



LAUREA
UNIVERSITY OF APPLIED SCIENCES
Together we are stronger

Alternative approaches in teaching first-aid skills for adolescents

Apajalahti, Mia
Gachari, Nyambura
Ojaranta, Mira

2015 Otaniemi

Laurea University of Applied Sciences
Otaniemi



Alternative approaches in teaching first-aid skills for adolescents

Apajalahti, Mia
Gachari, Nyambura
Ojaranta, Mira
Degree Programme in Nursing
Bachelor's Thesis
April, 2015

Laurea University of Applied Sciences
 Otaniemi
 Nursing Degree Programme

Abstract

Apajalahti, Mia; Gachari, Nyambura; Ojaranta, Mira

Alternative approaches in teaching first-aid skills for adolescents

Year	2015	Pages	46
------	------	-------	----

The purpose of this thesis was to teach eighth graders useful first aid skills and to make them interested in learning new techniques in the future. It was also important to point out the significance of beginning to teach such skills to this age group. The goal was to study different first-aid teaching methods and implement one planned method at the end of the thesis.

The theoretical framework for the thesis consists of various incidents and diseases with a high probability of being a first aid case this age group might come across. The theoretical part includes information about the developmental stage of eighth graders in Finland and first aid teaching during basic education in Finland, information on actions needed to be taken during the first aid events, teaching methods and the role of nurses in health promotion.

A method of action-based research was applied in this thesis. The first aid lessons were planned in advance and evaluated afterwards. The evaluation was planned to be done with the help of a questionnaire, the questions were also carefully planned in advance to answer questions about the teaching method, the pupils level on first aid knowledge and to find out the usefulness of our thesis subject. A data analysis on the questionnaire answers was performed.

Findings of the thesis include the level of first aid skills among thirteen to fourteen year old adolescents and how much just one first aid lesson improves knowledge and skills. The thesis reveals, which of the presented first aid events our known to this age group and, which are not and what they themselves consider beneficial to know.

In the discussion part results and findings of the questionnaires and areas of the teaching, that would require improvement, are pondered on. The importance of first aid teaching and the state of first aid teaching among the Finnish school system is discussed. An improved knowledge on first aid may reduce deaths and hospital stays.

Keywords: First-aid, teaching, adolescents

Laurea-ammattikorkeakoulu
Otaniemi
Nursing Degree Programme

Tiivistelmä

Apajalahti, Mia; Gachari, Nyambura; Ojaranta, Mira

Eri menetelmiä opettaa ensi-apua nuorisolle

Vuosi 2015 Sivumäärä 46

Tämän opinnäytetyön tarkoituksena oli opettaa kahdeksaluokkalaisille hyödyllisiä ensiaputaitoja ja saada nuoret kiinnostumaan ensi-aputaidoista, jotta he jatkaisivat näiden taitojen hiomista myös tulevaisuudessa. Tarkoituksena oli myös osoittaa näiden taitojen opettamisen tärkeys kyseiselle ikäryhmälle. Tavoitteenamme tälle oppimiselle oli tutkia erilaisia opetusmenetelmiä.

Teoreettinen pohja koostuu eri onnettomuuksista ja sairauksista, jotka suurella todennäköisyydellä voisivat olla aiheita ensiavulle tälle ikäryhmälle. Teoreettinen osuus sisältää tietoa kahdeksaluokkalaisten kehitysvaiheesta, ensiavun opetuksesta Suomen perusopetuksessa, tietoa mitä toimenpiteitä tulee tehdä kyseisissä ensiaputilanteissa, opetusmenetelmiä ja sairaanhoitajan roolista terveyden edistämisessä.

Tämä opinnäytetyö toteutettiin toiminnallisena opinnäytetyönä. Ensiaputunti suunniteltiin etukäteen ja arvioitiin jälkikäteen. Arviointi suunniteltiin tapahtuvan kyselylomakkeen avulla. Lomake suunniteltiin etukäteen vastaamaan kysymyksiä koskien opetusmenetelmää, oppilaiden ensiaputaitojen tasoa ja opinnäytetyön aiheen hyödyllisyyttä. Kyselylomakkeen vastaukset analysoitiin.

Kolmetoista- ja neljätoistavuotiaiden nuorten ensiaputaso sekä yhden ensiaputunnin merkitys kyseisen tietotaidon kohentamiseksi lukeutuvat tämän opinnäytetyön löydöksiin. Opinnäytetyön myötä selviää mitkä ensiaputilanteet ovat tuttuja, ja vastaavasti mitkä tilanteet eivät ole, kyseiselle ikäryhmälle. Lisäksi selviää mitä taitoja nuoret itse pitävät hyödyllisinä.

Avainsanat: Ensi-apu, opettaminen, nuoriso

Table of contents

1	Introduction	7
2	Erik H. Erikson & psychosocial development	8
	2.1 Adolescents.....	8
	2.2 Accident proneness of adolescents	9
	2.3 Preventing accidents among children and youth	10
3	Health promotion of adolescents	10
	3.1 Nurse's role in health promotion.....	10
	3.2 The need for appropriate evidence in health promotion	11
	3.3 Health promotion in Finland	12
4	Theory: First aid situations.....	13
	4.1 Making the emergency call	13
	4.2 Sprains & strains.....	14
	4.3 Wounds & cuts	14
	4.4 Fainting/syncope	15
	4.5 Diabetes mellitus.....	16
	4.5.1 Hyperglycaemia.....	16
	4.5.2 Hypoglycaemia.....	17
	4.5.3 Insulin shock.....	18
	4.6 Choking.....	18
	4.6.1 First aid for a conscious patient choking.....	18
	4.6.2 First aid for an unconscious patient choking	18
	4.7 Drowning.....	19
	4.7.1 Drowning patient in open waters.....	19
	4.7.2 Drowning patient in ice	19
	4.7.3 The CPR	20
	4.8 Allergies.....	21
5	The purpose and the goal of the thesis	21
6	Learning and teaching.....	22
7	The teaching methods.....	23
8	The implementation plan of the teaching methods	24
9	The implementation plan of the lesson.....	24
10	The lesson plan grid	26
11	Implementation of the class	28
12	Evaluation	29
	12.1 Evaluation of the lesson.....	29
	12.2 Evaluation of the implemented teaching methods.....	30
	12.3 Analysing the answers and results	30

12.4	Self- and group evaluation	32
12.4.1	Mia Apajalahti; Self-evaluation	33
12.4.2	Nyambura Gachari; Self-evaluation	33
12.4.3	Mira Ojaranta; Self-evaluation	34
12.4.4	Group evaluation	34
13	Discussion.....	35
	References	38
	Figures: Average values of the questionnaire results	43
	Appendixes: The questionnaire.....	44
	The lesson plan grid, with explanations	46

1 Introduction

First aid is one of the most important skills that people should be aware of due to the fact that they will need it at some point in their life. The assumption of most authorities is that citizens are capable of weighing the situation and calling for help. For those, with the first aid knowledge, they are expected to apply their knowledge which includes recovery position, resuscitation, stopping excessive bleeding and for suffocating patients. The Finnish legislation requires that other people in the surrounding area of the accident should help in case of an emergency. There is lack of standard training in first aid therefore it should be included in basic education. (Syrjä, T., 2014)

The main idea of this thesis is to promote first aid knowledge in adolescents aged 13-14. It contains research of common injuries and health issues that occur to this age group. Knowledge in first aid, especially to this age group, is of great importance as studies have shown that the leading causes of injuries are sports injuries. This thesis will go through some examples and a method that we used in teaching first aid for adolescents. Training was organised for students in an International School in Espoo. It took place on 15.01.2015 and consisted of theoretical and practical sessions. This included first aid for sprains and strains, wounds and cuts, fainting, diabetes mellitus, choking, drowning and allergies. The necessary equipments required for the topics chosen were provided by Laurea University of Applied Sciences, Otaniemi. There were 19 students who participated, the practical use of the equipment gave the students substantial knowledge and skill. After the training was over they answered an open-ended questionnaire which provides evidence to back-up the objectives of the thesis.

The aim of the training session was to ensure that they acquire skills and knowledge in first aid. The interest of the students must be raised in order to reach our goal in making them continue their first aid learning by themselves. The session was planned in such a way, that there would be active involvement of the students during the training in order to get their full attention, and so that in future they would be in a position to be able to be the first responders in case of an emergency that requires the acquired skills. The important information necessary to be given, when making an emergency call, was also emphasised on the training, and the need to stay calm when in this situation.

The results collected from the questionnaire indicated an average initial knowledge of first aid skills and a 90% gain after the training. This confirms the need of implementation of a first aid course as part of the curriculum. A child accident prevention strategy is more likely to be successful if it is undertaken as a healthy alliance between a number of individuals and organisations (Tower et al., 1993)

2 Erik H. Erikson & Psychosocial Development

Erik H. Erikson was a well-known psychoanalyst, born in 1902 in Germany. Erikson came up with eight different developmental stages; Erikson states that humans have certain needs during each of the stages. For the outcome of the stage to be positive, the needs have to be met. If the needs are not met in a proper or a suitable way, the outcome of the stage in question will be negative. Humans go through a crisis between each of the stages, moving from one stage to another one. (Bunkholdt, 2004)

2.1 Adolescents

The psychosocial developmental stage for humans between 13 and 14 year old is the puberty. The need of this stage, according to Erikson, is to build up an identity. A negative outcome would be a confusion of the role of self and one's own identity. Parts of the self-esteem are brought together as the becoming identity, a vision forms of who one is and wishes to be. The environment and immediate surrounding plays a significant role. The teenagers are trying to have their identity confirmed by the environment, and to get reactions from others as a signal to confirm their own thoughts of themselves. A similarity to others gives a sense of belonging and identity, a deviation from others functions as a threat to building up the identity. A circle of friends, school and hobbies function as other sources for building up the identity. An unclear understanding of oneself and one's identity may lead to problems in the future when building up the identity. (Bunkholdt, 2004)

During the early adolescence the thinking develops enormously, it becomes more abstract, on a general level and directed towards the future; the adolescent's self-image, worldview and morale changes. As the thinking develops the adolescents begin to better understand the concept of other people having a different view than oneself, they begin to understand the other person's point of view. It is thought that this newly developed ability has an effect on the adolescent's development of the morale, which in turn has an effect on the actions made, for example helping others and taking other into notice and action in a conflict. The change in the thinking has a lot to do with the development of the brain. (Nurmi et al., 2014, pgs. 146 - 147)

According to Robert Havighurst the developmental mission of the early adolescence are adopting one's sexual identity, creating relations with the opposite gender, getting an education and preparing both for work and family life, and absorbing the ideology. Havighurst's ideology is based on that the challenges and demands placed on each individual change with age, and each successful development creates a solid ground for wellbeing and later development. (Nurmi et. al, 2014, pg. 149)

During the adolescence, at the same time as there are many physiological and hormonal changes in the body of the adolescent, problem behaviour increases. Research among this field has been made. It has been noticed that the estrogen hormone level amongst adolescent girls is in relation to their aggressiveness adrenal androgens on the other hand have an effect on the girls' problem behaviour and their negative feelings. Amongst adolescent boys the testosterone levels play a part in their aggressiveness and influences their acting as the dominant part in a group of friends. The same hormones as just mentioned also have positive effects.

Because physiological effects may have also have to do with sociological effects it is not possible to make straight up conclusions. Adolescents that develop earlier than their fellow age group are prone to start smoking and using alcohol earlier than adolescents that develop later. This appears to be true especially amongst girls who have had problematic behaviour earlier on. Changes in the puberty affect the adolescent's social life, which in turn has an effect on the future development of the adolescent. The development of the adolescent is also affected by physiological, psychological and social factors. (Nurmi et al, 2014, pgs. 145 - 146)

2.2 Accident proneness of Adolescents

Adolescents face accidents in traffic and during spare time more so than at home. It is typical adolescents to try new things and take conscious risks. Most significant accident-relating factors are age, developmental stage, gender, physical and mental wellbeing, possible substance abuse and risky behavior as well as health habits.

Finland's National Institute for Health and Welfare states, that even though accidents leading to death are decreasing amongst adolescents and young adults, accidents are still the biggest single reason causing death among people under the age of 25. Accidents also cause loss of health. One way to successfully prevent accidents among children and adolescents involve investing and improving the skills of preventing accidents and managing life. Successful prevention requires the information about prevention to be based on researched information and models that have been established to be good. Successful prevention also requires recognizing risks of accidents and improving professionals' knowhow, working together and seeing to that everybody carries their responsibility. (The National Institute for Health and Welfare, 2015b)

There is no precise information available about accidents that have happened on the way to school or on the way home from school. A questionnaire, regarding health in schools (KELA, 2013), done in 2013 reveals that every fourth 8th and 9th grader has faced an accident at school or during the school trip that demanded care from the school's public health nurse or a visit to the doctor's reception. 18% of the accidents among the 8th and 9th graders happened

during the gymnastics class at school, 7% during the school trip and 6% during recess. (National Institute for Health and Welfare, 2015a)

Drowning is the third most common cause of death among accident-related deaths for people under the age of 25, additionally water-related accidents cause many hospital stays each year. (National Institute for Health and Welfare, 2014a) Falling and tripping-related accidents rarely lead to death, between years 2010-2012 on average three falling or tripping accidents lead to death, but during year 2012 they caused 6800 hospital stays for 6000 patients. (National Institute for Health and Welfare, 2014b)

2 242 adolescents between the ages of 10 - 14 were diagnosed with diabetes type I in year 2013, the amount had decreased just a bit since year 2012 when it was 2 251. The amount has steadily been rising since 1986 when 1 107 adolescents of this age group were diagnosed and treated for diabetes type I. All in all year 2013 people diagnosed and treated for either diabetes type I or type 2 286 136. (Diabetesliitto, 2015a)

2.3 Preventing accidents among children and youth

The Finnish action plan for injury prevention among children and youth was released fall 2009 and put into implementation a year later in 2010. The plan is designed to give long-term directions for work that prevents accidents. (National Institute for Health and Welfare, 2014c) Childrens' and adolescents' health and safety can be promoted by interfering with the factors that cause the losses of health. (National Institute for Health and Welfare, 2014d)

3 Health Promotion of Adolescents

The main focus on adolescent's health is that this is a time that new health behaviors are ventured on. These behaviors could be a footpath into adulthood which influences morbidity and have an effect on the adolescence long term health. (Viner & Macfarlane, 2005)

Health education for 7th to 9th graders is a part of the national curriculum of basic education in Finland. As a part of the central contents in the goals of health education are first aid skills, self-care, seeking help and support and the prevention of public health illnesses and accidents. The teaching entities ought to be age related, taking into account the adolescents age, development and developmental stage. (Opetushallitus, 2014, pgs. 461 -462)

During the basic education adolescents should gain knowledge and learn skills, according to their age and developmental stage, with which they can promote the safety of others as well as their own. Using the skills and knowledge gained they can act to prevent accidents and injuries. An invigorating and involving method of teaching as well as the significance of the teaching supports the learning. 7th to 9th graders should be taught during health education.

3.2 Nurse's role in health promotion

Nurses seldom work in isolation they work collaboratively with other nurses, physicians, social workers, nutritionists, psychologists, therapists, individuals and community groups. In this collaborative capacity nurses play a variety of roles in health promotion. (Edelman, C. & Mandle, C. 2010)

Nurses are advocates who help individuals obtain what they are entitled to receive from health care system, try to make the system more responsive to individual and community needs and help people develop the skills to advocate for themselves. In the role of advocacy, they strive to ensure that all people receive high quality, appropriate and cost-effective care.

They are also care managers who help individuals avoid care that is unproven, ineffective or unsafe. In order for this to succeed, there has to be a collaborative relationship between the multi-professional teams, the individual and his or her family. Nurses are also consultants who provide knowledge about health promotion and disease prevention to individuals and groups. According to ANA Code of Ethics, some nurses have specialized areas of expertise and are equipped to provide information as consultants in these areas of specialization (ANA, 2004).

There is need for all nurses to develop consultation skills that can be integrated into practice and allow the individual nurse to take advantage of opportunities to provide support on an individual level or for future development at the organisational level. (Norwood, 2003)

Nurses are also considered service deliverers. According to Nursing's Social Policy Statement (ANA, 2003) and ANA Code of Ethics (ANA, 2008) the public demands that nurses should be knowledgeable and competent in their delivery of service. They are also considered educators and healers in health promotion. The role of healer requires the nurse to help individuals integrate and balance the various parts of their lives. (McKivergin, 2004)

The National Institute of Nursing Research (NINR) serves as the focal point in developing research themes for the future of the nurses. It supports research to establish a scientific base for the care of individuals throughout the lifespan, from management of individuals during illness and recovery to the reduction of risk of disease and disability. The four NINR themes include health promotion and disease prevention, improvement in quality of life, eliminating health disparities and setting directions for end-of-life research (NINR Strategic Plan, 2006)

3.3 The need for appropriate evidence in health promotion

There are problems of using randomised control trials in social and process-based settings and generalisation from research results can be hazardous (Newell, 1992; Oakley 1990). Arguing for the possibility that reliable and valid data can be generated suggests an 'underlying as-

sumption that the social world can be described in terms of univocal facts' (Ashworth, 1995, pg. 367)

The Health of the Nation Strategy for Health (Department Of Health, 1992) relies on health promotion as part of its delivery and has placed health promotion firmly within the legitimate remit of all those engaged in activities for health. Within initiatives such as the Healthy Alliances movement, key health workers embrace their health promotion role and function as well as identify and develop the health promotion skill required to contribute to meet the Health of the Nation targets (Department Of Health 1993)

Hasenfield (1992) argues that all forms of welfare or human service must be perceived as legitimate by not only their clients but also regulators, resource providers and other 'stakeholders' (McLeod, 1994). Evidence-based activity is therefore important in establishing legitimacy. It is important to evaluate health promotion services and activities on their own terms and not by a different set of values and criteria than those by which they themselves are underpinned or by a different set of outcome measures than those which are intended. Furthermore, the contribution of a number of practitioners and sectors to health outcomes also need to be taken into account (Rolls, 1997)

3.4 Health Promotion in Finland

In the Finnish case study, school is the health promotion setting. The main aims of the study are to explore public organization initiatives, actions and resolutions directed at promoting young people's health, mental well-being and social cohesion. The Ministry of Education, The National Board of Education, The Ministry of Social Affairs and Health, and The National Research and Development Centre for Welfare and Health have launched several comprehensive initiatives to promote the health and well-being of children and adolescents in their everyday life contexts. Some actions taken by NGOs are briefly described to enhance well-being and health learning at schools. There is extensive collaboration with NGOs in the field of health promotion. (Välilä et al. 2007, pgs. 91-101)

The Finnish Centre for Health Promotion aims to increase functionality of communities and potential of individuals to manage their everyday life by enabling health-supporting choices to increase equality in various population groups. This goal requires society to adopt health promotion as an integral part of social policy. The centre works in collaboration with partners in various related fields, including schools. It has 124 members representing organizations in the health care sector and other communities. The School Health Programme is a national project which continues to work with the European Network of Health Promoting Schools (ENHPS) in Finland. The project supports health promotion teams in their work, promotes

student participation and increases cooperation with student's families (Välimala et al. 2007, pgs. 100-101)

The development of the National Core Curriculum and associated activities has involved a long process of advocating, lobbying and negotiating with different levels and sectors of society. There are still challenges to be met in developing teaching methods to meet student's health learning needs and learning styles, developing health education textbooks and teaching materials for schools and for teacher training and assuring finance for health education teacher training.

The role of municipalities, schools and teachers, the unity and coherence of the comprehensive school, the role of home-school relations and cooperation between schools and other authorities or partners and importance of school culture and learning environment are some of the important changes in the National Core Curriculum (Välimala et al. 2007, pg. 101)

4 Theory of first aid situations

The reasons the next first aid situations were chosen, are because they are the most common situations and could happen to anyone, but are mainly directed to children and adolescents. The situations are based on literature and the latest possible knowledge on first aid. The skills to resuscitate, decrease significantly in about 3-6 months, so it is highly recommended to repeat the training often. (Duodecim, 2015)

4.1 Making the emergency call

In Finland the number for emergency workers is 112. It is highly important when making an emergency call to speak the truth, calmly and clearly. The emergency workers only know the facts, which were given through the phone. If the facts are somehow false or wrong, it could risk the patient not getting help fast enough or some other patient might not get help, even though his situation might be more severe. In the Finnish law it is punishable for making any prank calls or other similar calls, which might block the line. (Sisäministeriö, 2015) Calls should only be made, if there is an emergency, such as being a witness to a crime taking place at the moment, someone's life is in danger or if there is a fire. If the situation is not clear whether it is necessary to call or not, the call should be made. The emergency personnel on the line will assess the situation and tell, if it is necessary to have any of the emergency workers come by. It will not be regarded as making the unnecessary call, even though they might not come or cannot help. (Hätäkeskuslaitos, 2015) (Duodecim, 2015)

When making the call, all the questions the person on the other side of the phone asks must be answered. When he gives any directions, they must be followed precisely. When he gives the permission to hang up, only then it is acceptable. If the address is not known where the help is needed, there is a way of getting it anyway. The emergency centre can use the phones

location as an address, but only with permission given by the owner of the phone. (Hätäkeskuslaitos, 2015)

4.2 Sprains & strains

A sprain occurs when a ligament stretches or tears. A strain is a stretch or tear in a muscle or tendon. A sprain or strain usually occurs frequently to teenagers particularly if they are active and frequently indulge in a variety of sports, exercise or exertion. (Bass & Baker, 2005, pg. 72) Sudden or vigorous movement for which the muscle or tendons are unprepared can cause them to tear, cause bleeding, pain and loss of function. Ligaments are stretched and damaged by forceful movement of a joint beyond its normal range or as a part of a deeper joint injury caused by a fall or a sports injury. A sudden severe pain or cramp at the site of the injury, swelling at the site of an injury and also aggravated pain on the site of the injury is an indication of a sprain or a strain. The RICE theory is used in the first aid of sprains and strains. The RICE theory requires the following steps to be followed:

R - Rest the injured part. Most soft-tissue injuries need to be rested for 24-48 hours while being kept as comfortable as possible.

I - Apply an ice pack or a cold pad. The pain and swelling associated with soft-tissue injuries is reduced using an ice-pack or a cold pad wrapped in a cloth. It should be applied initially and then for short periods of 10-15minutes at a time for the first 24-48 hours. An ice-pack or anything frozen should not be applied directly to the skin because it may cause damage to the skin and may also add pain to the casualty.

C - Compress. Pressure should be applied to the injured part and may make the casualty more comfortable. Tubular elastic bandages also known as compress bandages give the best compression and if the compress bandage is not available, a crepe bandage over layers of cotton wool will also work well.

E - Elevate the injured part. The injured part should be rested above horizontal and ideally above the level of the heart, this will help in reducing the swelling.

It is always best to get a medical opinion about any sprain or strain. An X-ray may be needed to find out whether it is indeed a sprain or a fracture has occurred. The casualty may need physiotherapy or a referral to a clinic for regular checks. (Keech, 2004, pg. 169)

4.3 Wounds & cuts

Minor wounds can become infected and can cause real problems with the casualty's health. It is important that the first respondent is aware of the type of wound sustained by the casualty so that the appropriate first aid can be carried out. The two major types of wounds are open and closed wounds. Open wounds range from surface abrasions to deep puncture wounds while the closed wounds vary from small bruises to serious internal organ damage. Closed

wounds are usually caused by blunt objects. A bruise the size of the casualty's fist would cause substantial blood loss. (Keech, 2004, pg. 126) Bites, grazes and cuts heal without too much trouble and can be easily treated at home but some wounds such as puncture wounds are more likely to cause damage to the underlying tissues and organs and therefore need professional assessment by emergency personnel.

The first aid for minor wounds will be addressed in this paragraph. The first respondent in this case, should wash his hands thoroughly and should also avoid touching the wound so as to prevent the wound from getting infected. If he has gloves, it is advisable to use them. He should take a look at wound and find out how and where the wound was caused. The wound should be washed under running tap water or a bottled drinking water. The wound should be dried then a sterile adhesive dressing, plaster can be applied. Wounds that are over a larger area, a non-adhesive dressing, sterile dressing and bandage can be used. The casualty should ensure that the wound is kept clean and dry for a few more days after the wound occurred. (Keech, 2004, pg. 129) For major wounds, the first respondent should assess the wound and should seek qualified medical aid if he is unable to stop the bleeding with an adhesive dressing, if the wound looks like it could be deeper than 1-2mm or looks like it may need stitching and also if the wound covers a large area. There may be an infection if there is swelling, redness, a feeling of heat around the wound and also if there is pus within or oozing from the wound.

4.4 Fainting/syncope

Fainting, which is also known as syncope, is a brief loss of consciousness caused by a temporary reduction of the blood flow to the brain. It may also be a reaction to pain, exhaustion, lack of food and emotional stress. Fainting is also common after long periods of physical inactivity such as standing or sitting still especially in a warm atmosphere. This inactivity causes blood to pool in the legs reducing the amount of blood reaching the brain. When a person faints, the pulse rate becomes very slow. However, the rate soon picks up and returns to normal. A casualty who has fainted usually makes a rapid and complete recovery but if the casualty doesn't come around after a couple of minutes then this could be more serious than just a regular fainting situation. The key signs of someone fainting include brief loss of consciousness often causing them to fall on the ground, a slow pulse, pale cold skin and sweating. (Kindersley, 2011, pg. 112)

This paragraph talks about the first aid in situations of fainting. When the casualty feels faint or dizzy, he should be made to lie down. The first respondent should kneel down; raise the casualty's legs, supporting the casualty's ankles on his shoulder to improve blood flow to the brain. He should also watch his face for signs of recovery. The first respondent should ensure that the casualty has a lot of fresh air by asking bystanders to move away or in case it happens inside a room, someone should be asked to open the windows. As the casualty is recov-

ering, he needs to be reassured and helped to sit up gradually. In case the casualty feels faint again, he should be advised to lie down once again then the first respondent should raise and support his legs until the casualty fully recovers.

In the case where the casualty doesn't regain consciousness quickly, the first respondent should open the airway and check for breathing. There might be need for treatment for someone who is unconscious. 112 should be contacted. (Kindersley, 2011, pg. 112)

4.5 Diabetes Mellitus

Insulin is produced in the pancreas, in the beta cells of the Langerhan islands. (Virkamäki & Niskanen, 2010b) Insulin adjusts among other, the glucose metabolism in the body; it binds to insulin receptors on cells. (Terveysportti, 2010) Additionally insulin regulates the secretion of glucose from the liver, so that between meals the liver secretes the needed amount of glucose into the blood circulation. (Diabetesliitto, 2015b) Glucose is the most significant source of energy for the body; especially neurons are dependable of a steady glucose concentration in the plasma. The nervous system is completely dependable on the circulating blood glucose, which is also used by other organ systems, but they are more adjustable to the changing circumstances. After a meal, in a healthy body, the insulin concentration in the blood raises fast and enormously. (Virkamäki & Niskanen, 2010b)

Diabetes Mellitus is an autoimmune disease characterized by the plasmas elevated blood glucose level. An increased blood glucose level is called hyperglycaemia; it is due to either lack of insulin in the body, the diminished effect of insulin or both. Diabetes Mellitus is not a homogeneous disease but can be divided into many different sub-categories. (Finnish Internal Medicine Society; The Finnish Diabetes Association's Medical Advisory Board, 2014)

In Diabetes mellitus type I, the insulin-producing beta-cells in the Langerhans island of the pancreas are destroyed. (Virkamäki & Niskanen, 2010a) A genetic predisposition or an autoimmune reaction causes an external trigger, such as a viral infection, are background reasons for destroying the beta-cells and developing diabetes type I. (Kuitunen, 2014) Diabetes mellitus type II is a progressive disease. A dysfunction of the glucose metabolism, insulin resistance describes this state. In type II the pancreas is still producing insulin but either the production does not match the need or there is insulin resistance affecting the effect of insulin. Due to the progressive state of the disease, the production of insulin might finally deplete. (Virkamäki & Niskanen, 2010a)

4.5.1 Hyperglycaemia

Due to the lack of insulin the blood glucose level starts increasing leading to hyperglycemias. The increasing blood sugar level exceeds the kidney-threshold, which leads to glucose excreted to the urine. Glucose is an osmotically active substance which draws water with it leading to an increased urine volume. (Saha, 2010)

Too high blood glucose level is called hyperglycaemia, the muscles are not able to use the glucose if there is no insulin in the blood circulation or the amount of insulin is not sufficient. (Diabetesliitto, 2015d) The glucose stays in the blood circulation causing symptoms such as thirst, increasing need to urinate, tiredness, nausea and a decreased consciousness. (Saraheimo, 2014)

Untreated hyperglycaemia might lead to ketoacidosis. The development of the acidosis can take up to 6 - 12 hrs, as it continues to progress the body continues to dry, the blood pressure sinks, heart rate increases, breath starts stinking of acetone and the breathing is rapid and shallow but changes to Kussmaul breathing, which reminds hyperventilation. The blood glucose level is above 15mmol/l and the urine contains ketones, the acid-base balance of the body is acidic and the blood pH level decreases to less than 7,35. Ketoacidosis may even lead to death in 24 to 48 hours. A diabetic should have skills to monitor blood glucose levels and ketone levels in the urine and know about administering more insulin and taking more liquids as a part of self-care. Especially young diabetics may rebel against their disease by not taking their insulin doses as prescribed, without understanding the danger of the situation. (Ilanne-Parikka, 2014) In case of suspecting hyperglycaemia, the blood glucose should be measured and closely monitored and needed insulin doses should be taken. (Diabetesliitto, 2015d)

4.5.2 Hypoglycaemia

Hypoglycaemia is state when the blood glucose level is too low, the glucose concentration of the plasma is less than 4,0 mmol/l. Reasons for hypoglycaemia are when there is more insulin than needed compares to the blood glucose levels, excess exercise, too big o a dose of insulin, excess alcohol abuse or eating too little. Depending on the blood glucose level the body is used to, symptoms may occur at levels 4.0 - 6.0 mmol/l. Typical symptoms are fast pulse / heart beat, shaking of the hands, feeling of hunger sweating and an overall weak feeling. These symptoms are called adrenergic symptoms; the symptoms disappear in 10 - 15 minutes after ingesting fast-absorbing carbohydrates. Adrenergic symptoms occur when the blood glucose level is between 3,5 and 3,3 mmol/l. If the level continues sinking neurologic symptoms will start occurring, at that stage the blood glucose level is 2,5 - 2,8 mmol/l. Neurological symptoms of hypoglycaemia are tiredness, losing focus and concentration, headache, dizziness and blurred vision. Convulsions and unconsciousness occur when the level is below 2,0 mmol/l. (Mustajoki, 2014)

In hypoglycaemia the treatment and first-aid is to ingest fast-absorbing carbohydrates a dosage of 10g. If the symptoms do not disappear in ten minutes the portion or dose should be renewed. Examples of portions ingested during adrenergic or neurologic symptoms in hypoglycaemia are: 1dl of juice, 1 table spoon of honey, 1 fruit, 1dl of soft drink (not sugar-free), 3-5 cubes of sugar or for example 20g of ordinary chocolate. In severe hypoglycaemia 1mg of glucagon (Glucagen®) may be injected in the muscle. (Koivikko, 2013)

4.5.3 Insulin shock

An insulin shock is state of decreased consciousness, due to a too low level of glucose in the blood. If the hypoglycaemic person is still conscious can treatment be as described above, fast-absorbing carbohydrates orally or smeared to the mucus membranes of the mouth. If the person is un-conscious, the airway is secured at first, the person is assisted to a lateral position, and 1mg of glucagon may be injected into the muscle. If glucagon is not available, honey or syrup may be smeared on the mucus membranes of the mouth. (Nikkanen, 2014)

4.6 Choking

Choking can be due to an obstruction of the airways or the airways are swollen due to an allergic reaction. The next paragraph will explain how to remove any objects lodged firmly in the airways. The technique to this is mainly creating a high-pressure thrust from the diaphragm, which pushes the lungs and creates an artificial cough. (Bass & Baker, 2005, pg. 34) There are two types of situations when choking and they both are handled very differently. When the patient is still conscious and when the patient loses consciousness. The best situation is, obviously when the patient stays awake and can help the situation with coughing and other muscle movement to improve that high-pressure thrust to the diaphragm. Another manoeuvre, called the Heimlich, might feel as if hurting the patient, but like in any other first aid situations, the first responder has to consider the other outcome. When giving first aid, it should not be feared to hurt the patient, because then the first aid might not be given properly. Ultimately the patient might get some broken ribs, but that is better than letting the patient die.

4.6.1 First aid for a conscious patient choking

In choking the most important first aid is to remove the object that is blocking the airways. Usually the blockage is removed by coughing. When that is not enough, assistance is needed. Next step is to pat the patient on his back, between the shoulder blades. The pats should be strong and the patient advised to cough at the same time. When the object is visibly stuck in the throat, it can be taken out. (Duodecim, 2015) If this does not work than the Heimlich manoeuvre is recommended. (Einzig & Kelly, 2010, pgs. 36-37) The manoeuvre is done behind the patient and with the first respondent's hands around him, one hand in a fist and the other supporting it. The correct place for the hands is well below the sternum and above the navel. That is how to avoid breaking any bones. By pulling inwards and upwards while the patient is a bit bent forward, the diaphragm is pressured and causes the air in the lungs pushes the obstruction out of the airways.

4.6.2 First aid for an unconscious patient choking

When the first responder has done everything possible to help the patient and the patient loses consciousness there are still few techniques to revive him. Lay the patient on their back and make sure his chin is up and jaw pushed upwards, this makes the airways open and

the patient able to receive the rescue breaths. The nose must be closed by pinching it and holding on to it. Then the patient must receive two rescue breaths, blown as efficiently as possible, also making sure that the patient's mouth is fully covered with the first responder's mouth. Breaths should be given one in three seconds until the patient starts to breath or help arrives. If the patient starts to breath, is essential that he is put in the recovery position. Left hand under the right cheek and the left leg bent over the right leg and the patient on his right side, still kept in mind that the airways are open. An unconscious patient should never be left alone. (Bass & Baker, 2005, pgs. 24, 29-31)

4.7 Drowning

Spending time near lakes and the ocean is a strong part of Finnish culture during summer and winter. Not a Mid-Summers day has gone by that there have not been any reports of drowning. Drowning is the third most common between 7 - 24-year-olds and the second most common under 7-years-olds causes of accidental deaths. The next ten minutes after a patient has lost consciousness are vital in the survival of that patient. (Markkula & Öörni, 2009, pgs. 47-48) The first responder's actions have a profound significance on the patient's life. This is the main reason why the first aid skills of preadolescent's should be taught as soon as possible. When children are playing at the beach together, there might not be any adults to supervise them. Accidents happen fast and unexpectedly, so any skills or first aid knowledge might save a life. There are two drowning situations which need a slightly different first aid and actions; drowning in open water and in ice.

4.7.1 Drowning patient in open waters

The emergency workers have to be contacted immediately, when seeing someone drowning. The first responder's task is to get the patient out of the water and have someone else make the call. If the patient is in shallow waters, it is fine to get the patient out of the waters without any assistive equipment. If the patient is in deep, then it is better to have some flotation devices to assist the rescue. (Einzig & Kelly, 2010, pgs. 52-53) The patient might be in shock and pull the first responder also under the waters and both could lose their lives. Only the person who is confident in his/hers swimming skills can go in the water. Depending on the patient's consciousness level, CPR should be given and the directions are similar as when a patient has fallen through ice.

4.7.2 Drowning patient in ice

During the first days of winter weather and the end of winter, the ice is unreliable. Some people still go out for walks on the ice and may fall through it. The clothes during winter are really thick and there are often many layers of them. They increase the urgency to get the victim out of the water, because the clothes add more weight on him and more work to stay afloat.

The only difference between this situation and the previously mentioned is the way the person will be rescued. The first responder should not go on the ice. If there are any ropes, flotation devices or long tree branches, those should be used preferably. If these are unavailable, the people who are present at the situation can form a human line from the shore to the person being rescued. The first person in the line should lay flat on the ice, and from the shore, crawl to him. Another rescuer should do the same but as an exception to hold the legs of the first rescuer and depending how many people are present, continue the line. This ensures the safety of all rescuers. (Einzig & Kelly, 2010, pgs. 50-51)

The person drowning should have his arms spread wide and holding on the ice while kicking the water to stay afloat. If the person loses consciousness and his head goes under water, no one should go after him. The risk might be that the rescuer will not find back up from underneath the ice. If the victim is successfully pulled up from the ice, he should not stand up, but ordered to crawl to shore like all the other helpers.

The next problem is the cold. Hypothermia comes in few minutes, especially if the patient has wet clothes on. It is highly important to get that person immediately to warmth and all the wet clothes removed. Usual signs of mild hypothermia are stiff muscles, uncontrollable shivering and slurred speech. When it goes to more severe stages the patient goes unconscious and his heart might stop. When he is still awake, he should be given some alcohol and warm drinks. It is as important to heat the body from the inside as it is from the outside. Making the patient move, giving him warm clothes and getting him into warmth ensures that he will not go into shock or unconscious. (Bass & Baker, 2005, pgs. 115-117) In some cases the fast proceeding hypothermia can prevent brain damage, due to lack of oxygen, if the patient is not breathing, but still making sure the victim warms up. (Duodecim, 2015)

4.7.3 The CPR

When the patient is pulled to shore and is unconscious, CPR should be given immediately. The pulse must be checked. The patient should be laid on his back in order to see how he is breathing. Only ten seconds can be spent to evaluate, if the patient is breathing. (Duodecim, 2015) The neck should be tilted so the chin is up and the jaw pulled up. This opens the airways, but if there is no chest movement or air coming out of the nostrils, next step is to give the rescue breaths. Nostrils must be pinched together and the mouth opened for the breaths to be given. First two efficient breaths should be administered and, if the patient will not start breathing himself whilst there is no pulse, 15 chest compressions are needed. If there is a pulse, rescue breaths should be given in a rate of ten breaths per minute. The 2/15 cycle must be kept until there is a pulse and the patient starts breathing himself. (Bass & Baker, 2005, pgs. 30-31) The recovery position is for patients who are still unconscious but breathing. The left arm is put underneath the right cheek and the left leg is bent. Then pull from the left leg and arm the patient to his side. (Lindehag, 2011, pg. 88)

4.8 Allergies

Most causes of allergic reactions are due to animal dandruff, pollen, wasp stings, mould or different types of foods. These are called allergens and for some people they might be causing mild to severe reactions. The mild symptoms are runny nose, sneezing, itchy and watery eyes, hives, itchy throat and a small difficulty to breathe. The severe symptoms are shock and being unable to breathe. (Bass & Baker, 2005, pgs. 101-102) This is called anaphylaxis. The way to find out what allergens might cause an allergic reaction, is through an allergy test. The test can indicate the severity of the reaction it might cause. The medical staff will give directions on how the symptoms should be handled, especially when the symptoms could be deadly.

The first aid in allergies and especially in anaphylaxis should be dealt fast and efficiently. When the patient starts to manifest symptoms such as elevated heart rate, difficulty to breathe and swelling of the airways, ask the him, if he knows, what he is allergic to and how severely. If he doesn't know and the symptoms are getting stronger, the emergency workers must be notified. Over-the-counter antihistamines can be given and the clothes around the neck loosened. Being calm slows the reaction just a little, but is still important. (Einzig & Kelly, 2010, pg. 3)

Some people might have an epipen with them, if they know what they are allergic to and the severity of the reaction. This pen must be injected immediately to the thigh. Clothes are not in the way, it can be administered through them. The epipen contains adrenaline, which gives a power boost to the body to fight against the allergic reaction. The adrenaline is injected through a small needle that is pushed to the thigh all the way down. There is a button on top of the injection, which must be pressed hard and kept in place at least about 15 seconds, so all the medicine has been injected. The emergency workers must be waited and they will decide if any further procedures must be done. (Einzig & Kelly, 2010, pgs. 2-3)

5 The purpose and the goal of the thesis

First aid skills are important to everyone. These skills could potentially save a life. The purpose of this thesis is to try different methods of teaching first aid skills to adolescents and that teaching first aid skills would be more emphasised during health classes. First aid is not consistently taught in all schools and the teaching varies with the teachers. Some ask the Finnish Red Cross to come over to the school and teach, some study the subject themselves and then teach the class. It should be taught in an efficient way and all the teaching should be the same to all students around Finland. The goal of the thesis is to get adolescents interested in first aid and improve their skills by themselves in the future. When the students find interest in their health it could have positive effects in them and their families and friends' health in the future.

6 Learning and teaching

The basis of learning and implementing the learnt is through repetition. If the first aid skills are repeated often enough the probability of implementing these skills, in an acute situation, is higher. This is why it is necessary to understand what the students have already learnt and emphasise on repetition. Especially volunteering and physically being part of the examples improves the learning of the skills better. Peltonen (1985) shows the differences of learning through the four main methods; participation, speaking, seeing and hearing. The learning was evaluated and when using all of the above mentioned, the learning was 90 percent. When the participation was taken out, the percentage was already lowered by 20 percent. This shows the importance of using all sources of learning. The importance of participating orally also removes out dated information and false beliefs which are a normal to have, when teaching constantly changing information and skills. This is very common for first aid skills, because the information can be updated quite often. The opportunity to correct false beliefs and actions can be discussed during the lesson. (Peltonen, 1985, pgs. 29-32)

Peltonen and Ruohotie (1992) have gathered thoughts about learning and about the motivation to learn, which were used to plan the lesson to this thesis. The core of learning and teaching to any age group is the correct motivation. After motivation come the attitudes, values and the philosophy of life, both of the students and teachers. Motivation is a state of vitality; the energy that makes someone to want something and drives them to that. It also gives the direction and the orientation to a certain system, which will bring the person to the source of the motivation. It creates the activity level a person is pursuing his ultimate goal and it is tied to the values of that person.

Different values in this individual's life create the goal, i.e. he wants to study, so he will get a good job to provide his future family. His ultimate value in this case is being able to be a provider for his future family. This creates the motivation to study. By reaching this goal, it gives satisfaction to him. In a class room this could be implemented as giving value to the learning. The value in first aid lessons is that these skills might save a life of a stranger or someone close. This solely does not create the perfect learning atmosphere. The attitudes of the students cannot be changed easily, which affects the learning dramatically.

The attitude towards learning is created in a long term process. It depends on the person's beliefs, i.e. teachers might be considered as a scary and on the general belief, and i.e. his parents might think that school is a waste of time. If the attitude towards school and teachers, which enable learning, is negative, the person will not learn the best way possible. It might feel forced, and the key to motivation is the inner need or want to reach a goal. The philosophy of the person's life causes an attitude towards learning and it depends on the culture, which he is a part of. If in the culture it is considered as a respectable goal, then the person will also think accordingly.

If learning is considered generally and personally a mean to reach the ultimate goal and as a valuable tool also to other goals, the base work for learning is set. The next aspect, which Peltonen and Ruohotie (1992) discuss about, is the teacher's ability make learning possible. The same core of learning applies to teaching. The teacher has to be motivated to teach and enjoy his work. The teachers values comes from the respect of the trade, the students, the school and the results he achieves. The teacher must respect and be respected by the previously mentioned, so that he can teach the best way possible. From being able to enjoy the teaching profession and being able to centre the students in teaching, create the necessary positive attitude towards teaching. Teaching has to feel like a calling. The philosophy of life to the teacher is constructed of his view of the world. How will the work he does affect his surroundings and the world? There has to be a wider meaning to what he does.

The model, which mostly reflected the purpose of this thesis, is the motivation integrative model. This model is presented by Pintrich (1988). It integrates and organises the central ideas of other modern motivation theories. It is about the how useful the student might feel about learning the first aid skills and how interesting the subject presented is, also how reachable the goal of the learning is. So when this model is implemented in the planning of the first aid lesson, the key concepts are making the lesson interesting, valuable and useful in real life, and keeping the difficulty level low, so it is easy to learn. These concepts construct the motivation level of the students.

7 The teaching methods

The method that this thesis will be implemented by is the action-based research method. Teaching model is according to the motivation integrative model, which is explained further (Pintrich, 1988). All of the four teaching methods will be implemented to better the learning experience for all different types of learners. The teaching is decided to be held in English in order all of the writers of this thesis could participate fully. An international class was chosen from the Espoo area. The students chosen to participate for the first aid class are from Espoo International School and with the permission of their biology teacher; it is possible to do it in their school. The class has about 20-26 pupils and the length of the average school period there is 45 minutes. The date when the teaching will take place is 15.01.2015. The methods of teaching and learning were gathered by keeping the focus on the purpose and relevance of the topic for the lesson; teaching first aid skills. Using this information, the method of teaching will be planned and the implementation plan will be constructed.

8 The implementation plan of the teaching methods

The motivation level must be kept high from the beginning of the lesson to the end. The usefulness and the necessity of learning first aid skills must be emphasised. As making the lesson interesting, examples of real life can be added; own experiences of the teachers and the students. Best possible examples are of course the student experiences of emergency situations and their friends' and family's. Interesting facts and challenging questions will keep the focus on the topic and the open discussion flowing. The situations are so common; at least some of the students will have some kind of experiences of them. This connects the theory to actual situations and is more interesting.

The four learning methods will be implemented during the lesson. PowerPoint slides will contain all necessary information in concise sentences. They will be explained through examples and demonstrations with volunteers. The use of PowerPoint slides, which help the visual learners, the physical examples for the tactical learners, open discussion and the written material for verbal learners, and of course the teaching part for auditory learners. The negative side of using all of these together is that it can create discussions between the students and other kind disruptive behaviour. This must be contained to a certain point, otherwise open discussion is encouraged. Fine and Sandstorm (1988, pgs. 49-52) discuss the possibility of preadolescents behaving badly. It is normal behaviour when they have to show who is the toughest or funniest in class by testing boundaries and maybe causing some sort of hassle in class. This might be corrected with a simple trick, having the responsible teacher present during the lesson.

9 The implementation plan of the lesson

The class which was chosen to take part of the thesis was supposed to have a biology lesson. It was planned in the pupils schedule in advance, so there was no need to invite or advertise about the opportunity to participate to this class. The teacher made this class vacant for our purposes. The class has students that are 13-14 years old and this has been kept in mind in planning of the lesson. This is why it was decided to have a lesson which includes active participation, visual examples, discussion, written material and self-evaluation.

The active participation means that the students will be participating in the examples by volunteering and coming in front of the class to be taught, to the volunteers and the rest of the class, the first aid techniques. For example, the technique of making a tourniquet has to be physically shown and the main principles of the technique shown slowly to the audience for them to learn it visually. The visual teaching helps all of the class to learn better than only explaining it to them. The discussion is held by giving turns to the students to ask questions, which come to their mind after observing examples. The written material, PowerPoint slides, will be a presentation with key points written in a concise manner. The first aid situations are presented in an order of importance and relevance.

The teaching starts with introducing the teachers, informing the reason why the lesson will be held and its purposes. The teaching methods will also be mentioned and the need for volunteers at some points throughout the lesson. Encouragement to participate in the volunteering and in the discussions must be continuously up held, in order to have a properly working teaching environment. The teaching and learning environment must be kept open and friendly, so that the students and also the teachers will feel comfortable during the lesson. Important methods of getting the audience to listen and participate, is to be clear when talking, having eye contact with the pupils and being in front of the class standing and not behind any obstructions. To maintain discipline and remove excess hassle, the teacher responsible of the class must be present. Too much of discipline could hurt the openness of the class and make some students or all quiet and a bit afraid of participating. Some kind of discussion between the students is allowed, but when it disrupts the teaching, it must be mentioned. This is also the reason why it is good to have the teacher responsible of the class present, so that she can be the discipliner and the other teachers can focus on the teaching. (Peltonen & Ruohotie, 1992, pg. 95)

The next step is to introduce situation, explaining what causes the emergency and how to treat it. After this, the examples and volunteers are taken up front of the class and demonstrated to the pupils. The lesson will be mostly demonstrative. The equipment needed to demonstrate the first aid situations, will be lent from the Laurea Otaniemi campus. The first aid techniques of the lesson are based on literature and the latest possible information available on the techniques. The last phase completing the teaching is the questions that the students ask. The questions show how the pupils have learnt the material that was presented to them. This opens a route to discussion amongst the students and teachers. By asking questions, the students fill a gap in the learning with aspects that were not presented or covered by the teachers. This means they have understood the presented material and now seek for additional information. It also means that the students were interested enough to listen and propose questions.

For conducting this thesis, a questionnaire is given after the class. It will contain questions which will grade the teaching and learning of the pupils during the lesson. The previous knowledge of the subject is also evaluated. The questionnaire will be planned right after the material and theory of the first aid situations have been gathered. This will ensure that the questions are on the topic and relevant for the thesis. The way the questionnaire will be gathered back is to let them bring them in front of the class after they have filled it up. The pupils can decide how long they want to answer to them, but there is a time limit which is the very end of the class when we need to leave classroom. The rush to get to the next class or to the break between them can motivate them to answer the questions. They might even leave some questions unanswered because of the rush or even when they notice other pupils returning them.

The lesson will end in showing gratitude to the teacher, for allowing to use her class and students, and to the students for participating and volunteering on the examples. Additional information of the path of the thesis will be given to everyone and in their own liking can keep up with the process and the finished thesis. To contact the teachers, an email address will be left in case any questions arise after the class.

10 The lesson plan grid

This plan is what was used during the lesson held in Pohjois-Tapiola international school. It was constructed specifically keeping in mind the developmental stage of the class and suitable teaching methods.

	For the teacher	For the students	Long-term effects
The goal for the lesson	The goal for the teacher is to get the participating students interested and in tuned with the teaching. In this case learning first-aid skills.	To learn and to want to learn further in the future about first-aid skills	The students will continue their learning and willingness to update their knowledge in first-aid skills.
Target group	Adolescents	Class peers	X
Developmental stage of students	Puberty, developing one's identity (Erikson)	X	X
Methods of learning taken into consideration	There are many types of learners and the best way to teach all of these types is to have all methods of teaching during the lesson.	Hearing, reading, participating and speaking.	Considering all types of learners will include all students and not leave out anyone. This could cause the lesson to be confusing if not planned and separated clearly in advance.
Method of teaching	Using visual examples, PowerPoint show, open discussions, having volunteers in the exam-	When all types of learners are considered in learning, the teaching must be interesting as well. The	The teacher can try out different teaching methods and see which ones work the best. This part has a

	ples.	focus must be maintained.	lot to do with the interest of the students to the topic. This interest can pursue further interest in first-aid.
Schedule during the lesson	Depending on the activity of the class, the time will vary. As well as considering how much information you will be giving. In this plan the information was prioritised, starting with the most important ones and leaving out the last ones if time runs out. 10min per topic.	Students will have a 45min lesson scheduled.	After this first lesson the scheduling of the topics will be easier and the time that will be spent in discussion will be more predictable. This will help scheduling during other lessons.
Work stages	Start the lesson by introduction. Explain the first-aid situation and have the examples done with volunteers. During all times there is open conversation and questions will be answered if some come up. Every first-aid situation can have about 10min of explanation and examples with students. Questions will determine how the schedule will hold.	Students will volunteer on the examples after the presentation. They can pose questions at all times.	This kind of staging will keep the interest flowing throughout the lesson, although it might stir up commotion between students. This was thought problem to be removed by the responsible teacher during the lesson.
Evaluation	Questionnaire, which	The questionnaire is	The questionnaire

	will evaluate the students learning and the method used in the teaching.	done in the end of the lesson and the students will evaluate their own previous learning to what they learned during this lesson. They will also evaluate the method the teacher used.	can be useful when comparing the results and finding the perfect method to the teacher and to the students.
--	--	--	---

11 Implementation of the class

The first aid lesson was a very interactive lesson, one half of the class was actively involved, asking questions and volunteering. The other half of the class was a bit more passive in action but actively listening and present.

The lesson started with teaching how to make a proper emergency call, after this the teaching continued with first aid of sprains and strains. Two pupils of the class volunteered in playing the part of an injured and the other a friend helping. The teaching of the first part lasted a bit longer than planned. Being late according to our planned schedule, we had to re-prioritize our subjects then and there based on their importance and how time-consuming the subjects were. Next, we taught the class first aid in a case of choking involving the Heimlich maneuver.

The pupils were actively involved here as well; they were taught and showed how the maneuver should be performed. The teacher of the class pointed out that 8th graders do not necessarily know the sternum, as it is significant to know about the sternum in the Heimlich maneuver, additional drawings of the location of the sternum helped the pupils understand. From choking we moved onwards to drowning, allergies, wounds and cuts and finally very shortly about Diabetes Mellitus and hyperglycemia and hypoglycemia. Towards the end of the lesson the pupils were less involved and we discussed and taught more using the PowerPoint presentation prepared. We used materials we had brought with us such the EpiPen, insulin pen, band-aids, an ice package and a head showing the airways open or closed depending on the position of the head.

Ten to fifteen minutes before the ending of the class, the pupils were dealt the questionnaires and they were asked to fill them as a help to the making of our thesis. While they filled out the questionnaire we continued teaching and talking about our subjects. Finally we

thanked the pupils and the teacher, afterwards some of the pupils and the teacher came to ask further advice regarding their own life and relating to the subjects discussed.

12 Evaluation

The lesson was held as planned and implemented as planned. Some parts did not happen the way they should have, but they were dealt with during the class. The next chapters will explain the lesson more in detail and evaluate the actual implementation to the planned version of the lesson.

12.1 Evaluation of the lesson

The order in which the subjects were going to be presented were planned long before-hand, some subjects were removed and others were shortened, because of the short time. By arranging the slides in the level of importance, the most important ones were presented first and the rest if the time allowed it. It was discussed in advance, who would present which subject. To involve the pupils in the teaching was a very good way to get them excited about the subject, to learn, practice and think about the situations. The interaction required time outside our planning which made us behind our schedule; this in turn affected the rest of the lesson. Because we had to reprioritize and sort of improvise in the situation to have enough time to present the most important things, it affected the teaching and took time from our lesson.

During each subject the pupils were involved, by answering questions, participating and assisting as volunteers. An active discussion took place between us teaching and the pupils being taught. The end of the lesson was done in a bit of a hurry, since time was running out. However, the subjects still felt too vital to be left out, even though the students were filling the questionnaires. The pupils did not get to fill out the questionnaires in peace as planned at first, but instead the time was used to teach and discuss. Not giving enough time to concentrate on the questionnaire might affect the feedback since the pupils had to concentrate on many things at the same time. Also it might have affected their learning about the last subject and them missing out on some vital part because they were concentrating on the questionnaire. Some of the example instruments were still being passed around in the class room and explained at the same time as the next subject was already taught.

The lesson went well; it was not very organized, required improvising and prioritizing, but was very involving and a social happening instead of a monologue. Time was a very significant factor in planning the lesson and taking into notice the unexpected that might affect the planned, these would need improving. The subjects chosen concerned all and were events that could happen at school, during the school trip, at a hobby, at home or some other place teenagers spend time at. The pupils seemed interested and the lesson was despite some diffi-

culties, a success. Some of the students even stayed after the class and asked questions and gave oral feedback.

12.2 Evaluation of the implemented teaching methods

The methods used to teach the class were implemented mostly as planned. The teaching had all the four categories; visual, tactical, auditory and verbal. As suspected, the participation of the students was high and it created a small problem. The students had a few moments where they did not concentrate fully and discussed with each other. The teacher present was a good idea, because she returned the focus of the students back to the subject from times to times.

Volunteering of the students was a bit difficult at first, but when the students got excited, nearly everyone wanted to come forward. The use of PowerPoint slides made sure that what was taught by showing and explaining, was deepened with short easy and readable points from the whiteboard. If the students did not understand they had the possibility to ask directly from the teachers. The atmosphere was cheering, excited and open, so there was no reason why students could not ask the teachers their questions. Overall, the chosen methods to teach were very useful, but they had their minor faults.

12.3 Analysing the answers and results

A questionnaire will give the evidence to back up the objectives of the thesis, it will be needed in the evaluation of the lesson held and used as feedback for what might be done differently next time. The questionnaire must be planned keeping in mind the age group, the way that it is most conveniently filled and the best way to receive the needed feedback and evaluations of the lessons.

The questionnaire was planned and designed by reflecting to Gillham's "Developing a questionnaire (2004)". After the first aid class we give a questionnaire to the pupils and the teacher. The main research questions we wanted to get answers to were the pupils' previous knowledge on first aid, what they learned from the class and how they would feel being as a first responder. These questions were adjusted to form a semi-structured questionnaire with open ended question, simple and specific questions and grading. (Gillham, 2004) This fitted the most to our need to make it simple enough to answer fast, keeping in mind the developmental stage of preadolescents and the teaching methods that we had chosen to implement during our class. We already had in mind that some of the pupils might not answer properly because the questionnaire is so easy to understand, especially considering their age group. We wanted certain kind of answers from the questionnaire, answers which we can form a chart and easy to compare to each other.

Q1: 15 out of 18 pupils evaluated the usefulness of the first aid lesson, on a scale from 1 -5, 1 being not useful at all and 5 being very useful, to be very useful. The rest of the pupils evaluated the answer between three and four. The average being high, between 4,5 and 5. Based on the answers the first aid lesson was generally thought of as very useful.

Q2: In the second question the pupils were asked to evaluate their knowledge before the first aid lesson. 1 standing for little knowledge before and 5 for knowing all from before, eight of the pupils colored box number three, five box 4 and six pupils answered box number 2. One pupil deciphered between 3 and 4. The average being close to three, showing that some information was familiar from before but some information was new.

Q3: In the third question the pupils were asked to evaluate their knowledge of first aid after the lesson, this answer is to be compared to question number two's answers to get an idea on whether the first aid lesson did improve the pupils' knowledge about the subject.

Nine pupils evaluated that their knowledge about first aid was now, on the scale from one to five, a four. These pupils had evaluated in question two, their knowledge to be from two to three. Nine of the pupils answered five, most of them evaluated their knowledge in the previous question to be from three to four, a couple evaluated it to be a number two. One pupil answered their knowledge to be number three as in not to have improved considerably but also not just as the same as before the lesson. This pupil evaluated the knowledge before the lesson to be better (four) before the first aid lesson. All in all, it is safe to say that the pupils' knowledge mostly improved at least somewhat. Comparing the average of the answers the difference is nearly one and a half grades.

Q4: In the fourth question the attendants of the class were asked to answer how confident they would be being the first respondent to any first aid requiring emergency. The answers were very mixed varying from one to five, three being the most popular answer. In average the grade being 3, 36.

Q5: The fifth question was about evaluating on the scale from one to five, how much was unknown from before. The average answering rate being 2,92, a little less than half of the class answered between one to two and the rest answered three to four, no one answered five - all things being new. The answers show that the pupils had mostly basic knowledge, about the subjects presented, from before.

Q6: In question number six the pupils were asked about how much did their knowledge from before change due to the lesson, and whether there was any surprising information regarding first aid. The average answering rate was 3, 36, one standing nothing and five standing for

everything. Three pupils rated everything to have changed or being surprising, five pupils rated nearly nothing, two, to have changed, five pupils rated three and six pupils rated 4. The answers are almost 50-50.

Q7: The seventh question is indicating how good the teaching material was and to show whether it actually assisted in the learning process. The average of the answers was 4, 53 on the scale from one to five, one being the poorest. Based on the answers the materials were found suitable for their cause and being of assist during the lesson.

Q8: In the last rating question the pupils were asked to grade the teaching part of the class, using the same scale as in the previous question. The average amount of the answers was 4, 31. Eight pupils evaluated the teaching to be a four and ten pupils evaluated the teaching to be a five and the rest did not answer the question. Mostly the teaching was evaluated to be good but a slight improvement could be at hands.

Q9: Question number nine demanded a written answer to the question what the pupil thought we could have done better. In the answers the pupils wished for more volunteers to demonstrate the events and the first aid rescue and to read less from the slides or paper. Also some comments related to the jargon used, the pupils thought that terms could have been explained more and better and that the last parts of the presentation should have been better explained. The shortness of time was a point the pupils understood but clearly is an issue among the answers.

Q10: The tenth question asked what the pupils would have wanted more information on or more practice on. The pupils wished for more practice especially regarding the CPR section and how to give CPR to a drowning person. Also more information on gun and knife wounds was wished for and in this section the medical terms were wished to be better explained. A positive feedback regarding the allergy section was given based on the commonness of allergies in among pupils in school.

The answers in question nine and ten are quite similar to each other in that medical terms should be better explained, less theory and more practice and less reading from the slides with a louder voice was asked for. The feedback and wishes are very concrete and relating to the teaching process.

12.4 Self- and group evaluation

The evaluations are based on self-evaluation on the participance in writing and creating this thesis.

12.4.1 Mia Apajalahti; self-evaluation

I functioned as a member of a group of three. The theoretic part of the thesis was divided among all members, I wrote my share and feel that I have regarding the writing contributed well to the making of this thesis. The thesis required a lot of planning in which, especially in the beginning, I feel I took actively part in. As the writing of the thesis progressed I noticed that I had become a bit less active, and was mostly in the role of executing and only throwing ideas and suggestions here and there.

We contacted each other via the WhatsApp -application and Facebook. I am not an active Facebook user during spare time, which affected my activeness. The fact of having to be available at all times, which is modern society, had an effect on the emotional work-load the thesis brought.

Overall I feel that my contribution to this thesis was mediocre good and that all in all I was a reliable member. I did my theoretical share as agreed, was active at the teaching, took part in the brainstorming, had opinions and was relatively actively involved at times. I could have been more actively involved in terms of being in contact via Facebook, and sometimes gotten out of the role of only executing and taken a bigger role. All things considerate I am relatively satisfied with my contribution to the thesis and hope that my group members feel the same way.

12.4.2 Nyambura Gachari; self-evaluation

My thesis was written in a group of three (3). I was particularly interested in this topic due to the fact that when I was in the teenage age I never quite had any knowledge in first aid. We divided out parts in writing it. In the beginning I was actively involved but as time went by my schedule got tighter due to my practice. Amidst the exhaustion came about pushing deadlines forward. I'm quite impressed with my team due to the fact that there was great support and a mutual understanding.

The part of this thesis that inspired me the most was our presentation at the school. The knowledge that this students had was very impressive, this indeed showed how times have changed and what I thought of students in this age group was the exact opposite. These students were interested in acquiring more knowledge in first aid and had a surprisingly good command in it.

According to me, the fact that we updated our work and planned our meetings on our facebook and whatsapp was a good reminder because I frequent both and had a chance to check our working progress in the thesis.

Through this experience of working in something this important as a team, I have learnt that with a great team outstanding work can get done in a scheduled time amidst our busy day to day lifestyles. Generally I am satisfied with my contribution in writing this thesis, the teaching of first aid skills to the teenagers was my greatest moment regardless of the few challenges we had like time factor.

12.4.3 Mira Ojaranta; self-evaluation

The thesis writing was a long process. Especially when you have three people writing it and all of us have different schedules. I have had prior experience in thesis writing, which I used in creating this thesis. I have enjoyed the teaching part and the writing part of this thesis. The planning was the hardest part, because the subject of this thesis was so wide. Some parts had to be left out and we had to consider what areas were the more important should be kept in the thesis. The planning happened through social media and with few meetings in person. With every meeting, parts were divided and given.

I felt that I was a reliable member of this group. I always wrote and did what was planned and maybe even wrote too many parts, in considering the equal divide of parts, in this group. I was very focused on getting the thesis done in time. I have enjoyed the process most times, except of course, the technical problems, which usually occur when writing a long thesis. This was an experience, which I might use as a reference in the future.

12.4.4 Group evaluation

Our thesis group consisted of three members. All members lived in quite different directions and had relatively different life situations. These were the two major issues causing challenges in communication, meeting and participating in the making of the thesis. At first all group members were equal and no particular roles had formed, the working was very smooth until the first aid lesson. After this it was very much individual work and writing our individual parts to bring them part by part together. At this point the differences, mentioned earlier, emerged.

Despite challenges and delays a respect, mutual goal, motivation and understanding steered the group towards the right track again. Each group member had an own role, and all in all the group functioned well. It is no surprise that challenges occur when it comes to writing a thesis and many individuals are involved.

During our presentation at the school, we were so limited on time but we managed to work as a team to execute what we had intended for that particular lesson though we believe we could have got more reliable answers on the questionnaires had we had more time.

What could have been done different is the planning of a schedule in the beginning, with the help of a mutually agreed precise schedule, certain problems could have been avoided. Considering circumstances we are satisfied with the thesis and us as a team. Indeed teamwork brings about alliances, dialogue and coordination. Overall we worked well as a team and the challenges that came along the way were well worthwhile.

13 Discussion

Based on the students own opinions, expressed through the questionnaire, they found the subject and skills of first aid to be useful.

The students of the class were in the developmental stage of puberty, being adolescents at the age of thirteen to fourteen. Accidents are not uncommon for this age group, who is prone to taking unnecessary risks in the search of their identity, seeking for acceptance and dealing with the hormonal and other changes in their bodies. Since adolescents run a high risk of being involved in or otherwise being in contact with accidents or other situations needing first aid it is essential to teach them first aid, often. A first aid situation can be very demanding, in order to learn how to act in a first aid requiring situation, repetition is needed.

The level of first aid knowledge before this lesson was evaluated by the students differently, some clearly had more information and knowledge than others, but everybody had some. The first aid knowledge covered the subjects taught during this lesson, which were thought to be one of the most commonly taught and common events among first aid requiring events. As a summary, the knowledge level was mediocre in the class.

First aid teaching is included in the curriculum during basic education in Finland. Basic studies take place from the first to the ninth grade and should be taught according to the students' age and developmental stage. Based on this information and the answers of the questionnaire it could be concluded that eight graders have not received many first aid lessons. In addition the curriculums do not provide an exact plan on how to teach first aid, but is more of a reference or indication of first aid being a part of health education and ought to be taught. Teaching about accidents and situations that are dangerous are also a part of the National Institute of Welfare and Health's recommendations.

Since there is no exact plan on how, what and especially the amount, regarding first aid that should be taught, the level of first aid teaching may vary a lot, and at times could even be poor. One or two lessons of first aid by the age of fourteen is very little especially considering the accident proneness of the age group and future years to come. Accidents, along with suicide are the leading cause of death and injury during adolescence. They are particularly vul-

nerable to sports injuries. (Edelman & Mandle pg.558-559) This indeed indicates the importance of first aid lessons for this age group.

The questionnaire reveals the fact of repetition being the mother of learning. Most of the students evaluated their knowledge of first aid being better after one single first aid lesson, although mostly the pupils' did not feel very confident about being a first respondent in an emergency. Even though the students evaluated their skills of first aid to be good and better, the latter question reveals their actual level of knowledge and skills. Repetition and certainty of knowledge and skills bring certainty to, for example, face a situation. It should though be kept in mind that an emergency or a situation requiring first aid, can be challenging and demanding even for a professional.

The fact that the group is small and some of the answers might not be answered properly is recognised. This means the results are not a 100 percent valid, but they give a reference and are reliable. The open-ended questions though bring more to the final results. The planning of the questions is important, because they define the quality of the received data.

The subjects covered during the lessons were proved to be part of the most commonly taught first aid subjects, at least to this group of students. Some subjects were, however, new or less known to the students, such as allergies and complications of Diabetes Mellitus. The students themselves expressed via the questionnaire and after the lesson, that they thought these subjects were important, since many fellow students, friends and family members had allergies and Diabetes Mellitus. The students also wished for more CPR teaching.

The lesson plan grid made the planning of the lesson simpler and using it, one can create their own methods of teaching and taking into consideration the different types of learners. This can be used in many ways and can be as a base, when planning any lesson with any topic.

Through the feedback received and the results of the questionnaires the different teaching methods used served well the different type of learners the class probably had. In planning the lesson according to age and developmental stage a slight failure was perceived afterwards, the use of jargon and medical terms is directed to professionals and students, and it is not right to assume knowledge of these kinds of words from this age group. Nor should difficult terms be used in teaching, if it cannot be expected from the audience to know the meaning of them or in a case where the jargon takes the focus of the subject.

The importance and motivation to know about first aid is shown through this thesis, although it only reflects the opinions and levels of knowledge of one class, it might give a hint of the state of first aid knowledge of this age group throughout Finland. This thesis shows that an

interactive lesson with motivated teachers and motivated students, where all the different learners are taken into consideration and respected, is one good way to teach this subject.

A consistent plan in the Finnish curriculum of basic studies about first aid should be added to ensure health and safety of adolescents and other age groups. Teachers should receive a proper education to be able to teach this subject and to ensure the safety of the pupils. It is clearly shown that this subject interests adolescents and it should be taken advantage of.

References

- American Nurses Association. (2003). *Nursing's social policy statement*. Washington: ANA Publications.
- American Nurses Association. (2004). *Nursing: Scope and standards of practice*. Washington: ANA Publications.
- American Nurses Association. (2008). *Code of ethics for nurses with interpretive statements*. Washington: ANA Publications.
- Ashworth, P. (2005) *The meaning of participation in 'participant observation'*. *Qualitative Health Research*, 5(3) (pg. 367)
- Bass, D. & Baker, R. (2005). *First aid for family emergencies*. London: New Holland Publishers. (pgs. 24, 29-31, 34, 72, 101-102, 115-117)
- Bunkholdt, V. (2004). *Psykologi. 2nd edt.* Lund: Studentlitteratur.
- Department of Health (1992). *The Health of the Nation*. London: HMSO
- Department of Health (1993). *The Health of the Nation - targeting practice - The contribution of nurses, midwives and health visitors*. London: The Stationery Office.
- Diabetesliitto. *Tilasto: Diabetestietoa*. (2015a) Accessed 23.01.2015
http://www.diabetes.fi/diabetestietoa/yleista_diabeteksesta/tilastotietoa
- Diabetesliitto. *Aika ottaa insuliini käyttöön*. (2015b) Accessed 26.01.2015
http://www.diabetes.fi/diabetestietoa/tyyppi_2/tyypin_2_hoidon_abc/aika_ottaa_insuliini_kayttoon
- Diabetesliitto. *Happojen eli ketoaineiden seuranta*. (2015c) Accessed 26.01.2015
http://www.diabetes.fi/diabetestietoa/tyyppi_1/verensokeri/korkea_verensokeri_ketoaineet
- Duodecim. (2015). *Käypä hoito*. Accessed 30.01.2015
<http://www.kaypahoito.fi/web/kh/suosituksset/suositus;jsessionid=F9545F570F8861E36689832764591060?id=hoi17010#s3>
- Edelman, C. & Mandle, C. (2010). *Health Promotion throughout the Life Span, 7th edt.* St.Louis: Mosby Elsevier (pgs. 558-559)
- Einzig, M. & Kelly, P. (2010). *Baby & child emergency first aid*. New York: Meadowbrook Press. (pgs. 2-3, 36-37, 50-53)
- Fine, G. & Sandstorm, K. (1988). *Knowing children: Participant observation with minors*. California: SagePublications. (pgs. 49-52)

- Finnish Internal Medicine Society: The Finnish Diabetes Association's Medical Advisory Board. (2014). *Diabetes Current Care Guidelines*. Helsinki: The Finnish Medical Society Duodecim.
- Gillham, B. (2004). *Developing a questionnaire*. London: Continuum.
- Hasenfield, Y. (1992) *Human devices as complex organisations*. London: Sage.
- Hätäkeskuslaitos. (2015). *112 Hätäkeskuslaitos*. Accessed 19.01.2015
www.112.fi/hatanumero_112
- Ilanne-Parikka, P. (16.12.2014). *Diabetes. Liian korkea verensokeri ja happomyrkytys*. Duodecim oppikirjat. Accessed 26.01.2015
http://www.terveysportti.fi.nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=dbs01349
- Keech, P. (2004) *Practical Guide to First Aid fast and effective emergency care*. Lorenz Books (pgs. 126, 129, 169)
- Kindersley, D. (2011) *First Aid Manual St John's Ambulance, St Andrew's First Aid*. 9th ed. British Red Cross. (pg. 112)
- Kuitunen, M (2014) Paediatrics lecture at Laurea university of Applied Sciences, Otaniemi
- KELA. (18.12.2013). *Diabeteksen hyvä hoito*. Accessed 13.02.2015
http://www.kela.fi/documents/10180/1071853/Koponen_Diabeteksen_hyva_hoito.pdf/730f57b4-9342-4d06-a826-fff0205ce7e
- Koivikko, M. (21.05.2013). *Lääkärin käsikirja. Diabeetikon hypoglykemia*. Duodecim. Accessed 26.01.2015
http://www.terveysportti.fi.nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=ykt00553
- Lindehag, L. (2011). *Lapsiturvallisuuskirja*. Sweden: Schildts Kustannus Oy. (pg. 88)
- Markkula, J. & Öörni, E. (2009). *Turvallinen elämä lapsille ja nuorille*. Helsinki: Yliopistopaino. (pgs. 47-48)
- McKivergin, M. (2004). *The nurse as an instrument of healing*. In B. Dossey, L. Keegan, & C. Guzzetta (Eds.), *Holistic nursing: A handbook for practice* Sudbury Massachusetts : Jones and Bartlett. (pg.233-254).
- McLeod, J. (1994) *Doing counselling research*. London: Sage
- Mustajoki, P. (27.01.2014). *Lääkärikirja Duodecim. Tietoa potilaalle: Alhainen verensokeri (hypoglykemia) diabeetikolla*. Accessed 26.01.2015
http://www.terveysportti.fi.nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=dlk00757
- National Institute of Nursing Research (NINR). (2006). *NINR strategic plan. U.S. Department of Health and Human Services, National Institutes of Health, Pub. No. 06-4832*
- National Institute for Health and Welfare. (06.05.2014a). *Hukkumiset ja vesiliikenteen onnettomuudet*. Accessed 23.01.2015

<http://www.thl.fi/fi/tutkimus-ja-asiantuntijatyo/hankkeet-ja-ohjelmat/kansallinen-lasten-ja-nuorten-tapaturmien-ehkaisyn-ohjelma/tapaturmaiset-ja-vakivaltaiset-terveyden-menetykset/hukkumiset-ja-vesiliikenteen-onnettomuudet>

National Institute for Health and Welfare. (06.05.2014b). *Kaatumiset, putoamiset, liikuntavammat*. Accessed 23.01.2015
<http://www.thl.fi/fi/tutkimus-ja-asiantuntijatyo/hankkeet-ja-ohjelmat/kansallinen-lasten-ja-nuorten-tapaturmien-ehkaisyn-ohjelma/tapaturmaiset-ja-vakivaltaiset-terveyden-menetykset/kaatumiset-putoamiset-liikuntavammat>

National Institute for Health and Welfare. (23.11.2014c). *Kansallinen lasten ja nuorten tapaturmien ehkäisyn ohjelma*. Accessed 23.01.2015
<http://www.thl.fi/fi/tutkimus-ja-asiantuntijatyo/hankkeet-ja-ohjelmat/kansallinen-lasten-ja-nuorten-tapaturmien-ehkaisyn-ohjelma>

National Institute for Health and Welfare. (19.11.2014d). *Tapaturmien ehkäisyn opetus*. Accessed 19.02.2015
<http://www.thl.fi/fi/web/tapaturmat/lapset-ja-nuoret/koulu-ja-opilaitos/tapaturmien-ehkaisyn-opetus>

National Institute for Health and Welfare. (22.01.2015a). *Koululaisten ja opiskelijoiden tapaturmat lukuina*. Accessed 23.01.2015
<http://www.thl.fi/fi/web/tapaturmat/lapset-ja-nuoret/koulu-ja-opilaitos/koululaisten-ja-opiskelijoiden-tapaturmat-lukuina>

National Institute for Health and Welfare. (23.01.2015b). *Nuoret*. Accessed 23.01.2015
<http://www.thl.fi/fi/web/tapaturmat/lapset-ja-nuoret/nuoret>

Newell, D. (1992) *Randomized controlled trials in health care research*. In: J Daly et al. (Eds), *Researching health care: designs, dilemmas, discipline*. London: Routledge. (pgs. 47-61)

Nikkanen , P. (01.09.2014). *Sairaanhoidajan käsikirja. Insuliinisokki*. Duodecim Accessed 26.01.2015
http://www.terveysportti.fi.nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=shk02312

Newell, D. (1992) *Randomised controlled trials in health care research*. In: J Daly et al. (Eds), *Researching health care: designs, dilemmas, discipline*. London: Routledge. (pgs. 47-61)

Nurmi, J.-E., Ahonen, T., Lyytinen, H., Lyytinen, P., Pulkkinen , L. & Ruoppila, I. (2014). *Ihmisen psykologinen kehitys* 5th ed. Juva: PS-Kustannus. (pgs. 145-147, 149)

Oakley, A. (1990). *Who's afraid of the randomized controlled trial?* In: W. Roberts (Ed), *Women's health counts*. London: Routledge. (pgs. 167-194)

Opetushallitus. (2014) *Perusopetuksen opetussuunnitelman perusteet* Accessed 19.02.2015
http://www.oph.fi/download/163777_perusopetuksen_opetussuunnitelman_perusteet

t_2014.pdf (pgs. 461-462)

Peltonen, M. (1985). *Koulutusoppi*. Keruu: Otava. (pgs. 29-32)

Peltonen, M. & Ruohotie, P. (1992). *Oppimismotivaatio*. Keruu: Otava. (pg. 95)

Pintrich, P. (1988). *A process-oriented view of student motivation and cognition*. San Francisco: Jossey-Bass.

Rolls, E. (1997) *Competence in professional practice: some issues and concerns*. Educational Research, 39(2), (pgs. 195-210.)

Saha, M.-T. (01.04.2010). *Endokrinologia. Lasten ja nuorten diabetes*. Duodecim oppikirjat. Accessed 24.01.2015
http://www.terveysportti.fi/nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=end01806

Saraheimo, M. (16.12.2014). *Korkean verensokerin tuntemukset*. Duodecim Accessed 26.01.2015
http://www.terveysportti.fi/nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=dbk00146

Sisäministeriö. (2015) *Hätäpuhelun soittaminen*. Accessed 19.01.2015
www.intermin.fi/fi/turvallisuus/hatanumero_112_ja_hatakeskustoiminta/hatapuhelun_soittaminen

Syrjä, T. (2014) *First Aid Training for Degree Programme in Nursing Students*. Jyväskylä: Jyväskylän Ammattikorkeakoulu.

Towner, E., Dowswell, T. & Jarvis, S. (1993) *Reducing childhood accidents. The effectiveness of health promotion interventions: a literature review*. London: Health Education Authority.

Viner, R., & Macfarlane, A. (2005). *Health promotion*.
BMJ : British Medical Journal, 330(7490), 527-529. Accessed 22.05.2015
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC552817/>

Virkamäki, A. & Niskanen, L. (01.04.2010a). *Endokrinologia. Tavallisten diabetesmuotojen synty*. Duodecim oppikirjat. Accessed 24.01.2015
http://www.terveysportti.fi/nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=end01806

Virkamäki, A. & Niskanen, L. (01.04.2010b). *Endokrinologia. Insuliini-vaikutuksen solusisäinen viestijärjestelmä*. Duodecim oppikirjat. Accessed 24.01.2015
http://www.terveysportti.fi/dtk/oppi/koti?p_artikkeli=end01803

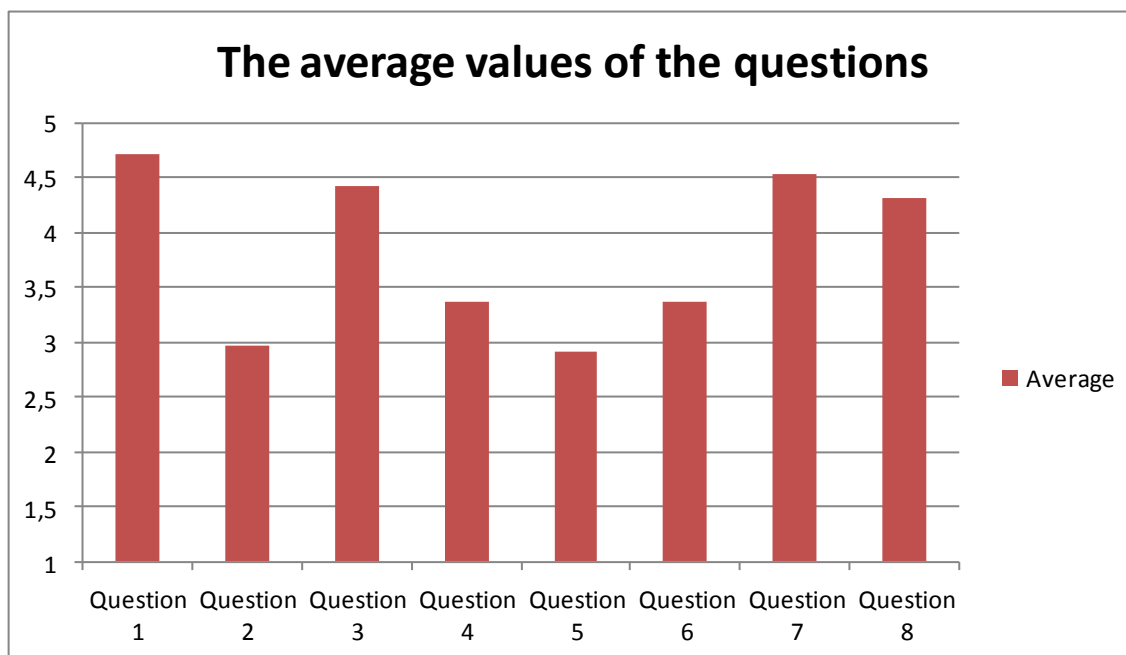
Virkamäki, A. & Niskanen, L. (01.02.2010c). *Endokrinologia. Insuliini*. Accessed 24.01.2015
http://www.terveysportti.fi/nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=end01802

Välimaa, R., Kannas, L., Lahtinen, E., Peltonen, H., Tynjälä, J., Villberg, J. (2007) *Finland: innovative health education curriculum and other investments for promoting mental health and social cohesion among children and young people*. Jyväskylä: Department of Health Sciences (pgs. 91-101)

Working group set by the Finnish Medical Society Duodecim, Finnish Internal Medicine Society and The Finnish Diabetes Association's Medical Advisory Board. (2013). *Diabetes Current Care Guidelines*. Helsinki: The Finnish Medical Society Duodecim.

Terveysportti. (01.04.2010). *Lasten ja nuorten diabetes*. Accessed 26.01.2015
http://www.terveysportti.fi.nelli.laurea.fi/dtk/oppi/koti?p_artikkeli=end01813

Figures: Average values of the questionnaire results



Appendixes: The questionnaire

QUESTIONNAIRE

Color the circle that corresponds your answer best

1. How useful did you find this first aid lesson?

1 = Not useful at all 5 = Very useful

1 2 3 4 5

If you colored circle number one or two:

For what reasons did you not find this first aid lesson useful?

2. Evaluate your first aid knowledge before this lesson.

1 = Little knowledge before 5 = Knew all from before

1 2 3 4 5

3. Evaluate your first aid knowledge after this lesson.

1 = Same as before the lesson 5 = Knowledge improved considerably

1 2 3 4 5

4. Would you be confident to be the first respondent to any emergency that would require First Aid?

1 = I would not 5 = I would

1 2 3 4 5

5. How much of the class was new? Write below what was new, that you didn't know before?

1 = Nothing was new 5 = All things mentioned were new to me

1 2 3 4 5

6. What surprised you concerning the information and first aid techniques? How much of your previous knowledge changed?
1= Nothing, 5= Everything

1 2 3 4 5

7. How would you grade our material?
1 being lowest, 5 highest number

1 2 3 4 5

8. How would you grade our teaching?

1 2 3 4 5

9. What do you think we could have done better?

10. What would you have wanted more information about / more practice?

The lesson plan grid, with explanations

	For the teacher	For the students	Long-term effects
The goal for the lesson	The essence of the lesson, the subject and how to reach it from the teacher's point of view.	The aim of the lesson regarding the students .	The aim of the lesson regarding the students and their future.
Target group	Age group the teaching is targeted to.	Applicable depending on subject. Target group the students can target their learning on.	X
Developmental stage of students	Age. Psychosocial development stage and the need and purpose of the stage.	X	X
Methods of learning taken into consideration	Which methods of learning are possible to apply, for example hearing, seeing, participating and reading. Consider different types of learners	Methods of learning the students will need to apply.	Long-term effects regarding methods of learning needed to use
Method of teaching	Methods the teacher will use to teach, for examples video, Powerpoint, acting out, speaking.	Methods of teaching the students will apply to teach themselves or class peers, for example volunteering.	Which methods will function the best in the long run, bring the wanted outcome and increase or create interest in the subject. Through interest and motivation self-learning by pupils is more probable to be maintained.
Schedule during the lesson	How much time will be spent on each subject or topic presented. Time range set for interaction on	Time reserved for the lesson in the students schedule.	The predictability of scheduling the lesson, wanted outcome of the scheduling of the lesson. Alterna-

	each subject and topic. Depending on the length of class, set time in minutes ensure efficiency.		tive schedule if original would fail. Also applicable after the lesson, regarding future lessons.
Work stages	Precise plan of the lesson, includes introduction and finishing. Order of topics presented.	Work stages from students point of view, compare to teachers work stages.	Describe long-term effects of the work stage chosen. Enables reflecting on orders of stages.
Evaluation	How will the teacher be able to evaluate the lesson	How will the students be able to evaluate the lesson, their learning and the teaching.	Proper evaluation and effective evaluation methods increases learning and improvement of learning, teaching and structuring of the lesson.