from two categories: trouble areas such as stress and lack of concentration, and from theories based on children's needs and development.

Each method of data collection needs its specific analytical procedure.

Whether an interview is a success or not is affected by the interaction between interviewer and respondent. The first analysis was carried out during the interview. It was important to quickly analyse the following issues that are appropriate, in this case with regard to the student and the type of information sought.

Ely (1993), among others, writes that the purpose of the analysis is to achieve meaning, which is done by "defining a set of categories according to the type of data you have to work with" (p. 159). She describes that the work, among other things, involves reading, thinking, examining, checking and modifying the categories. Categories help to structure the material. Even Patel and Davidsson (1994) point out that the objective of the work is "to find patterns, themes and categories in the material" (p. 101).

Analytical work with interviews and participant observations was based on the above guidelines.

The interview covering stress was printed out word for word. After a series of readings one could discern patterns in the responses that could be divided into categories. Statements were sorted into the different categories and titled. Afterwards, each category was analysed in order to assess the category's homogeneity. Some statements were revised and others were merged. Then the work changed to looking for "core citations" that clearly reflected a given category.

The last phase of the analysis was to cross-reference the categories against current literature on the subject of stress.

The material from participant observations was analysed using the same patterns as those from the interviews. Since the material was so extensive (notes from each day's qigong session), therefore, continuous assessment was necessary. I chose to do a preliminary analysis every week. Here it was important to filter everything and identify that which was essential for the study. Based on the gathered material, categorisation was carried out. At the end of each month, weekly categorisations were revised and a monthly overview could take shape.

In the report "Salutogenesis therapy in theory and practice" (Cederblad 1996), ten factors are presented relating to the individual that serve to protect from stress and illness.

Before formulating a survey on well-being, a text analysis was carried out together with the children regarding these ten factors. What is the concept behind it all and how the children interpreted the factors were important issues.

Survey analysis was to see what differences and similarities there were in regards to responses given in September versus December. What conclusions can be drawn from the results? What theories can be linked to the outcome? Children's time entries in their daily log books on days with or without Qigong were compiled for each month and averages were calculated.

Other data collections in the study were processed similarly. Using quantitative methods, summaries were made regarding the frequency of conflicts, stomach pains, headaches and absenteeism.

When all the data was collected and analysed separately, the final analysis took shape by combining the results to gain a full picture. From the overall picture, conclusions could be drawn towards finding answers to the issues raised by the study. It means, as Miles & Huberman (1984, p. 228) write, that one lifts oneself up from “the empirical marsh to a more comprehensible view of the landscape. We do not only deal with the observable, yet also with the non-observable, and we join the two together with layer upon layer of conclusions “.

Margot Ely (1993), among others, describes a final analysis as follows:

To analyse is to find one or more ways of obtaining what we perceive as the raw facts’ most significant effects - to compress, reorganise and combine them so that readers of the result report may take part of the researcher’s discoveries in the simplest and most interesting way (p. 154).

My wish and desire is that my analysis can live up to Ely’s words.

Summary of data collection and analysis

In order to gain an overview of the study’s gathered data and analysis process, a summary is provided in the table below

Gathered data	At start	Every day	Week	Month	Finish	Partially analysis	Finished analysis
Interview about stress		x				x	x
Questionnaire about well-being		x			x	x x	
Log book about Qigong session		x				Every week	
						and every month	x
Observations with set parameters				x		Every month	x
Student log about headaches/ stomach pains		x				Every month	x
Absenteeism documentation		x				Every month	x
Questionnaire about sleeping habits				x		Every month	x
Time log about concentration at time of writing in daily log book			2 times per week			Every week and every month	x

Table 1. Overview of gathered data and analysis process

Study’s credibility

The credibility of qualitative research is based on reasonable and credible interpretations having been made. In a qualitative study, reliability and validity are more intertwined than in a quantitative study (STUK, 2005).

I have strived to make my thoughts and interpretations understandable to the reader. The study’s credibility is emulated through a description of:

- Investigative process
- Data collection methodology
- Analysis of data
- Results

Investigation process

Eisenhart & Borko (1993) have developed a set of general criteria to illustrate the credibility of various types of educational research. The first criterion addresses the issue of how research questions, data collection methods and analysis techniques fit together.

Action research is the basis for the current study's survey approach. In my interpretation, action research data collection methods and analysis techniques fit well with the study's purpose and how it investigates as to whether Qigong can be an effective method to improve students' well-being. The study is based on reality and its objective is to develop the organisation. By the study adhering well to the action research approach, it provides the study with an outer framework so as to increase the research process' credibility.

Action research has been criticised, among others areas, because results tend to be too practical-bound and largely do not apply outside of their own context (Zeichner & Noffke, 2001). To some extent I agree with this, yet believe that the current study, Qigong in school, can easily be repeated for more children's groups, resulting in the study becoming more generalised.

Data Collection Methodology

The study's credibility in terms of data collection methodology is based on triangulation. Denzin (1989) deals with methodological triangulation, which means that it combines different methods to assess/illustrate the same phenomenon, for example, combining quantitative and qualitative methods.

The issues at hand resulted in the measurement tools not being sufficient enough because there were so many diverse factors that could affect the outcome.

The weakness of a method is often the strength of another and by combining different approaches, the best can be taken from the individual methods and the weakest parts neutralised.

In the study I have used data triangulation where I combined different types of data sources, i.e. interviews, observations, surveys, time studies and students' own data collection. I have studied different people (students), different situations (qigong workouts, lessons, breaks), various locations (classroom, a gym, playground, and dining hall) and at different times (over 1 day, over one term).

There are both advantages and disadvantages of having dual roles, first as a researcher, and as an educator of the group. One of the advantages is that there is an opportunity for feedback via the analysis made by the participants. Kvale (1989) considers that the assessment of whether an interpretation is valid or not is determined by dialogue. He also believes that the participants are legitimate partners in this dialogue. Denzin (1989) believes that the participants are largely able to assess and evaluate the results the researcher concluded, and that it should be that the participants know more than the researcher about the phenomenon of the study.

Analysis of data

In a qualitative study, says Kvale (1989), credibility is based on the existence of empirical evidence and that it has helped conclude a reasonable interpretation.

In the study, "Qigong in school", there is a wide variety of empirical data to analyse.

Data analysis is based on triangulation because each computer requires a form of analysis. Denzin (1989) argues that triangulation should be seen as an appropriate strategy to demonstrate that results are credible.

Triangulation is also found in the preliminary analysis. When designing the questionnaire on well-being (image 3) the children did an analysis based on Cederblad's ten factors that act as protection against stress and illness (Cederblad 1996).

Also, the children themselves noted down when they felt that they were in conflict with each other and when they had a headache or stomach pain. Hereby they made their own analysis of these parameters.

My analytical work entailed interpreting the interviews and observations and finding a pattern in them. In this there runs a risk of misinterpretation, but this risk is reduced because I am familiar with both the children and the environment.

Analytical work has been ongoing during the study and carried out by both the children and me, which in my opinion strengthens the credibility.

Results

The results are based in empirical data and analysis of the various results. The study's qualitative and quantitative measurement methods are complementary and enhanced credibility.

It is only the final analysis stage that will unveil how well the study measured what it was intended to measure and whether the investigative process was up to standard.

Results

The results are reported under the following headings:

- Children's thoughts on stress
- Process from a teacher's perspective
- Observation of fixed parameters
- Students' well-being (Survey based on Cederblad's factors, 1996)
- Students' concentration on a task
- Frequency of stomach pains/headaches
- Absenteeism due to illness
- Sleeping habits
- Children's thoughts about Qigong

In my opinion, to make the study more transparent, I have chosen to enter a range of results as percentages in relation to the given answers in spite of a relatively small study group (23 students).

Children's thoughts on stress

Student interviews

Student interviews were conducted in August and September with all the children in the class, and based on issues related to stress (image 2).

During the interviews we followed no strict guidelines, yet they were used more as support pointers in the interview. In their stories, the children divulged certain situations where they felt stressed. Both for ethical and humanitarian reasons, the interviews were not too much to cope with by i.e. having supplementary questions. A summary was made after each interview and the children had the opportunity to confirm whether I understood them correctly or not. Based on the approach, both the children and their stories became clearer and the children also had the opportunity to further clarify their stories.

Mind - body - sense

The children appreciated the alone time with the teacher and were very happy to chat. After an initial phase, we entered the area of stress. Posture and facial expressions changed and they often made a sad impression. Most children became quiet and spoke more slowly when the topic came up. Several children had a need to have something in their hands, and some began to wander around. More than half of them found it hard to keep concentrating on the issue and were easily distracted, even though they had questions and wanted to know more and tell more in regards to this topic.

Body language signaled clearly what the children knew. In some cases, sadness even continued for a period of time after the interview. My reflection was that I must tread very carefully and give the children lots of space to be able to tell me exactly what they wanted to without any in-depth follow-up questions from my side.

Children's verbal descriptions of how it feels when they are under stress provides an understanding of their bodily expressions during the interview.

- It feels like a bad dream.
- It's a horrible feeling.
- When someone tells me to hurry up I get a stomach ache.
- It feels hard
- Pain in my body and arms.
- I get a headache. My head spins as well.
- I can't see that well then.

- It doesn't feel that great.
- It feels very sad.
- I feel tense in my body.
- I cannot find a sense of 'me'
- My heart is beating faster than I can keep up with
- I drop things and they break.

One of Qigong's pillars is the relationship and interaction between mind - body - sense. Interviews demonstrated that a clear way of thinking affects both body and mind in a tangible way.

When you read the children's statements and observe their body language during the interviews, it is the behaviour that Ellneby (1999) describes as a sign of a stressed child.

Stress factors

The children said they were stressed by the following situations, which are presented in descending order:

The most common stress factor was the time factor. These were i.e. to get home in time, to school in time, and during playtime.

The following quotation is reflective for all the children's statements in the interview about time.

"I would like to take all the clocks in a large rocket, and send them up to the moon - where they can stay."

The children expressed that they were hounded throughout the day by keeping to times. In the morning you had to hurry to catch the school bus. During the school day you needed to hurry up after a break, then rush to get out to the play break. During lessons we must hurry with our work to get it all done on time. In our spare time we have to be punctual to make sure we get to participate in recreational activities. Or we have to rush over if a friend calls and wants to play. At home you have to hurry if you're going to go somewhere. Then in the evening you have to hurry up and get to sleep.

The children experienced significantly greater stress when having to hurry.

One of the children had arrived at a strategy to avoid stress:

"You should not rush, because then you just get more to do."

Children's stories match well with several of Währborg's (2002), stressors such as time-and decision conflicts.

The next major category was the stress created by the concern for adults giving off signs of stress or imbalance (raised voice, annoyed, angry, depressed - such as crying). The children were most sensitive when parents' stress levels were high for a long time.

The same tendency was shown at school. If the stress level in adults was constantly high for a long time, the children felt the experience as being quite bothersome.

The majority (15 students) found that adults are stressed more than children and that the stress of adults is something that can spread and infect others.

"I don't think grown-ups should be in such a rush all the time, because it's contagious anyway, and that's dumb."

In third place was interacting with peers. It was mainly conflicts with best friends that quickly led to stomach pains and feelings as if life was falling apart.

"When I am fighting with ... I don't know what to do. It's the worst feeling. It feels like the roof is falling down on me."

But even conflicts between groups of children were emotionally difficult to handle and created stress reactions.

"I'm getting a stomach ache, I just see them, and my heart starts pounding.

A third aspect of peer interactions was not daring to say what they really think.

Synonymous with this category was the absence of strategies to cope with and get out of the situations that created stress. The children felt completely out of touch and lost in such situations.

Antonovsky (2005) stresses the importance of manageability. It doesn't matter how understandable or meaningful a situation is, if you cannot handle it.

For many children evenings were difficult when there was a fear of being unable to fall asleep. It was mainly children who were hyperactive and had difficulty with settling down.

The children also experienced stress with video games that they couldn't cope with. Horror or violent movies was another stress-trigger that resulted in insomnia.

Some students did not like sports because of the competing aspect. They felt stressed and found it difficult to perform under pressure from teammates.

The interviews confirmed that we live in a stressful environment in which we chase time. Peter Währborg (2002) writes that "children often interpret the concept of stress as a form of time constraint, while adults usually have more varied responses to the question".

The main reason, according to Ellneby (1999), that children experience stress is that they feel they are inadequate and not good enough. No such trends were noted in the interviews. The reason for this, I think, may be due to the children solely describing real situations where they had experienced stress. They had no psychological stress in their conceptual world and could not express it. However, I am absolutely convinced that it exists and would have come to the surface using follow-up questions on a deeper level.

Children's stories and their body language during the interview affected me as a teacher and human being very strongly. We adults must become more aware of what signals we send to our children. The aim of the study feels more relevant than ever.

Feeling good as a result of

Answers to questions: *'How do you become calm? What do you like doing? How do you unwind and relax?'* and *'What makes you happy and cheerful? Overlapped together into one area, you could summarise with the question 'What makes me feel good?'*

The kids felt good from: (in descending order):

1. Playing with a friend
2. Playing with my cat or dog
3. Going on holiday
4. Reading a book
5. Going to swim
6. Watching TV
7. Playing computer games
8. Wining in soccer/football
9. Going to an amusement park
10. Having a birthday

Responses were considerably focused on social interaction with peers, family or pets.

Elkind (1981) identifies five characteristics as protective factors against stressful situations and environments. The most important characteristic is the social character of the child being comfortable with adults and their peers.

Children prioritise, therefore, the skill that represents the strongest protection against harmful stress.

Process from a teacher's perspective

Participant observations and logbook

After analysis of the extensive documentation from participant observations and logbook records, three main themes were revealed; concentration, motor skills and self awareness. I have chosen to present the results in a narrative sense, although it will be a presentation of the first degree, meaning that I interpret using terms that are

close or identical to those that participants used (Fangen, 2005). The reason for this is that I want to invite the reader in and experience the environment in which the study takes place.

The result is a summary based on current records which are bundled together on a monthly basis. The observations concern mainly Qigong sessions.

Today's research shows that every living organism is in constant contact with, and constantly influenced by, the surrounding environment. (Uvnäs, Moberg 2000). We can create an environment based on the needs we have and what we want to achieve. I have embraced lessons from children's stories of stress and aim to provide the children with the most stress-free environment as possible.

In Qigong sessions, lights are turned off in the classroom, a lava lamp is lit, and soft music is played. The children in the study mentioned that they already felt calm just upon entering the classroom at these times. The new experience of the environment's importance in creating a mood and calmness is something used spontaneously by children in other contexts.

September: After receiving parental consent, we started in the second week of September and I told the kids that we would start doing Qigong in school. The children were curious and keen.

I told about the general concept of Qigong, after which each child was allocated a separate Qigong space. I showed the initial exercises of "Lift Qi Up". At this point, several students lost concentration. Someone went to the bathroom, several children stood and chatted with each other while some crawled around on the floor. My attitude throughout the project was not to reprimand a student. I felt that this would be a challenge and decided to begin with short exercises, because I wanted each child would know that they succeeded.

Together with the children we decided to start with 1 minute of Qigong, and 2 minutes the next day, and so on. The challenge appealed to the children. We agreed to start with exercise "La Qi" where one should imagine that one has energy between their hands. One child came up with the proposal that we would pretend that we had "The Snitch" from the Harry Potter books between their hands. The children were delighted by the idea. The first month was characterised by children not concentrating and only brief moments of Qigong being implemented. During the first month, it was unusual for the children. Many stood and grimaced at each other and tried to interfere with their peers.

Most children in the group had difficulty with balance when standing with their feet together. Another challenge was to find different parts of the body. When the kids would point to their belly button, many ended up pointing at their chest, forehead, or on top of their head and so on. It was clear that self awareness was a developing area. Another problem was coordination and spatial perception. It was also difficult for them to comprehend the difference between tense and relaxed.

For some children, it was difficult to find a direct and open approach.

Those who had difficulty starting with Qigong were mainly the younger pupils with motor difficulties due to age and those children who previously demonstrated difficulty with motor skills and concentration.

October: In late October we were up to ten minutes per Qigong session. The children had ceased to make faces and giggle. On the other hand, children with attention difficulties still found it hard to stay focused on the movements. To remedy this problem, we decided together that if we could not manage or lost ourselves, children could play the "Still Game" which means that they would try to stand still at their space and put their hands on their belly button and close their eyes.

This worked very well and quietness began to slowly spread. The children had also begun to ask for Qigong sessions and were keen for them to take place every day. They also gave suggestions in regards to affirmations (positive things to say to themselves).

Spatial awareness had been improved and the children found their set "Qigong spaces" easily after exercises such as dancing. The children had come to be aware of the difference between tense and relaxed, and even casual.

Self awareness was slightly better yet many children still had difficulty with this. Coordination was virtually unchanged, as well as posture.

November: In November we witnessed major changes. The change was striking and very different from one week to the next. It was now completely silent during Qigong sessions. The children were able to concentrate on the movements, even those who previously had had great difficulty concentrating. Motor skills had considerably improved.

More and more children could close their eyes during the exercises and now a sense of calm radiated which did not previously exist. The calmness spread even over into ordinary school work. Qigong sessions were now up to about 20 minutes per day.

December: The positive trend continues. The children express that they are pleased and proud that they know Qigong. They ask and want to learn more. Many children are using Qigong spontaneously in school work such as when they are stuck on something like a math problem. Children now know the exercises La Qi and Lift Qi Up by heart. They also know the affirmation and visualisation exercises. The duration of Qigong sessions is up to 20-30 minutes.

During Qigong sessions, the children's motor skills gradually improved month by month. They can now manage to do more difficult balance exercises such as the "Crane's walk", without any major problems. Much progress has been made regarding self awareness, direction and spatial abilities, the ability to cross the body's middle line, and coordination.

It's not just during Qigong sessions that motor development is noticeable, yet also during lessons and breaks. Children's posture and movement patterns have undergone a great change.

A result was that knee scrubbings, bruising from falling, twisted ankles and colliding with friends during the school day had virtually ceased. The children were at one with their bodies.

A safe, happy and optimistic person is different from an uncertain one.

Even those children who previously withdrew and kept to themselves are now playing in games. Through improved motor functions, self-confidence increased and the ability to participate in the games on equal terms.

There is now a friendlier and more harmonious atmosphere amongst the children during lessons, in corridors and during play breaks.

In my logbook entries, it is easy to distinguish a change of attitude in myself as a teacher during this period. During September, there were many concerns and feelings of inadequacy, and even uncertainty. The focus was on what was not working and all the obstacles and difficulties. Then the tone became happier and more optimistic. Qigong exercises also affected me and the interaction between the children's well-being and mine was very apparent.

Observations with fixed parameters

The controlled observations with fixed parameters are carried out the same day of the week throughout the term. The numbers in each column are an arithmetic average per observation day and consists of four observations per month with the exception of December, with three observations.

	September	October	November	December
Toilet visits during lesson.	15/day	13/day	3/day	0/day
Teacher complaints from excessive talking.	16/day	10/day	4/day	1/day
Teacher complaints from other disruptive behaviour.	12/day	9/day	0/day	0/day
Help with getting started with their work.	14/day	8/day	2/day	1/day
Individual repetition of instructions after instructions given to a class or group.	17/day	11/day	3/day	1/day

Table 2. Summary of student observations

The decrease of toilet visits is a strong indicator of children's well-being having increased. Concentration has increased as both talking out loud and other disruptive behaviour has pretty much ceased. They have increased their ability to get started, stick to, and finish a task which, according Kadesjö (2002), is evidence of the ability to concentrate.

The ability to listen to instructions has undergone the same change. A contributing factor to this may be that I could devote myself to teaching in a totally different way because distractions had so considerably decreased. One result was that both the students and I felt greater work satisfaction.

From my experience as a teacher for over 30 years, the difference between October and November was striking and shows a development well out of the ordinary.

The outcome of the observations may have been influenced by a variety of factors such as the children having gotten into the routine of things better, having become better familiar with each other and their teachers etc. But it is not viable as the sole explanation for the extremely large difference between October and November.

Students' well-being

A survey (appendix 3) was constructed with the children based on Cederblad's ten factors - factors to protect against stress and illness. Each factor is based on seven to eight statements that the children have had to confront. The survey was conducted at the beginning and at the end of the study.

In order to make the questionnaire responses more transparent, I have melded response choices ranging from 'Agree' and 'Agree completely' to 'Good'. The responses ranging from 'Partly agree/partly don't agree', 'Neutral', 'Don't agree', 'Don't agree at all', and 'Bad' were also melded. Figures are in percent of the given answers.

Social skills

In regards to the claim "I like to work with my friends during lessons", 35% of the students agreed with this statement in September. The corresponding figure for December was 61%. Cooperation and positive interaction amongst students had increased by 26%.

To "Others listen to me when I have something to say", 60% of the children felt that this was the case in September. In December, the corresponding figure was 96%.

The children also perceived that their ability to listen to others had improved (43% in September and 74% in December).

The important area of peers and security paints the following picture:

	September	December
I have friends to play with during breaks.	86%	100%
I feel safe during breaks.	86%	100%
I feel calm and safe during lessons.	86%	100%

Table 3. Security and peer relationships

As the percentage of September is exactly the same in response to all three statements, it is likely that the same children who feel they do not have anyone to play with during the breaks are those that did not feel secure during the breaks and lessons. Here comes the double role into play as both a teacher and a researcher. As a teacher, it is necessary to immediately help those students who do not feel secure, yet as a researcher it is a viable result of the study.

Throughout the term the children themselves noted things down in a diary when they had been in conflict with one or more peers.

The result is an ongoing documentation of conflicts for each school day during the term.

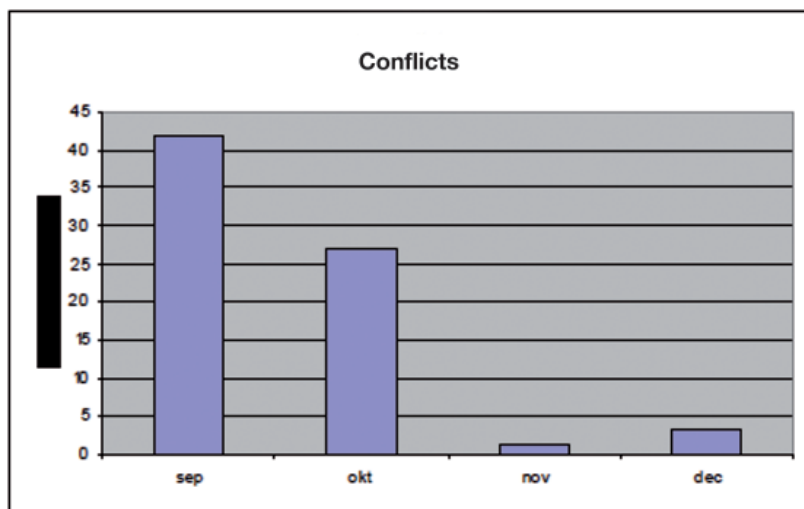


Figure 1. Number of conflicts per month that were logged by the students

Results of the survey and student logs of conflicts provide a clear picture. The responses reflected that, in September, 21% said that they get along with their peers. In December, the corresponding figure was 65%.

In December, the number of conflicts increased by two. In my experience, it is a normal trend in December that conflicts increase because the children are tired and longing for Christmas holidays. There are also special activities during the month which can be experienced as being stressful for some children. My conclusion focuses on the fact that the number of conflicts was extremely low for the month when compared to the previous year.

The frequency of conflicts and the number of minutes for each Qigong session provides a clear reflection of the children's reality.

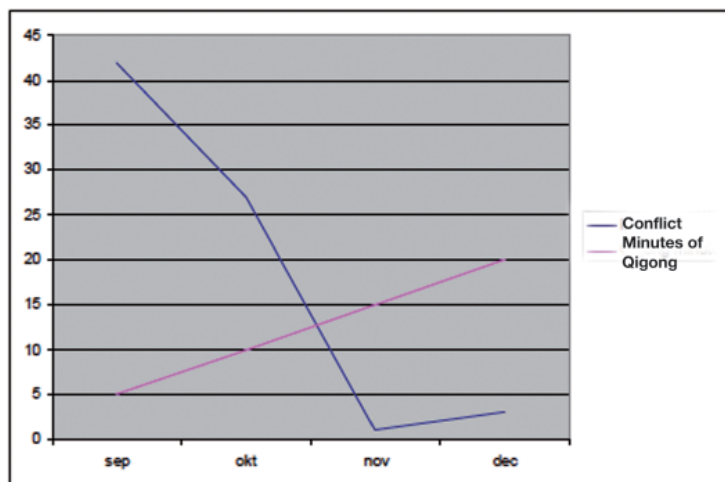


Figure 2. The frequency of conflicts and the number of minutes of Qigong sessions.

It is obvious that social competence significantly increased for the children. Conflicts are very few, interactions between the children have grown, and the children feel secure during both breaks and lessons.

Self-confidence

Self-confidence	September	December
I think I can handle things well in school.	43%	96%
If something is difficult or inconvenient, I believe it is solvable.	22%	74%
I take responsibility for my homework.	48%	83%
I take responsibility for my school work.	48%	100%
I help out at home.	56%	74%
Others see what I'm good at.	65%	96%
I can speak my mind.	43%	87%
I like to stand out in front of my peers.	39%	83%
I like to play in theater class and perform.	56%	100%
I like to try to do new things.	48%	91%

Table 4. Children's self-confidence from September to December.

The results show that children's self confidence has increased significantly from September to December. Part of the increase is likely because the children have matured and become more secure with the school environment and expectations and demands placed on them.

Certain statements i.e. 'I think I can handle things well in school, others see what I'm good at, I like to try to do new things', reflect more the individual student's perception of themselves and their personality.

A clear demonstration that confidence has increased is that all children enjoy playing in theater class and performing. This also entails the children whose personalities are deemed as being a bit more reclusive.

In follow-up discussions in November, several parents also brought up that they had noticed a large development in the self-confidence of their children.

Independence

Independence	September	December
I can handle many things at school on my own.	30%	78%
I can handle many things at home on my own.	61%	91%
I can handle many things on my own during in free time.	65%	78%

Table 5. Children's perception of their independence.

That children can handle more things at school on their own is a natural progression. However, there is a sharp increase in feelings of independence at home. Several parents have indicated that they have noticed a big development in a short time frame as to what children can handle on their own at home.

Antonovsky (2002) argues that self-determined beings perceive more meaningfulness in life. With the children's perception of their own autonomy having increased, it is likely that their feelings of meaningfulness have increased.

Creativity, interests and hobbies

Creativity, interests and hobbies	September	December
I easily think of ideas and solutions for different things.	56%	74%
Others need to tell me what to do.	30%	78%
I'm interested in, and have, a hobby or do a sport.	65%	69%

Table 6. Creativity, interests and hobbies

Creativity has increased from September to December. Hobbies and sports remain somewhat unchanged. The reason may be due to various factors such as the opportunity for parents to drive to various activities. Or that the leisure activities and hobbies are dominated by football, which may not suit everyone.

Internal control and impulse control

Internal control, impulse control	September	December
I get to be involved in deciding things at school.	69%	87%
I get to be involved in decisions at home.	48%	48%
I get to be involved in decisions about what I do in my free time.	69%	82%
I never get really angry at school.	35%	61%
I never get really angry at home.	30%	61%
I can choose what to do when I get angry, disappointed or sad	26%	43%

Table 7. Internal control and impulse control

Children are more involved in decisions at school and concerning their leisure time than they are at home. Here there has not been an increase, even though table 5 (page 45) shows that the children feel they can handle many things on their own at home. But it can also involve issues such as children being able to take part in deciding on financial matters such as their spending money/allowance.

Outbursts of anger have decreased, yet if a child gets really angry it can just as well take place in school as at home. Some developments have taken place in regards to impulse control.

Activity and energy

Activity and energy	September	December
I like to have a lot to do in lessons.	13%	13%
I like to have a lot to do at home.	52%	52%
I like to have a lot to do in my free time	60%	82%
I do not feel stressed during the lessons at school.	69%	87%
I do not feel stressed during school breaks.	82%	100%
At home I feel no stress.	47%	65%
I do not feel stressed during my leisure time	52%	74%

Figure 8. Activity and energy

The children did not like having too much to do in lessons. In conversations afterward it was noted that they wanted time to finish work if they had begun something. To have several unfinished pieces of schoolwork lying around was something that the children experienced as being stressful.

The feeling of stress had decreased from September to December in all areas - lessons, breaks, at home and during free time. The children were also more keen to take on leisure activities.

Optimism and confidence

Optimism and confidence	September	December
I am confident about myself.	47%	74%
It's fun to be me.	60%	78%
I think I can be what I want to be in the future.	43%	74%
I often feel happy and cheerful.	60%	78%

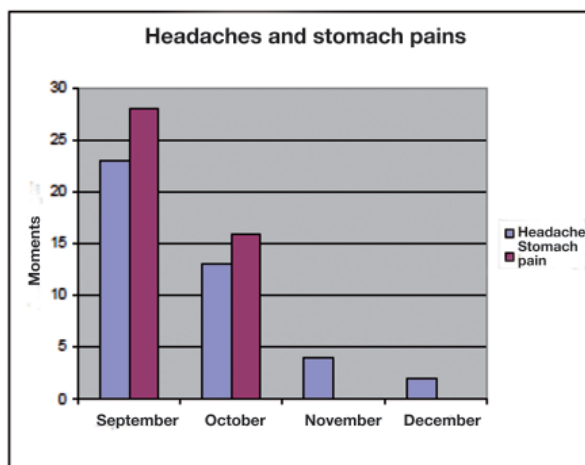
Table 9. Optimism and confidence.

It is our children at the school that this involves, so although the figures show a positive trend, it would be ideal if all the children had optimism and confidence.

Headaches, stomach pains

The children kept a logbook and recorded if they ever had a headache or stomach pain.

In the beginning, I had to remind them at the beginning of each day about the logbook, but it soon became a routine for children without me having to say anything.

*Figure 3. Headaches and stomach pains*

Headaches and stomach pains are often signs of stress in children (Ellneby, 1999). The result is an indicator that stress levels have decreased.

Bodily symptoms were also in the survey as control questions.

Bodily symptoms	September	December
I don't get headaches at school.	43%	91%
I don't get headaches during free time.	52%	91%
I don't get headaches at home.	65%	87%
I don't get stomach aches at home.	65%	87%
I don't get stomach aches during free time.	52%	91%
I don't get stomach aches at school.	43%	91%

Table 10. Bodily symptoms

Children's own logs about stomach pains and headaches I deem as being very reliable because the logbooks were kept daily. The questionnaire was answered on two occasions. Both of the measurement tools paint a similar picture.

The compilation of the survey as a whole provides a clear picture that well-being has increased considerably amongst children.

Factors mutually influence each other, contributing to a virtuous circle.

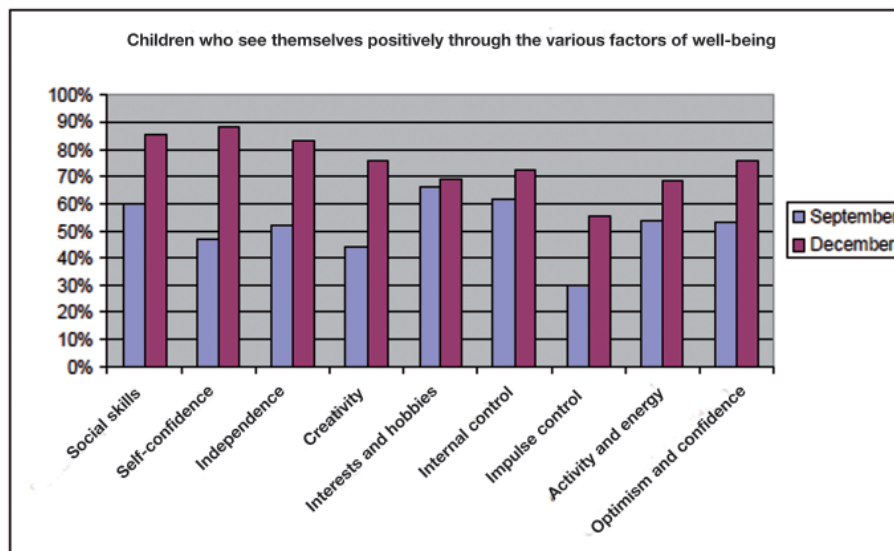


Figure 4. The proportion of children who see themselves positively in hindsight to the various factors of well-being.

Students' concentration on a task

A key factor in learning is a child's ability to concentrate on their work. The children, with the help of a stopwatch, timed how long they took to write their logbook entries. The class writes a diary twice a week on Mondays and Fridays. For one of those times we did not practice Qigong before diary writing and the other time that week, we did.

Month	Without Qigong	With Qigong	Time Difference
September	7	8	1
October	10	13	3
November	14	20	6
December	17	25	8

Table 11. Average of the time, in minutes, that students took to concentrate on writing their own diaries on each occasion.

The result is an average for the class. At the individual level, I discovered that the Qigong session affected the concentration of diary/logbook writing very differently. The students who wrote a long time without Qigong were affected very little. However, the students that had difficulty concentrating were greatly affected. Even from a gender perspective there was a difference.

The time difference between concentration with Qigong and without Qigong were significantly higher amongst boys than girls. In Figure 5, numbers 2, 7, 9, 10, 11, 12, 14, 16, 19 and 23 are boys. Student number 23 injured his leg in December and could not partake in any Qigong sessions, this felt very frustrating for him, which explains the result of December.

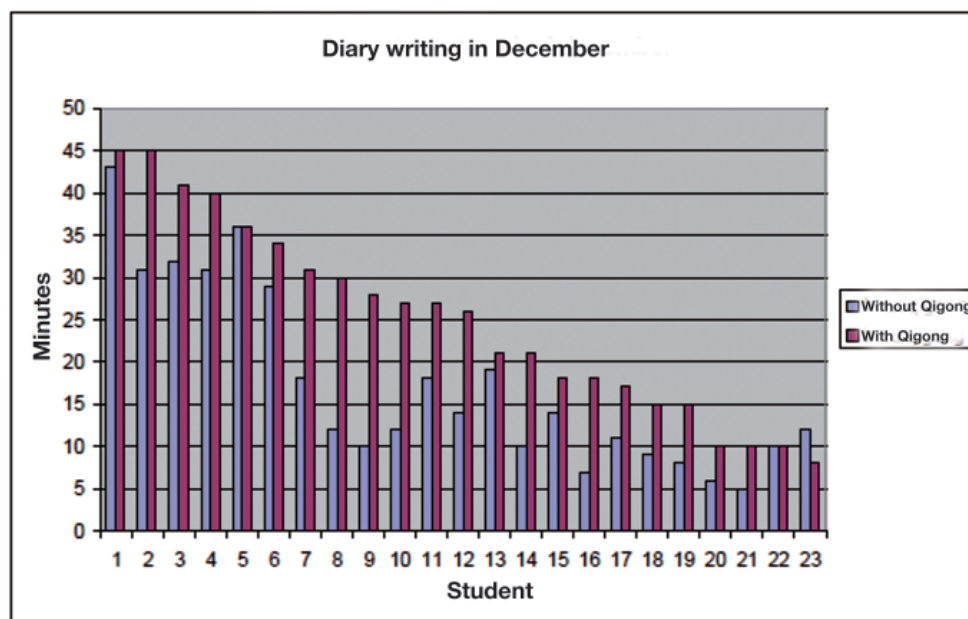


Figure 5. Average number of minutes that each student spent concentrating on writing their diary.

Absenteeism due to illness

Absenteeism in the class was compared with a control class with the same number of pupils. The figures in the table indicate the number of sick days per month for each class.

	September 4 weeks	October 4 weeks	November 4 weeks	December 3 weeks
Qigong Class	36	24	13	10
Control Class	34	28	23	24

Table 12. Absenteeism due to illness

The children from the two classes meet at each school break, they have lunch together, and attend leisure activities together. There are also siblings in each class.

Sleeping habits

Children (23 in total) responded to a survey once a month about their sleeping habits. The numbers in the figure indicate the number of pupils. From examining and discussing the survey with the children, it was concluded that they didn't want to have too many possible answers as they felt such a survey would be "messy". That is why table 14 is not comprehensive. There are no options like "Woke up a few times and had difficulty falling asleep again" or "Woke up many times, but fell asleep directly every time." I believe that the survey nevertheless indicates whether any change has occurred or not.

When you went to bed last night, how fast did you fell asleep?

	September	October	November	December
At once	2	4	7	10
After a little while	8	12	12	10
After a long time	13	7	4	3

Table 13. Sleeping habits

How did you sleep last night?

	September	October	November	December
Slept through the night without waking up.	5	5	8	11
Woke up a few times but fell asleep quickly again.	8	9	12	12
Woke up many times and found it hard to get back to sleep.	10	9	3	0

Table 14. Sleep quality

Did you dream last night?

	September	October	November	December
Cannot remember.	5	6	7	10
Dreamed pleasant dreams.	12	10	12	12
Dreamed scary dreams.	6	7	4	1

Table 15. Dreams

The results show that children have better sleeping habits. Significantly more children are more likely to fall asleep quickly. In December there was no child who woke up many times and found it hard to get back to sleep. Even the amount of scary dreams has fallen.

Children's thoughts about Qigong

In my opinion, it is the children's experiences, reflections, and thoughts about Qigong sessions that are most important. That Qigong is something positive for them is the whole point.

To gain insight into how children perceived and experienced Qigong, another teacher interviewed each child at the end of the study. I chose not to attend these interviews because I did not want to influence children in any way. The interview is part of the action research process, where lessons learned help develop the organisation further.

The following questions were asked in the interview:

1. Do you like to do Qigong?
2. Are there any special Qigong exercises that you really like to do?
3. Are there any special Qigong exercises that you do not like to do?
4. How does it feel when you do Qigong?
5. How do you feel after you've done Qigong?
6. Have you learned something or become better at something because of Qigong?
7. Have you shown some exercises for your parents?
8. Do you want to continue to do Qigong?

All the children were in favour and wanted to continue to practice Qigong. On the other hand, several children have experienced it as being hard work in the beginning when friends disturbed them and they found it hard to relax. In December, the older students preferred to have Qigong for a longer period of time of up to 30 minutes, while the younger children preferred a shorter time.

There were also various wishes in regards to during which part of the day we should have our Qigong sessions. It depended on how the days looked like and how everyone felt.

Most of the younger children preferred the warm-up exercises which included, among other things, dancing. The children in year 2 and 3 tended to choose exercises based on their talent and personality. Some of the exercises involve a small challenge in strength while others challenge concentration. None of the exercises were experienced by the children as being negative.

The children experienced the affirmations at the beginning of the exercises as very positive. An affirmation that was particularly liked by children was: I feel safe and happy. I have friends around me.

Although visualisations were greatly appreciated such as *'I stand on a beach with my feet in the soft, warm sand. The sun is shining on my head. I hear the waves gently break.'*

The children also expressed that they liked to choose their own favourite sites and their own affirmations.

When asked how it feels during and after a Qigong session, the children gave many thought-provoking and vivid descriptions:

"It feels like cotton around me. It's nice and warm."

"It is so quiet in the classroom and I feel happy".

"I am so glad it's bubbling inside me."

"My sad thoughts simply disappear in a cloud."

"I think deeply when we are doing Qigong. I've realised that it's not good to rush things, then you just end up having more to do."

"I feel myself getting softer, both inside and out."

"I really like Qigong because when you've finished Qigong, you feel like new and are a bit more alert."

"I can concentrate better."

"It's fun to do Qigong with the whole class."

"Qigong calms me down."

To the question 'Do you think you learned something or become better at something because of doing Qigong?' the children experienced that they were better at concentrating. It was easier to get along with peers. They felt that they could do more and did not give up on things so soon. Many were proud of their ability to keep their balance. One student expressed that "I find myself in my body." Several mentioned that they could handle more and thought more of themselves. They also thought that they felt more cheerful. It was mostly kids in the years 2 and 3 that reflected and realised the connections between their development and Qigong.

Eight of the 23 students had shown Qigong exercises to their parents.

The interviews gave the same picture as the other results. What amazed and surprised me was the children's ability to analyse and reflect. Most were also able to clothe their thoughts in words, using vivid descriptions.

Summary of results

The initial interviews about stress showed that the children experienced the pressure of time as the most stress-inducing factor. The children even showed through their body language that stress brought unpleasant feelings. The result of the interviews coincides with several of the stressors that Ellneby (1999) and Währborg (2002) cover such as time pressure, stress, adults' stress (parents and teachers) and relationship disruptions.

In the analysis of participant observations at Qigong sessions, three areas emerged: motor skills - self awareness and concentration. In all three areas, major developments occurred during the term.

The children, through Qigong sessions, were given daily training in motor skills, self awareness and concentration, which yielded very good results.

For those children who previously withdrew and kept to themselves, their increase in motor skills and self awareness was a result of far greater magnitude in relation to playing and free time.

The increased self awareness also helped the boys that in the past had a tendency to “happen” to run or bump into others. Earlier, these incidents usually resulted in conflicts.

Observations with fixed parameters show a significant decline in visits to the toilet during lessons and the number of vocal teacher complaints due to high chatter or other disruptive behaviour. The children also showed a significantly improved ability to take instructions and get started with their work on their own. Results indicate that the children’s ability to concentrate has increased. In practice, it turns out, the mood is more calm and pleasant between the children because there are not as many distractions as before. Ellneby (1999) takes up noise as being stress-inducing.

The same trend was seen in relation to concentration and the time study regarding diary writing and the children’s abilities to concentrate on their tasks. The results are based on time studies each week where the children, at one point during the week, wrote in their diary after doing Qigong and on another occasion, had practiced no Qigong. Discrepancy between the two time measurements during the same week rose for every month, from one minute in September to eight minutes in December.

At the individual level, it was a big spread between the differences in time from 18 minutes to 0. It was mostly boys with previous attention difficulties that accounted for the largest time differences, while in girls, who initially had good levels of concentration, little or no effect of the Qigong session could be seen in this context.

Since concentration is an important factor in learning (Kadesjö, 2002), the result is significant.

With the help of a questionnaire (appendix. 3) at the beginning and the end of the study, a good notion of the children’s well-being was achieved. The questionnaire is structured on the basis of the report “Salutogenic environmental therapy in theory and practice” (Cederblad, 1996). The report presents ten factors concerning individuals that act as protection against stress and illness. From these factors, sub-criteria for each factor were designed with the help of the children.

Upon comparing results between September and December, positive trends occur in relation to all factors. The factors that have had the greatest development are self-confidence, creativity and independence.

This is followed by social skills, impulse control & optimism, and confidence about the future.

A slight increase has occurred in the factors of activity & energy, inner control, and interests & hobbies.

The factor that was reflected mostly in daily occurrences was that social skills had strongly increased. This also affected, in one way or another, a number of other factors.

Factors	September	December	Increase
Social skills	60%	85%	25%
Self-confidence	47%	88%	41%
Independence	52%	83%	31%
Creativity	44%	76%	32%
Interests and hobbies	66%	69%	3%
Internal control	62%	72%	10%
Impulse control	30%	55%	25%
Activity and energy	54%	68%	14%
Optimism and confidence	53%	76%	23%

Table 16. The proportion of children as a the percentage who see themselves positively in relation to the various factors

The fact that the children had achieved a better sense of well-being was also proved by headaches and stomach pains having completely disappeared.

Absenteeism due to illness was well below the control class.

Sleeping habits had changed radically.

Many of the behaviours that Ellneby (1999) describes as reflective of a stressed child have reduced or stopped i.e. such as aggression, apathy, restlessness, fatigue, insomnia and continual visits to the toilet.

Final interviews about what the children felt about Qigong showed that the children have appreciated Qigong greatly. They had positive experiences as they related to Qigong i.e. by finding it easier to stay friends with fellow students, having better endurance, and having better balance. The children felt that they thought more of themselves and that they were happier.

The children felt that they had strategies in order to more easily become calm and think beautiful thoughts through affirmations and visualisations.

The results show strong consistency, which enhances reliability. The different data collection methods have been necessary since any partial results may partly be due to factors beyond the study itself yet affect it, i.e. leisure time and situations at home. It is only when all the pieces of the puzzle are in place that the overall picture becomes clear.

Discussion

In the discussion section the study is tied together - issue - method - theory and results.

From the results, interpretations, valuations, and conclusions are made, where some results are highlighted and earmarked for further investigation. As a teacher, the focus of the discussion is about the study's aim to find a way for children to manage and reduce stress, and thereby increase their well-being.

My research questions were:

1. How can the process be described which occurs when children in a primary school class continuously practice Chi Neng Qigong over the course of one term?
2. What happens in the class in relation to students' well-being?
3. I want to explore if one can see changes over time regarding
 - Conflicts with peers
 - Incidences of headaches/stomach pains
 - Students' concentration on a task
 - Absenteeism due to illness
 - Sleeping habits
4. I also want to include the children's views, and am therefore looking for answers to:
 - What are the children's thoughts about stress?
 - What do the children think about practicing Qigong?

Finally an epilogue was developed with, among other things, a proposal for further development and research.

Purpose, methodology

The purpose of the study was to determine whether Chi Neng Qigong can help children to reduce stress and increase their well-being.

It was with some trepidation that I drew up the guidelines for the study. The research area is uncharted and barely explored, and issues have been both broad and open.

I have therefore been fishing with a tightly woven net to see if there are any bearings supporting the effects of Qigong and see where they lead me.

Kvale (1997) argues that the best way to gather conclusions is through a qualitative approach and method, which has also been selected in the present study. Action research's stance has been a great help and given the study a broader framework.

Data collection methods have varied and included both qualitative and quantitative methods which have complemented each other. This triangulation has in my view, strengthened the study's credibility.

Even in the analysis work, triangulation was used because the issue is complex.

Triangulation has been a viable tool in the study, both in data collection and analysis.

With the tightly woven net, there has been a large amount of data to collect, process, and analyse. The great thing about this is that it has provided a nuanced overview of the children's true surroundings. The negative aspect with such a large amount of data is that errors can easily sneak in during the collection and processing phase. This is counteracted by various methods for data collection and variations in the analysis which all ultimately results in a coherent picture.

One difficult question was 'How do I gain a good understanding and picture of the children's well-being?' Cederblad's 10 factors were the basis but they were too abstract concepts for the children to comprehend their

meaning. Firstly, a pilot study was done in which Antonovsky's short version of the KASAM form was used (Antonovsky, 2005. *Health's mystery*, page 247). It turned out that the questions were difficult for children to understand because they required a sense of reflection level that the children were not yet ready for.

After looking at a number of ready-EQ tests for children, I decided to design the questionnaire based on what the kids in the class interpreted from Cederblad's factors.

After reviewing ready-to-use tests and questionnaires, for example Ouve-Birgerstam, 1999, "I think I am" and the scale called Tis (Enjoying school), I found that they did not entirely agree with Cederblad's factors. It was important to me that the proposed questionnaire would really be on the children's level and in terms they could understand. Therefore, I chose to work with the children to develop it. This cooperation gave me valuable information about how children perceive and interpret their surroundings. With the children being involved in shaping the survey, misconceptions were removed and confusion about what it meant was non-existent. To develop the questionnaire with the children took a lot of time but resulted in, in my opinion, a very good outcome.

When carrying out the questionnaire, there were no children who had any questions about its purpose. My hope is that the questionnaire can be useful for even more classes and groups of students.

The entire study was conducted with high participation from children in which they even pointed out that it was important to be honest. This participation has two aspects. Firstly, I think it is an ethical problem related to the analysis where I construct definitions and categories of participants and their actions. Their options may be to accept others' definitions of themselves, and perhaps to an excessive degree, live up to them. By letting the children be involved in trials and the results, this also generated new knowledge and insights for the children. We were in the action research spiral.

The second aspect pertains to reliability. The children were always able to correct and express their interpretations, which increased the study's credibility.

A notion that strikes one is that the development that the results show may be due to children's high participation, through them wanting to be seen and confirmed. My experience from previous projects in which children's participation has been high is that the effect of participation in the beginning of the project decreases as you go. In the present study a measurable development can be seen only after a few months, and with an upward spiral. Even absenteeism and sleep quality are difficult to find any other explanation for than that Qigong exercises influenced these factors in some way.

Filling the role as both a teacher in the class and a researcher has had its rewards and shortcomings.

The benefits are that I am familiar with the environment and the children. Kvale (1997) and Lantz (1993) write that such knowledge of the research subject is a prerequisite for sensitivity to nuances in both the interviews and analysis. Since the children and I know each other well, the interviews were relaxed and it was easy for kids to divulge their thoughts and concerns.

In participant observations where it is a matter of interpreting and reading reactions and behaviours, I had a big advantage through my role as a teacher.

The difficulties were, among other things, balancing how much time I could earmark from the regular curriculum to spend on the collection of data. At the beginning of the term I was careful to limit the time allocated to the study, but as calmness and concentration began to get better in the children, I was more open and took a more relaxed approach to the study. With the increased calmness, the children's learning also became more effective.

In the analysis, I examined interviews, participant observations, and log books, as I have been aware that there runs the risk that I, in a subconscious way, can influenced what I have selected. To obtain an objective assessment, I asked a special educator and a colleague to read through the material collected and analysed.

My view is that the extensive data collection and processing work was needed to gain insight and understanding surrounding the complex processes that are studied. It is the combined result, which shows that there is strong

evidence that Qigong affects the well-being of children in a positive direction, not entirely individual performance, because there are several other factors that also affect that.

In my view, the study is considered to have high credibility through a range of methodological triangulations. It is the integrity of the research process that guarantees the quality.

Result discussion and concluding thoughts

Stress

The interviews (page 36) at the beginning of the school year regarding stress gave the impression that the main cause of the stress that children experienced was lack of time, to not have enough time to get things done. Verbal complaints from teachers about asking a child to hurry up were deemed by children as a negative experience. Even in the questionnaire about well-being one could see those tendencies about not having enough time. In this respect, only 13% of children wanted to have a lot to do in lessons.

The main reason, according Ellneby (1999), that children develop stress is that they feel they are inadequate and not good enough.

It is a common phenomenon in schools that children are not getting the time they need to finish their tasks. They are inundated constantly with new things by ambitious and well-meaning educators who, in turn, go about with a sense of inadequacy. Mounds of started, yet unfinished, work pile up for both children and adults. The feelings of inadequacy and not being good enough settle in easily.

Westlund (1998) mentions the child's quest for "temporal freedom and breathing space" (page 82). This temporal free space would, according to Westlund's (1998) interviews with children entail:

- Forgetting the times and clock
- Playing
- Being small
- Being involved
- Summer vacation
- Being with their parents
- Eating at their own pace
- Thinking
- Peace and quiet
- Taking in new impressions
- Reflecting
- Following their own projects and ideas

The children in this study gave the same signals that they had a need for freedom and breathing space. In one of the interviews a student wished for the following:

"I would like to put all the clocks in a large rocket, and send them up to the moon - here they can stay."

That the children in the study indicated that they felt fine fit well with Westlund's study (1998) demonstrating things that children feel good from doing, i.e. to play with a friend, going on a vacation and sitting down and have peace and quiet from reading a book.

Time is also needed for knowledge to be consolidated and translated into skills. Illeris (2007) emphasises that all learning involves two different processes:

"A process of interaction between the individual and its environment, and an inner mental appropriation and processing procedure by which impulses from interactions are integrated with results from prior learning".

With the above in mind, it becomes obvious that schools should offer children a stress-free environment with room for breathing space.

It is not just about stress and an existing sense of inadequacy. According to Erik Homburger Erikson's theory "The eight ages of man" (Tamm, 2002), school children in the earlier ages (7 -11 years) are in the phase characterised by working methods contra to inferiority.

In order to develop harmoniously, it is important to work through the crisis phase of maturity in a positive way without too many failures.

If we adults in the school environment become more aware of and attentive to children's sensitivity to their shortcomings and what impact it can have, both short and long term, there is much we can do organisationally, pedagogically and in terms of the approaches we take.

The concept of stress must also be defined by what causes it. This is not a factor, yet rather considered as the individual's interpretation, perception and motivation as being critical for the reaction that surfaces. The concept is, as Währborg (2002) writes, an expression of our time filled with individual complex contexts, sentences and meanings.

The approach is consistent with George Kelly's cognitive personality theory (page 26) where he considers that human beings construct their own reality, depending on their individual interpretations and perceptions. Qigong achieves a calm mind, and with positive affirmations and visualisations at one's fingertips, it provides a great opportunity to manage even the most stressful of situations.

Another important role, which was also shown by the interviews, is the adult's emotional state. As adults, we are role models for kids, and how we handle various kinds of stress affects the children. We can have many balls in the air but we can only bring down and manage one ball at a time.

Qigong

Eastern medicine sees the body and soul as a whole. It takes into account the patient's general state of mind and body to find imbalances that caused a condition. In the East, the emphasis is on correcting imbalances before the body is injured, or any diseases or symptoms break out.

It is said that farther back in Chinese history, there was a physician responsible for each village. The physician got paid in some form as long as the villagers were healthy. The eastern approach has become increasingly common, even in the West. Yet in the West, we are still quick to use traditional medicines of various kinds, such as sleeping pills for children, according to the National Swedish Pharmacy's statistics.

In this study, the children had relatively frequent headaches and stomach pains (page 47), yet instead of treating these, we looked at possible causes of the problems and found stress signals. Practicing Qigong probably decreased stress, and thus well-being increased. It had the effect of seeing headache and stomach pain complaints disappearing completely.

Qigong has traditionally been practiced by adults. In my opinion, it is extremely important that Qigong exercises are adapted for children and their developmental level. There must be a lot of playing and that there is no requirement for precision in the movements. Perfectionism is banned in this context. This is to be a positive experience for children. This allows the guidelines to be implemented so that students develop and deepen their ability and desire to move, and are encouraged to express imagination, feelings and a sense of community (Lpo-94).

The Qigong form called Chi Neng Qigong (find your potential) works on three levels: physical, mental, and energetic. On the mental level, tools focusing on movements and positive affirmations and visualisations are used. The children were fascinated by the affirmation and visualisation exercises. It was a new experience to think in images. With the help of visualisations, concentration, the brain and the nervous system were trained, which means that they could increase their ability to concentrate towards achieving their goals. The children were given a tool to think positive things and not get stuck on negative thoughts. A new discovery for me was that children often

think negative thoughts about their own personality and performance. Through affirmations (positive statements), children were provided with a way to reverse this trend. The improved and altered self-perception was noticeable, among other things. As shown by the image with the questionnaire results from September and December, confidence rose by 41%.

George Kelly covers, in his theory on constructive alternativism, a man's ability to imagine reality instead of merely reacting to it. They are free to construct their interpretations of events in their surroundings. The only things that can hinder them are their own structures. By giving positive affirmations to yourself and visualising them, one has the right conditions to perceive life positively - I think it will be like this and it will be. Uvnäs, Moberg (2000) claim to have evidence that mental representations seem to trigger what looks like oxytocin effects.

There are also other methods in the world of education that help children calm down and increase their well-being, such as relaxation techniques and massage buddies. An interesting question is whether Qigong adds something more to these other relaxation techniques or not. I have, for a number of years, practiced both relaxation techniques and having massage buddies in my classes and feel I have, after 35 years of teaching, the experience and knowledge to be able to make this comparison.

Table 17 is an estimation I made regarding the effects that the different methods provide.

	Qigong	Relaxation	Massage Buddy
Peace and quiet	* * *	* *	* *
Relaxation	*	* * *	* *
Calming down	* * *	*	*
Concentration	* * *	* *	* *
Positive thoughts	* * *	* *	*
Visualisation Ability	* * *	* *	*
Motor skills	* * *		
Self awareness	* * *	* *	* * *

Table 17. Own estimation regarding the effects of practicing qigong, relaxation techniques, and having massage buddies

Peace and quiet

My experience is that children find it easier to relax using Qigong than with the other methods. It concerns mainly the children with concentration problems. In Qigong exercises one needs not be quiet, yet there is a constant, slow, and fluid motion that makes it easier for these children to relax. Group dynamics become even stronger in Qigong and if a child gets lost with the movements, they can easily get back on track by looking at peers.

Relaxation – Calming down

In terms of relaxation in the school, one tries to free themselves from physical or psychological stress by sleeping or sitting. It is on the mental plane where one is active while the body is relaxed and calm.

In Qigong, relaxation is used, which means that concentration using only the muscles and muscle strength is absolutely necessary to perform a movement. By providing children with knowledge on how to achieve a relaxed state, it becomes a tool that they can use in everyday life, even in stressful situations.

Concentration

Even with concentration, I believe that Qigong has advantages over relaxation techniques and massage buddies. With Qigong, it involves movement, and children with attention difficulties find it easier to be focused. For relaxation, usually hyper children have difficulty with concentration. Even with massage buddies, it involves working in pairs which makes it easy for distractions to arise that in turn affect concentration.

Positive thoughts - visualisation

The essence of Chi Neng Qigong is to combine motion, affirmation (the formulation of the idea of what you want to achieve with training) and visualisation (creating a mental picture of what you want to achieve) (Patricia van Walstijn, 2006).

Even in relaxation exercises, positive thinking and visualisation are used, yet here they are often led by someone who is in charge of the relaxation session. In qigong, the children themselves control their affirmations and visualisations after they have learned the technique.

Motor skills - self awareness

In regards to motor skills training, qigong has a unique position compared with the other methods. The extremely positive effect of motor skills training has previously been covered.

Self awareness is trained in all three methods, yet here I believe that qigong has an advantage because movements are also involved.

In my work with this study, I have noticed that other research on Qigong is of varied quality. In the literature review (page 18), I have tried to highlight research that is relevant to this study. My view is that interest in qigong is on the upswing, and several interesting research projects are currently underway, i.e. at Örebro University in Sweden. Although there is not a great amount of research done on qigong, there is a plethora of personal stories that have been documented, which are of great value.

Motor skills and self awareness

Today's society has radically changed the way we live. Natural opportunities to gain the physical and motor training our bodies need have been replaced by more sedentary work that has implications for our health and well-being. Children have a natural need to move about, yet also, the amount of time that children sit still has also increased (Raustorp, 2004). It can result in weight increases and worsen motor skills (Larsson and Meckbach, 2007). Motor skills' importance for a child's physical, emotional, social, and cognitive development is highlighted in recent research in this area (Hammar and Johansson, 2008, et al.) The importance of physical activity is covered more and more (Larsson and Meckbach, 2007).

Since we practiced Qigong every day, the children received regular motor skills training, which gave very good results (pages 40,41). Even the children's self awareness went through a major development during the study. Research in the field (pages 12, 13, 14), shows that daily movement has a positive effect on cognitive thinking, the ability to concentrate, school work, and not the least, self-esteem. Movement and exercise is also something that activates the body's 'peace and quiet' system which thus reduces stress hormones (Uvnäs, Moberg, 2000).

Studies show that the motor skills affect the social status and acceptance that a child may experience amongst a group of peers (Larsson and Meckbach, 2007). A social group's way of perceiving an individual is determined by how members of the group perceive themselves (Smith, 1992). Raustorp (2004) observes that social relations are important for human growth, development and health, and are a factor that can affect an individual's health in a powerful and immediate way.

I see a clear connection between increasing children's motor skills and self awareness, and better social interaction. It was shown especially clearly in the children who had strong difficulties with motor skills, self awareness and spatial awareness. At the beginning of the study, many conflicts arose in the school corridors and queues, for example, during lunchtime. The origins of these conflicts were mostly children running into each other because they had difficulties in judging distances because motor skills were deficient. Peers would see these collisions as deliberate and a conflict would arise. As motor skills developed, these incidents were reduced, and by December, were completely gone.

Motor skills are also part of a child's development of their personality. Motor, physical, cognitive and social aspects all develop a child (Hammar and Johansson, 2008).

The daily motor skills training revealed that the cautious and anxious children had greater confidence in their motor skills and showed a greater desire to participate in games and other activities.

In the current group of children, some were those who were reluctant to go out at breaks. If they went out, they spent most of the break standing and watching their friends as they jumped rope, threw balls around, or played games. If friends asked them if they wanted to join in, they refused and became reclusive. In November, there were no trends of this kind anymore and the children enthusiastically took part in break activities.

Ericsson (2003) has, in his thesis "motor skills, concentration and school performance", concluded that children with motor skills deficiencies that received motor skills training every day performed better on national tests in both Swedish and mathematics than children with similar motor skills deficiencies that only had regular physical education.

In my opinion, similar trends could be deduced regarding the current child group.

In the group of students that showed signs of having motor skills difficulties, there were students at the start of the school year who, amongst the year 1 class students, only knew 1-4 letters of the alphabet and could not rhyme or comprehend sound patterns.

For these children, progress was not that great until November, yet when calm had spread amongst the children, development came quickly. By the Christmas break, all of these children were at the latest reading level. My experience is that, based on the level of reading skills that the children exhibited at the beginning of the term, it could be expected that proper reading would develop much later than was the case.

Of course, motor skills and self awareness can be developed through other forms of motion than Qigong. Yet I have, during my 35 years as a teacher, never seen such a large development in the motor skills of children over such a short period of time. I consider it paramount in today's schools to have a wide range of activities that focus on movement where Qigong can be an element.

Lpo-94 provides the following directives in this matter:

A school, in its teachings of physical education and health, should aim to ensure that students:

- develop their physical, mental and social abilities, as well as develop a positive sense of self awareness.
- develop their knowledge of what promotes health.
- develop a good level of self awareness and gain knowledge which makes it possible to see, choose, and evaluate different forms of motion from a health perspective.
- are stimulated to maintain and continue interest in regular physical activity and take responsibility for their health (Lpo-94 syllabuses and grading criteria, p.22).

Concentration

The study shows that Qigong has positive effects on children's abilities to concentrate. Diary writing (page 49) is, in my opinion, the most significant measure of the study that highlights the relationship between Qigong and concentration. Since the time studies were carried out during the same week, with and without qigong, a number of other factors were negated that otherwise could have influenced the outcome.

Kadesjö means that to concentrate means that you must open up and let in your surrounding world enter through your senses. An ability to concentrate requires that we evaluate and sort out various impressions and, based on them, decide what should be included or not. This sorting work is facilitated considerably if the mind is calm and harmonious.

Through Qigong exercises, the children were able to draw their attention, perceptions, feelings and thoughts towards a particular task. The children's ability to get started, stick to, and finish a task thus increased. This skill

is, according to Kadesjö (2002), a prerequisite for being able to concentrate. Kadesjö (2002) also discusses how important self-reliance is for the ability to concentrate.

Children not only experienced an increased ability to be able to concentrate on diary writing, yet schoolwork in general, which resulted in good results in, among other subjects, reading and mathematics.

To be concentrated means, according to Ingvar Lundberg - professor of special education, to keep one's attention on a specific piece of information or particular task and to keep out irrelevant sounds, and thus be able to focus one's thoughts (NE). Through Qigong exercises, children focus attention on movements and focus their thoughts. They are provided with concentration exercises and tools to develop their general skills. They can then use these skills with their schoolwork.

It is not an unusual situation in schools that tasks are placed on students without students yet having had the chance to train to gain the skills necessary to carry out those tasks.

Interestingly enough was that the boys' concentration levels increased more than the girls' when we were doing Qigong before diary writing. The Swedish School Board concludes that differences between boys and girls is increasing, that boys are falling back more and more compared to girls. My thoughts are that Qigong can help to give boys a better foundation to handle schoolwork.

In September, 56% of the students said that they can easily come up with ideas and solutions for different things. The corresponding figure for December was 74%. As stress levels drop, thinking changes and we gain better access to internal resources and creativity. There arises a sense that one's abilities are sufficient enough to meet the challenges one faces. Concentration intensifies, increasing awareness and satisfaction one feels inside. In other words, a state of "flow" is achieved.

Self-confidence and social skills

Children's self-confidence and their social skills increased dramatically during the term. Good relations with peers likely stimulates the 'peace and quiet' system, not only through physical contact, yet also through feelings of support, warmth and love (Uvnäs, Moberg, 2000).

It is scientifically proven that Qigong reduces production of the stress hormone cortisol (Jones BM. Altern, Med 2000; 1:8). The main suppressor of cortisol production is the hormone and neurotransmitter oxytocin (Uvnäs, Moberg, 2000).

Surges in oxytocin levels are linked to greater peace and greater interaction between individuals. Impressions and feelings can be processed in this state, which is also characterised by openness and curiosity, especially when interacting with other individuals. Interestingly, these changes are not only instantaneous, yet persist even after some period of time. Good relationships are likely to stimulate the 'peace and quiet' system, not only through physical contact, yet also through feelings of support, warmth and love.

Uvnäs and Moberg's description of the effect of increased oxytocin levels (page 11) is entirely consistent with the perceived and documented changes in the class.

Children's sleep gradually improved during the term. Improved sleeping habits in turn make it possible to better cope with the school environment, learning, and social interaction. Surroundings having become calmer contributed to positive developments in several areas. It became a positive cycle which greatly affected self-confidence.

For children aged 7-10 years, friends gradually become increasingly important. At the same time, fragile self-confidence and feelings of inferiority are not unusual, according to Homburger Erikson. It is crucial for children's personal and social identity development to have good relationships with peers. It is not only amongst individuals that interactions should function, yet also for the group as a whole. Through a well-functioning group, children find their identity, develop self-confidence, and feel secure in a tolerant and accepting environment.

The children said in interviews that they liked it when the whole class practiced Qigong. They experienced a togetherness and sense of community. Uvnäs - Moberg take up, in their book, 'Calmness and touch', how oxytocin is released from touching and that spiritual contact is also a form of touch.

In his theories, Maslow ties being accepted to the need for love and a sense of belonging to a community. This need must be filled in order for an individual to further develop.

In his theories, Antonovsky (2005) takes up the concept of strong KASAM and rigid KASAM (sense of coherence). My empirical conclusion is that it is possible, within a relatively short period of time, to develop one's KASAM from being rigid to being strong. With the kids handling stressful situations with greater calm and confidence, they could see strategies and solutions to various problems. Where they previously experienced chaos, they could now make situations both understandable and manageable. It related not only to relationships with peers, yet also time pressures and in making choices.

The interviews revealed that many children felt very positive that the exercises were completely new for everybody. The benchmarks that children typically judge their peers' performances on didn't exist. Everything was new to everyone and everyone had the opportunity to experience "I can".

When we succeed with something, we grow. It is especially important in the 9th year class when children find themselves coping with a dual role. While the ability to recognise differences develops as well as the ability to recognise the consequences of these differences, identity development takes place by stemming from a search of similarities. Who am I? Well, someone capable of the same things that others can do or having the same things that others have.

There are many factors that come into play, but for me, there is no doubt that Qigong sessions are a contributing factor to children's increased levels of self-confidence and social skills.

Elkind (1981) refers to the social character as a major protective factor against stress.

Concluding words

My purpose of this study was to find a way for children to manage and reduce stress and thereby increase their well-being, and I wanted to see if Chi Neng Qigong is an effective method in this context.

Through an action research approach, and with varying data collection methods, the process has been described that occurs when the children in the study continuously practiced Qigong over the course of one term.

I have sought answers as to whether changes have taken place in regards to conflicts, headaches and stomach pains, concentration, absenteeism and sleeping habits.

In the study, children have had a major involvement on several levels, which enhances credibility.

The overall results show that children in the study have undergone significant positive changes in all areas that the study covered.

Due to cortisol levels decreasing with Qigong, and the "calm and quiet system" being activated (Jouper, 2000), it is not surprising that Qigong affects various functions such as concentration, emotional control, social context, spatial orientation, etc. Motor skills and self awareness have developed through motor skills training which positively affects physical, emotional, social, and cognitive development. If one feels secure in one's self awareness, a surplus of energy is left over that can be used for learning.

In addition, the psychological needs of community and warmth further enhance children's well-being and quality of life.

Elkind (1981) points out some properties that protect against stress factors, such as social skills, confidence and independence. These are areas in which the children in the study have made very good progress and hopefully make the children more equipped to cope with stressful situations and environments.

It is important to be aware that both the ‘fight and flight’ reactions and their opposites, the state of peace and quiet, are vital. Just as we need the ability to mobilise force, we need the opposite. In states of calm and rest, the body reloads, fills depots, and heals. Peace and quiet is an important component of leading a good life - for men, women and children.

Since Qigong is associated with nature, the lotus flower can summarise the study.

With peace and quiet, community, social skills, concentration, confidence, self-confidence, motor skills and confidence in the power of thought, man is equipped to seeing existence as being meaningful, comprehensible and manageable, and thus can gain a sense of community (KASAM).

Together with other research in the field, the study shows that Qigong in schools has its rightful place as a tool for promoting children’s well-being. Health improvement measures go hand in hand with good quality and performance at school. School teaches individuals and prepares them for adult life, and in hindsight to the times we live in, it’s paramount to spread knowledge about this anti-stress tool.

It is desirable if further research is carried out in the field of children and Qigong. This study is based on an empirical foundation that shows that children are affected positively in several respects by practicing Qigong.

Further research is needed on a larger scale and with control groups. Another very interesting field to explore further is what physiological effects occur from practicing Qigong.

Epilogue

At the start of the academic year 2009/2010, the school starts a project where Qigong is woven into the Outdoor Adventure & Education Pedagogical Programme. The project aims to broaden the spectrum of different teaching methods and learning styles by using the Adventure & Outdoor Education Pedagogical Programme and Qigong. We therefore want to gather those students who have difficulty finding good work flows and motivation for school work by linking together their interests and different learning styles and provide a tool for them to be able to more easily calm down.

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Appendices

Appendix 1 Form to parents

Appendix 2 Interview questions on stress

Appendix 3 Survey based on Cederblad's factors

Appendix 4 Children's records of conflicts, stomach pains and headaches

Appendix 5 Questionnaire survey about sleeping habits

Appendix 6 Interview questions at the study's conclusion

Missive to parents Appendix 1

I have had the opportunity, through the University of Gothenburg's master's program in pedagogy, to carry out a study in the school surrounding the relaxation and concentration technique called Qigong. The project is approved by our president Inger Sandgren.

Previous research about Qigong in schools shows that Qigong counteracts restlessness and stress, and stimulates the imagination and the ability to concentrate. (Monica Sörberg)

Together with the children in the class, we will practice relaxation exercises based on Qigong. During the school year I will be focusing on concentration and conflict situations to see what happens.

The results will be reported on a consolidated basis and the children will remain anonymous as individuals. Photo documentation will occur, but never connected with names.

In order to start the project, I need help from you with a signature to grant that you accept that your child participates. If you have any questions please don't hesitate to call.

Your reply is needed by the end of the first week of September

Best Regards, Gerd Brolin

Name _____ can participate in the project "Qigong in school."

Parent's signature _____

Interview questions regarding stress Appendix 2

INTERVIEW QUESTIONS - STRESS

1. What does it mean when you feel stressed?
2. Have you felt stressed? Tell me (how often, situations, environments)
3. How do you feel when you are stressed?
4. How do you become calm?
5. What do you get excited about?
6. How do you rest and relax?
7. What makes you happy and cheerful?

Questionnaire to students based on Cederblad's definition of well-being - Appendix 3

	not at all	partly agree	agree	partly don't agree	don't agree
A					
1. I stick with my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I work with my friends during lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I listen to others about what they have to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Others listen to me when I have something to say.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I have friends to play with during the breaks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I feel calm and secure during the breaks at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I feel calm and secure during the lessons.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B					
8. I think I can handle things well that I do in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. If something is difficult or inconvenient I believe it can be solved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I take responsibility for my homework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I take responsibility for my schoolwork.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I help out at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Others see what I'm good at.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I can say what I think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I like to show off in front of my friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I like to play in theater class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I like to try to do new things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C					
18. I can handle many things at school on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I can handle many things at home on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I can handle many things during my free time on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D					
21. I easily think of ideas and solutions for different things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Others tell me what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E					
23. I'm interested in and take part in some kind of sport or hobby in my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F					
24. I get to influence decisions at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I get to influence decisions at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I get to influence what I do in my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G					
27. I don't get along with my friends easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I get really angry easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I get really sad easily.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	not at all	partly agree	agree	partly don't agree	don't agree
H					
30. I like to have a lot to do at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I like to have a lot to do at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I like to have a lot to do in my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I often feel stressed during lessons at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I often feel stressed during breaks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I often feel stressed at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I often feel stressed in my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I often get a headache at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I often get a headache during my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I often get a headache at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I often get a stomach ache at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. I often get a stomach ache during my free time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. I often get a stomach ache at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I					
43. I feel sure of myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. It's fun to be me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. I think I can be what I want to be when I grow up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. I often feel happy and cheerful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Children's protocol - Appendix 4

	Conflict	Stomach pain	Headache
Karl			
Olivia			
Vilhelm			
Ellen			
Emma			
Andreas			
Charlotta			
Albin			
Jesper			
Izaak			
Maria			
Patrik			
Simon			
Daniel			
Tanya			
Amanda L			
Amanda R			
Maja			
Alma			
Clara			
Stephanie			
Alexander			
Gabriella			

Questionnaire about sleeping habits - Appendix 5

HOW DO YOU SLEEP?

Name _____ Date _____

1. When you went to bed last night, how quickly did you fall asleep?

Right away	<input type="radio"/>
After a little while	<input type="radio"/>
It took a long time	<input type="radio"/>

2. How did you sleep last night?

Woke up many times during the night and found it hard to get back to sleep.	<input type="radio"/>
Woke up a few times but fell asleep right away.	<input type="radio"/>
Slept through the night without waking up.	<input type="radio"/>

3. Did you dream last night?

Scary dreams	<input type="radio"/>
Dreamed pleasant dreams	<input type="radio"/>
Cannot remember what I dreamed	<input type="radio"/>

Interview questions at conclusion of study - Appendix 6

INTERVIEW QUESTIONS ABOUT QIGONG

1. Do you like doing Qigong?
2. Are there any specific Qigong exercises you enjoy doing?
3. Are there any specific Qigong exercises you don't enjoy doing?
4. How does it feel when we do Qigong?
5. How do you feel after you've done Qigong?
6. Have you learned something or become better at something because of doing Qigong?
7. Have you shown any of the exercises for your parents?
8. Do you want to continue to do Qigong?