

Lehtonen Miina & Niemelä Sanni

**Promoting Physically Active  
Working Days to Sedentary Workers  
- Handbook For Sport Students**



Sports and Leisure  
Management

Spring 2018



KAJAANIN  
AMMATTIKORKEAKOULU  
UNIVERSITY OF APPLIED SCIENCES

## ABSTRACT

**Author(s):** Lehtonen Miina & Niemelä Sanni

**Title of the Publication:** Promoting Physically Active Working Days to Sedentary Workers - Handbook For Sport Students

**Degree Title:** Bachelor of Sport Studies

**Keywords:** Physical activity, Wellbeing, Occupational health, Motivation, Inactivity

This thesis was conducted to oppose the prevailing trend of increased inactivity amongst people, especially those with sedentary occupations. The purpose of the functional thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. It was conducted as an assignment for Myötätuuli Learning Clinic offering wellbeing and sport services for people of all ages in Kajaani. The aims of the thesis were 1) from the commissioning party's point of view, to create a new tool for them to support the students working for Myötätuuli in order to perform their tasks more efficiently; 2) from the authors' point of view, to gain knowledge and practical experience in their field of study and 3) from the society and working life's point of view, to create awareness about the benefits of physical activity and to promote an active lifestyle into workplaces. The three developmental tasks for the thesis were: how to motivate people to be more physically active at their workplaces, what kind of exercises and functions work best when being implemented at the workplace during working hours, and which form of information in a handbook works best to inform and motivates people towards more physically active behavior.

The thesis was carried out during fall 2017 and spring 2018, and it contained six phases based on the product development process by Ojasalo et al. (2014). The phases were: recognizing the development target, background research, developmental tasks, production plan, implementation, and assessment. As a support operation for the development of the product, and the assessment of the handbook, a practical testing period with the authors as instructors and a pilot group of nine clients took place during two weeks in April 2018. The finalizing of the end product referred to the feedback collected from the practical testing period through qualitative research in the form of interviews from the participants, the commissioning party, and practical observations made by the authors during the period. The testing period generated a lot of positive feedback, but there were also ideas for improvements. The adjustments were made to the handbook accordingly. As a result, the information collected to the handbook is guidance for good practices to use when carrying out tasks with clients, motivational tips and useful information to share with clients as well as instructions for break exercises, which can be utilized as such and performed in an office environment. The final version of the handbook was handed in for the commissioning party as an electronic copy (PDF-file) in the beginning of May 2018.

## CONTENTS

|  |    |
|--|----|
| 1 INTRODUCTION .....   | 1  |
| 2 PHYSICAL ACTIVITY RECOMMENDATIONS FOR THE WORKING AGED ...                     | 3  |
| 2.1 Health Benefits from Physical Activity .....                                 | 5  |
| 2.2 Risks Arising from Sedentary Lifestyle and Daily Inactivity .....            | 8  |
| 3 PHYSICAL ACTIVITY INTERVENTIONS.....   | 10 |
| 4 OCCUPATIONAL WELLBEING .....   | 16 |
| 5 COACHING .....   | 19 |
| 5.1 Professional Communication in Coaching.....                                  | 20 |
| 5.2 Motivation and Goal-Setting .....  | 21 |
| 6 DESIGN OF A HANDBOOK.....  | 24 |
| 7 PRODUCT DEVELOPMENT.....   | 26 |
| 8 DEVELOPMENTAL TASKS .....  | 29 |
| 9 PRODUCT DEVELOPMENT PROCESS IN PRACTICE.....                                   | 30 |
| 9.1 Recognizing the developmental target .....                                   | 30 |
| 9.2 Background Research.....   | 31 |
| 9.3 Developmental tasks .....  | 31 |
| 9.4 Production Plan.....   | 32 |
| 9.5 Practical Implementation .....   | 36 |
| 9.6 Assessment.....  | 38 |
| 10 DESCRIPTION OF THE PRODUCT .....  | 43 |
| 11 DISCUSSION .....  | 47 |
| 11.1 Assessment of the Product Development Process and the Final<br>Product..... | 47 |
| 11.2 The Reliability and Ethicality of the Thesis .....                          | 48 |
| 11.3 Professional Development.....   | 49 |
| 11.4 Future Development.....   | 51 |
| SOURCES.....   | 52 |

## APPENDICES

## 1 INTRODUCTION

A quarter of today's working aged population are exposed to an increased risk for premature death caused by diseases, which could be prevented by added physical activity levels in the everyday life. It has been studied, that no more than 150 minutes of moderate-intensity aerobic activity in bouts of 10 minutes or more have a beneficial impact on muscular and cardiorespiratory fitness, bone and functional health, and help with weight control and energy balance. This improved state of everyday wellness is not only a target for the benefits that it offers at an individual level, but also from a communal, national and yet global perspective. For employers the improvement in a single employee's well-being is likely to result as higher productivity, better attitudes towards work and a happier working environment. (The World Health Organization 2017.)

Health and well-being is appreciated alongside with a successful career. Whilst wellness is a topic of high concern and there are people trying to make positive changes towards improved health and fitness level, there is still room for improvement. Looking at the Finnish adult population every other individual is aiming at reducing body weight, the amount of people going to the gym is doubled since the 21st century, yet only 50 percent move according to the recommendations at least the minimal amount (Pesola 2013 p.14-15).

To enhance the situation and fight the trending inactive lifestyle this functional thesis project concentrates on finding everyday solutions for sedentary workers to increase the level of physical activity throughout the hours of work. The purpose of the thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. It was conducted as an assignment for Myötätuuli Learning Clinic offering wellbeing and sport services for people of all ages in Kajaani. The subject was specified to match the needs of the commissioning party.

The purpose of the functional thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. The aims of the thesis were 1) from the commissioning party's point of view, to

create a new tool for them to support the students working for Myötätuuli in order to perform their tasks more efficiently; 2) from the authors' point of view, to gain knowledge and practical experience in their field of study and 3) from the society and working life's point of view, to create awareness about the benefits of physical activity and to promote an active lifestyle into workplaces.

The process followed the product development process by Ojasalo et al. (2014) with six phases: development target, background research, developmental tasks, production plan, implementation, and assessment. The handbook was tested in practice by the authors with a pilot group of nine clients, and afterwards the handbook was enhanced and adjusted according to the feedback collected from the clients, practical observations during the testing period, and comments received from the commissioning party.

## 2 PHYSICAL ACTIVITY RECOMMENDATIONS FOR THE WORKING AGED

The target group of this thesis was limited to working aged people in an occupation where they spend most of their working hours sitting down. Working-aged people are defined as those between the age of 15 to 64 (OECD Data 2018). There was no specification for any certain occupation or fitness background. The differences in backgrounds of the people in the target group and their needs were taken into account when planning the physical activity interventions. The knowledge about suitable levels of physical activity to reach health benefits is crucial for the thesis. Therefore the physical activity recommendations needed to be known. To be able to comprehend the fundamentals of the recommendations, it's essential to understand the principles of physical activity.

Physical Activity means all bodily movement requiring energy expenditure and produced by skeletal muscles. Subcategories of physical activity are, for example, any movement created while playing, carrying out chores, commuting, exercising, working, dancing or moving spontaneously. Exercising is categorized as structured and planned, repetitive way of activity, which aims to improve or maintain one or more components of physical fitness, whereas all of the forms of physical activity of all intensities have positive health effects. (Merchant et al. 2007, p.24-25, The World Health Organization 2017.)

The factors that form physical activity in its entirety are frequency, intensity, duration and mode. Frequency refers to the times an individual engages in physical activity, basically answering to the question of how often. Intensity means the effort or metabolic cost that is put on the activity. Duration means the amount of time that's spent on physical activity, and lastly, mode describes the certain type of physical activity. Leisure time physical activities performed in moderate-intensity, such as gardening and brisk walking, require only a moderate amount of effort and they increase the heart rate moderately. Physical activities performed in vigorous-intensity, such as running or fast swimming, require a much larger amount of effort from the individual and they cause rapid breathing and a substantial heart rate increase. (Moore et al. 2012; Ransdell et al 2009 p.9)

The World Health Organization (WHO) has given guidelines for the suitable amount of physical activity in order to reach health benefits. The recommendations defined by the WHO (2017) for the working aged, from ages 18 to 64 and above, are as follows:

- 18 to 64 year-old adults are recommended to perform either a minimum of 150 minutes of moderate-intensity physical activity, 75 minutes of vigorous-intensity, or an equivalent combination of both moderate and vigorous-intensity activity throughout the week. In addition, adults in the age group are suggested to do muscle-strengthening activities for major muscle groups at least on 2 days in a week.
- Adults up from the age of 65 should perform equal amounts of physical activity as the younger adults, and those with impaired mobility are recommended to perform balance enhancing physical activity and activity that helps prevent falls on three or more days on a weekly basis.

All bouts of physical activity for these age groups should last at least 10 minutes at a time in order to benefit the cardiorespiratory health. Added health benefits can be reached by adults of all ages starting from 18 years of age, who reach 300 minutes of moderate-intensity activity per week, or an equivalent in vigorous-intensity activity. (The World Health Organization 2017.)

The UKK Institute in Finland has created a figure, which illustrates the World Health Organization's recommendations for weekly physical activity in the form of a pie. It can be seen in the figure 1 on the next page.



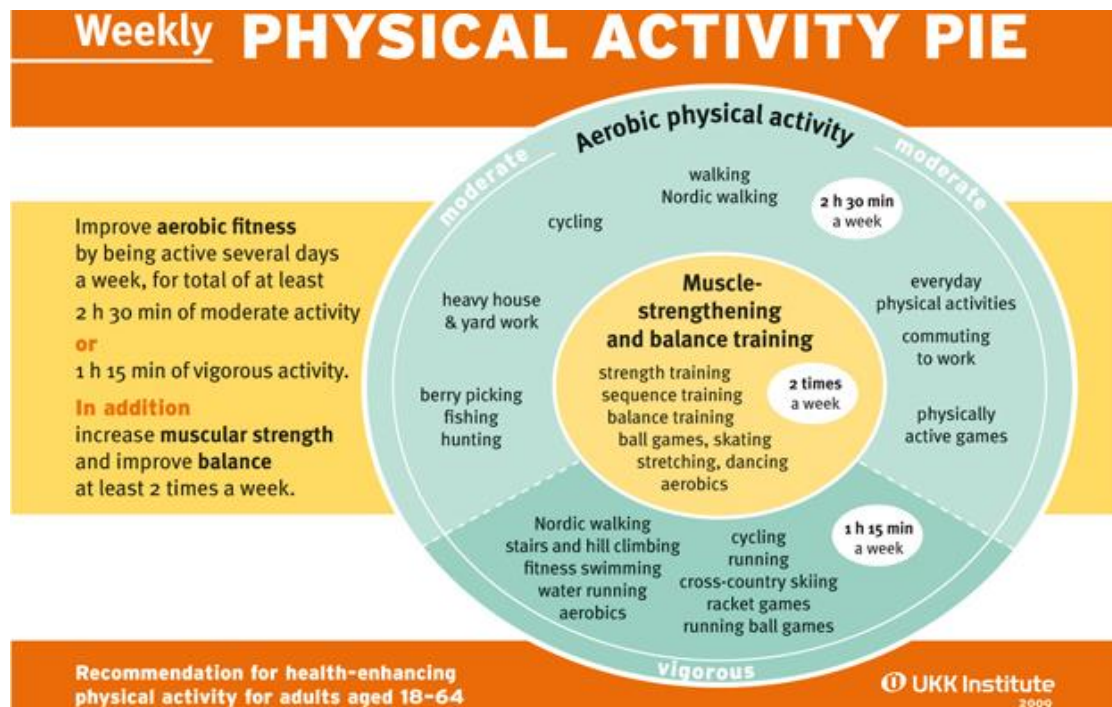


Figure 1. Physical Activity Pie. (UKK Institute 2009)

## 2.1 Health Benefits from Physical Activity

Sufficient physical activity enhances body functions such as metabolism, bone density, blood pressure, heart rate maintenance, and blood glucose balance - enhancing the quality of life and enabling staying healthy until an older age. Engaging in physical activity results as a large decrease in risks for detrimental health conditions when the activity level is increased from low to moderate level, and a further but smaller decrease in the risks when the change occurs from moderate to high level (Ransdell et al. 2009, p. 8). Expending around 1000 kilocalories per week in different physical activities decrease the risk of all-cause mortality by 20-30% regardless of sex and age of an individual. (Ransdell et al. 2009 p. 9). Improved physical condition helps with the immunity against common illnesses such as flu and results as improved ability to work even through the flu season. Faster metabolic rate and improved balance with blood glucose levels helps to remain more alert and feel more energetic, which also helps with weight control (Reiner et al. 2013). Exposing the body to a suitable physical strain during the day also often enhances the quality of sleep, which supports adequate recovery from the daily

activities and thus also supports good energy levels. Physical activity improves the ability to manage stress related feelings arising from work tasks, for example. As a whole, engaging in physical activity creates numerous health benefits, which can be divided into physical and mental health benefits.

Adequate physical activity reduces the risk of premature death caused by cardiovascular diseases or other causes by over 50 per cent. Additional benefits are in primary and secondary prevention of certain diseases including; coronary heart disease - studies have reported a negative relationship between physical activity and the occurrence of CHD for people engaging in physical activity levels above the minimum energy expenditure, diabetes, breast and colon cancer, osteoporosis and loss of bone mineral density, and stroke. (Darren et al. 2006.) Physical activity has also been shown to reduce the risk of obesity and its various negative health effects described more in the chapter 2.2. Greater physical activity leads to less weight gain according to different studies with several years of follow-up. (Reiner et al. 2013.)

People who are physically active regularly are at a lower risk of developing cognitive impairment, and physical activity is proven to be negatively related to the incidence of Alzheimer's disease and dementia in healthy men and women. Especially low intensity activities, such as walking, have been proven to have this effect. (Reiner et al. 2013.) Engaging in physical activity has also an influence on individuals' body mass composition by e.g. reducing fat mass and enhancing muscle mass (Westerterp et al. 1991). Miettinen researched the changes achieved on an individual's body composition with physical activity and nutrition within an eight month time period. The participants were provided individual counselling concerning physical activity and nutrition three times during the experiment. The results indicated influences in body composition and most of the respondents felt that the changes occurred due to an increase in physical activity rather than nutrition. (Miettinen 2012.)

Positive effects on mental health resulting from physical activity is based on the pleasurable feelings it provides in the short-term, and in the long-term when exercised intensively enough (Ojanen et al. 2001 p.196). It can create psychological benefits for both healthy people and those who might suffer from mild to moderate

emotional illnesses. Out of these different mental health conditions anxiety disorders and depression are the most studied. When reviewing epidemiological literature forms, it can be stated that physical activity is correlated with fewer symptoms of anxiety. In addition, it reduces the chance for anxiety symptoms by 25-50 percent. Same kind of positive effects have been found between physical activity and depression. Physical activity can reduce the appearance of symptoms of depression by 30-50 percent. (Ransdell et al. 2009 p.10-11.) Penedo and Dahn's review on studies examining the connection between exercise, physical activity and physical and mental health including depression and other individual mood states that an association between physical activity and better quality of life and health outcomes was found in most studies. (Penedo & Dahn 2005.)

From a social aspect physical activity provides an opportunity for engagement with other individuals of the community and strengthens the sense of belonging. Social interaction and engagement with the community are related to the quality of each individual's life in an overall picture. This is especially evident among older people, who very often spend most of their alone. (Fox & Hillsdon 2007.) More generally, engaging in physical activity enhances and supports individuals' mental balance, with or without a mental disorder. Physical activities can work either as a positive or negative stress factor for this balance. Determining the nature of this factor depends on the individual, whether they consider physical activity as a stress relief and empowerment in daily activities, or as an obligation without breaks, no matter the situation. Engaging in physical activity affects people by strengthening and empowering the body image. It also adds self-confidence and stress tolerance, fewer the feelings of anxiety and nervousness, makes the quality of sleep and social adjustment better, and increases the feeling of general wellbeing as a whole. (Huhtamäki Oy Lääketeollisuus 1988 p. 134.)

## 2.2 Risks Arising from Sedentary Lifestyle and Daily Inactivity

The trend in the working life in the developed countries with highly educated population has been recently, that the 8-hour long workdays are mostly spent performing various office and specialist tasks sitting down in front of the computer. This kind of sedentary lifestyle predisposes the working population to daily inactivity, which may have severe consequences. Sedentary lifestyle can be defined more generally as not being physically active on any intensity level (moderate-to-vigorous). A person is inactive, when the activities performed do not make significant changes to the energy expenditure compared to the energy metabolism at rest. Such activities include sleeping, sitting, lying down, watching television, etc. the energy expenditure from these activities is only 1.0-1.5 metabolic equivalent units (METs). One MET is the energy cost of resting quietly. (Pate et al. 2008.)

There are various risk factors arising from insufficient level of physical activity. People who fail to perform the recommended physical activity levels are more likely to suffer from cardiovascular diseases, such as coronary heart disease and stroke, cancer, diabetes, hypertension, and even mental health problems such as depression. Absolute inactivity reduces function and health status dramatically; being insufficiently active is stated as one of the leading risk factors for death worldwide. Being physically inactive leads very commonly those individuals into obesity, which as a whole creates more risks for different obesity-related diseases, back pain and the health of joints. (Fox & Hillsdon 2007; Pate et al. 2008; Pesola 2015 p. 13, Varo et al. 2003.)

Obesity has been one of the major issues of physical inactivity for a longer period of time already. The study conducted by Martinez-Gonzalez et al. (1999) suggests, that the steady increase in the prevalence of obesity in different parts of the world, such as the US, the UK and other European countries, cannot be explained only through genetic factors of individuals. It has been suggested that behavioural and lifestyle changes among many parts of the population are responsible for a sustained imbalance between the total energy intake, which means the relationship between the amount of food being consumed and the energy expenditure through people's resting metabolism and physical activity. Pesola (2013, p.10-17) calls this

the “Energy crisis”, which has switched from malnutrition and deficit to abundance, which is beating smoking in its seriousness. The common trend of energy intake has been decreasing by 20%, so the the energy intake is not the underlying issue resulting as increased body weight. The other factor that can explain the prevalence of obesity is the reduction of the amount of physical activity due to the trending digitalisation and sedentary behaviour. The energy expenditure by fitness training is not substantial enough to balance the equation, as it is often limited to a short period of time, and not performed daily. Through a physically strenuous job with moderate activity that lasts for an extended period of time the individual would reach a larger energy expenditure.

Sitting causes the overall activity level in the muscles such as the gluteus maximus to decrease significantly. The energy expenditure of a person decreases to 60 kilocalories per hour and the blood flow slows down. Sitting also deteriorates body functions in the blood; after four hours of sitting the amount of good cholesterol decreases significantly, and after five hours the power of the insulin decreases by 30%. (Pesola 2015 p. 9-11.) The level of activity measured in oxygen consumption in a sitting position is only a half compared to standing. By exposing the body to many hours of sitting daily, the body becomes predisposed to health risks that can arise from inactivity, as explained above as well as injuries and pain in different parts of the body. (Työterveyslaitos 2001 p. 128-133)

The health of the back within the working population is a momentous issue. Weak muscles of the back can lead to serious effects even by a small strain. The inactivity of the supporting muscles of the back not only makes the muscles weaker but also stresses the bones, ligaments and joints. Studies have shown, that the risk to suffer from injuries of the back rises up until the age of 50-60 years. That is why it is important to maintain good health of the back throughout the working years by exposing the muscles to different kinds of activity and movements. (Työterveyslaitos 2001 p. 128-133, 139.) Yet, all activity is not beneficial for the back, such as frequent bending and lifting at the workplace can increase the risk of injury (Pesola 2015 p.12).

### 3 PHYSICAL ACTIVITY INTERVENTIONS

Physical activity interventions are a growing trend in today's world and they can be found on many different occasions and environments such as school, kindergarten or at the working place. Their main objective for an intervention is to make a change in the target group's behaviour. The interventions can be examined using three different kind of approaches, which are informational approach, behavioral and social approach, and environmental and policy approach. (Ransdell et al. 2009 p. 17).

The informational approach includes activities, which are educational and broaden the participant's knowledge of physical activity. The goal is to increase awareness in the particular topic and use the information as a source of motivation. The interventions can use various media outlets to deliver the wanted informational message to the targeted audience, such as point-of-decision prompts, which mean informational signs placed in crucial places. An example of an activity using the informational approach could be point-of-decision prompts to increase the use of stairs among participants. A good location for the point-of-decision prompts would be near elevators. (Ransdell et al. 2009 p. 17-18.)

The behavioral and social approach concentrates on enhancing the behavior management skills of individuals and the creation of a social environment supporting the change. Examples of the behaviour management skills are for example the skill to plan physical activity, the ability to recognize risky situations and to prevent the relapse into the earlier type of behavior. Social support interventions in community settings try to develop the social support networks to promote and encourage more active engagement in physical activity. Individually adapted behavior change programs are also part of this approach. They, unlike the social support interventions, are adjusted according to the interests, readiness for change, and skill level of individuals and can focus on actions such as goal setting, positive self-talk, and developing the problem solving skills. (Ransdell et al. 2009 p. 18.)

Environmental and policy approach aims at making changes into the physical environments, norms, policies, and laws of community, such as enhancing the accessibility to physical activities by creating walking trails and exercise facilities or providing better and easier access to already existing physical activity facilities. Community and street-scale urban design and land use policies are also recommended activities in this category. (Ransdell et al. 2009 p. 18-19.) Inactive or sedentary working environments can be transformed into an environment that facilitates more action among the workers by changing the physical, or even psychological environment. The physical changes to the workstation include using more ergonomically beneficial models of working chairs, which support the maintenance of a good posture, providing swiss balls as an alternative for traditional office chair to activate the core and supporting muscles of the back or switching the seated working position into a standing one. In an educational institute in Helsinki, Stadin Ammattiopisto, some of the class chairs are replaced with rocking stools, which is shown in the figure 2 below.



Figure 2. Rocking stools at Stadin Ammattiopisto, Helsinki.

A good guideline for any working position is such that the weight is centered and the joints are positioned at a central position. Staying in a bad position can have physiological disadvantages. A little thing, such as leaning the head forward just by 10 degrees triples the weight of the head on vertebrae, and the muscles of the neck. Additionally, sitting in a bad position, e.g. with rounded back, increases the risk for back pain; in two hours little infectious processes begin to form in the back. No joint should be extended or flexed until its limits because that is the most burdensome position. For example, hip joint should be maintained so that there is a 100 degree angle between the thigh and the torso. (Pesola 2015, p. 13; Työterveyslaitos 2001, p. 133, 137, 142-144)

Maintaining any position for an extended period of time is also harmful for the body. It does not only add the strain to the ligaments, joints and vertebrae, but also hinders their metabolism, which means that they may suffer from lack of oxygen and nutrients. It is recommendable to change the position or at least take a break from the static position frequently. Breaks in 20 minute bouts are recommended by Pesola, yet Työterveyslaitos recommends switching position every 45 to 50 minutes. The best option would be switching the position between sitting, standing and moving around throughout the day. Standing is also a good way to add movement into the supporting muscles of the spine and core, and it doubles the metabolism compared to sitting down. That is a result of the natural movement of the body maintaining its balance. Another benefit from standing compared to sitting is that the pressure posed to the discs is 35 percent greater in a seated position than standing. (Pesola 2015, p. 13-17; Työterveyslaitos 2001, p. 133, 137, 142-144)

An effective way to take a break from any static working position is to perform break activities, which most commonly target to mobilise the problem areas such as neck and shoulders, upper and lower back, and hamstrings and hip flexors. An intervention study conducted between 1990 and 1992 by Karppi et al. (1994) found out, that neck-shoulder area symptoms can be reduced and subjective wellbeing increased by ergonomic counseling combined with physical exercise and psychological interventions. The study lasted during a 12 month period and the subjects were divided to two groups performing different physical exercise programs: A) aerobic training and B) strength training targeting neck and shoulder area. Another



study conducted by Kiiskinen (2018, p.31) focused on the effectivity of break exercises on muscle balance and lower back and neck and shoulder area pain. Break exercises were implemented to the working days of storage workers during a physical activity intervention. The results showed improved muscle balance for some individuals, but not greatly within the testing group as a whole. Nevertheless, 83 percent of the participants improved their compression force, 44 percent their shoulder area mobility and 78 percent their side bend results. The results concerning the experience of pain were controversial, but in general, the participants felt that the exercises had a positive effect on the feeling of pain, and found the interventions as useful, because they motivate people to engage in break exercises.

Markko and Pukkila studied the impact of a three-week exercise intervention on employees' leisure time physical activity. Their aim was to develop a comprehensive occupational wellbeing and exercise program for the employees, which included six coffee break lectures and six group fitness sessions during the three weeks. They found out that the intervention could increase the engagement in leisure time physical activity and cause a positive change in the attitudes towards physical activity. Half of the respondents informed an increase in their leisure time physical activity and felt more comfortable with exercising after the intervention. All of the participants stated that it is important for employers to provide wellbeing related services for their employees at the workplace. (Markko & Pukkila 2016.) Many businesses have already taken the development direction towards that. As seen from the figure 3 on the next page, Oracle has, for example, provided table tennis for their employees as break activity for their employees at each floor of their office building in Austin, USA.



Figure 3. Break exercise activities at Oracle offices, Austin, USA.

This matter with its influences should not be left out of questioning. That's why Dishman et al. wanted to find a scientific consensus on the effectiveness of worksite physical activity interventions for increasing physical activity. In their research they studied and judged already existing evidence on the topic and questioned the validity of research designs and measurements used in the past. The results showed the need for demonstration of statistically notable increases due to typical worksite physical activity interventions. Many of these previous studies' resulted in small or no effect. (Dishman et al. 1998.) This study has been conducted 20 years ago which might have an effect on the results and why there weren't any significant changes seen. This topic has been researched more since then and has become more evident and needed in the working life throughout the years, so the quality of the interventions might have improved with this change as well.

Moreover, the reporting and follow-up of the effects and the return of investment have been neglected according to the staff exercise barometer conducted by the Finnish Olympic Committee in 2017. The environmental factors at Finnish workplaces have not been left without notice and they have been changed to support the increase of physical activity within the working hours. A half of the workplaces offer means for pause exercise, but only 14 per cent offer guided pause exercise on a regular basis. The circumstances, which encourage commute by means of physical activity, such as shower facilities, are at a good level at nine out of ten workplaces. Yet, only 13 percent execute a program promoting the active ways to commute. Businesses in Finland have been investing in wellbeing at work and supporting employees' physically active way of life throughout the years with an annual budget of 400 million euros, averaging approximately 260 euros per employee per year. (The Finnish Olympic Committee 2017.)

## 4 OCCUPATIONAL WELLBEING

Occupational wellbeing is defined as safe, productive and healthy work, which is performed by professional employees and working communities in a well-managed organization. In the perfect example every individual experiences work as meaningful and rewarding, providing the sense of control of one's own life. (Työterveyslaitos 2018.) Overall occupational wellbeing includes physical, psychical, social and mental aspect. Each of these affect one another, for example psychically stressful job might reflect easily on the physical health in the form of getting ill. (Virolainen 2012 p.11-12.)

Occupational wellbeing has been divided into four segments by Etera Keskinäinen Eläkevakuutusyhtiö (2018): structure, which ensures that the work is done; ability, which emphasizes the means provided to do the work; working community, which focuses on the cooperation between the members of the working community; and condition, which secures the wellbeing of the working community. Tarkkonen (2012) examines occupational wellbeing from two points of view: individual psychological and functional. From the individual psychological point of view occupational wellbeing is a situation, where the working people gain empowerment and energy through the experience of respect, control, reasonability, joy of life, and health and safety. Functional aspect on the other hand requires looking after matters such as work safety, working ability and stamina, and mental well-being of the staff.



Figure 4. Five Steps of Occupational Wellbeing. (Rauramo 2012 p. 3-4)

The enhancement of occupational wellbeing occurs from three levels: society, an organization and the individual (Virolainen 2012, p.12). Rauramo's presentation of five steps of occupational wellbeing brings a more specific insight on the dimensions of the roles of the organization and the individual in the working environment. The approach is portrayed in the figure 4 above. The core issue considering the first step is that the work load and tasks should be matched to the capabilities and restrictions of each individual as an individual. The organization can further the wellbeing at the workplace by regulating the workload, providing proper nutrition during working hours and occupational health care for the employees. The input of an individual is to pursue healthy living habits, such as controlling the consumption of alcohol, exercising, eating healthy, and resting enough. The second step is the need for safety, which can be experienced by having secure employment, sufficient income, and a fair and equal working environment. Safe, ergonomic and proficient working habits, good manners, following rules, and taking care of responsibilities aim at fulfilling this need at the individual level. At the organizational level the employment and the working environment can be provided as secured and safe. The need for involvement forms the third step of occupational wellbeing.

It supports solidarity and cooperating both externally and internally within an organization. Next, at the fourth step, is the need of appreciation, which is formed by ethically lasting morals, fair salaries and an organizational mission supporting well-being and productivity. The fifth and last step is the need for self-expression. An individual can work for feeling in control of their work and to maintaining their abilities, experience joy from learning and participating in creative functions. (Rauramo 2012 p. 3-4.)

These divisions help to understand that occupational wellbeing is a combination of different kind of factors and functions, and all of those need to be taken into account. From the thesis process' point of view, the most important issues and aspects concern the physical wellbeing as a part of the whole. Adding activity to the workdays aims at improving the fulfillment of the psychological and physiological basic needs on the step one of the Rauramo's five steps, and also improving the healthy working and life habits, and safe and ergonomic workplaces.

## 5 COACHING

Coaching can be defined in different ways according to the method, process, implementation environment, and the interaction between the instructor and the person they are coaching. Synonyms used for coaching include *counseling, guidance, informing, advising, teaching* etc. This suggests, that there are many sides to coaching as a matter, but as a mode of work it is seen as an encounter between an instructor and a client, working together towards a shared goal. The goal aims to develop the client's skills or behavior; and during a coaching or counseling session the client learns how to use their own resources, solve problems, make favorable decisions, and track their personal progress, for example. Coaching, guidance and counseling all work to serve the client by providing time, attention and respect from the instructor, giving the client an opportunity for to be heard and feel better in its entirety. (Vänskä et al. 2011 p.16.) The interaction between a professional and a client is very important in the coaching relationship. The general main goal of the interaction is to have the ability to approach a client and communicate with them openly and with trust to find the right kind of solutions for them. This engages the client in an efficient thought process and both the analysis and the solution are produced in co-operation between the professional and the client. (Sipilä 1995 p. 72.)

In humanistic psychology, the overall understanding of a human being is holistic. It means that a person is a combination of different factors: physical, psychic and social, which are all in a continuous interaction with each other. People are physical creatures who are aware of their own presence, environment, society and social situation which they live in. Each person's experiences are unique combinations and thus can't be divided into pieces. Humanistic psychology assumes, that people are able to control and navigate their own lives through their own thinking and by free choice. Every individual actually affects the way their life proceeds through conscious and unconscious choices. Another assumption is the idea of human beings always pursuing to achieve goals. Through the goals and achievements people grow and develop throughout their lives. To understand an individual and their actions, one must try to comprehend the individual's outlook on the world

and the goals they have set for themselves. It is essential to acknowledge the individual's capability of influencing their actions and the course of their life. It makes it possible for a person to change through time, and experience spiritual growth. It also gives the meaning to psychic coaching. (Närhi & Frantsi 1998 p. 34.)

Holistic coaching tries to improve physical, psychic and social aspects of a person in an evenly manner. When one of these aspects is being coached and trained, the others are being affected at the same time. In order to develop and make progress at a maintainable level, all of the aspects need development. The physical aspect means concentration on bodily functions, organic processes, and different movements' biomechanical effects - physical capacity. In this case the attention on the individual comes from an outside point of view, and does not consider the personal feelings or thoughts of the person. The psychic aspect focuses on the personal experiences of an individual, and thus recognizes the person as a feeling, goal-oriented, and self-aware creature. This aspect includes matters such as self-image and confidence, focus and goal-orientation, and motivational issues. The social aspect considers the problems caused by the life situation and social functions of the individual. The main concept in this aspect is the influence of the special qualities of the individual's life have on building their identity, as an athlete for example. (Närhi & Frantsi 1998 p. 35.)

## 5.1 Professional Communication in Coaching

Communication plays a key role in coaching. It means the interaction and activity between people to forward information, thoughts, feelings, and attitudes. The several definitions of communication involve transporting of dispatches, transferring any form of information between two or more people, sending meaningful messages from one person to another, and producing and exchanging opinions. The communication skills of an individual can be adjusted according to different communication circumstances such as verbal communication, messages, non-verbal or physical communication. The environment in which the communication takes



place also affects the adjustments. The environment can mean physical environment or the social field or the psychological state created by verbal and nonverbal messages between individuals. In personal contact, the nonverbal communication such as body language, gestures and expressions is stressed among the emotional communication, tone and volume of the voice and the language used. Customer-focused occupations especially within the wellbeing industry involve acquiring and sharing of information by instructing, teaching, counselling and influencing, which also include dialogue, listening skills and skills to inspire a person participate. (Alasilta 1999 p. 29; Niemi et al. 2006 p. 15-16, 22-23, 289-290.)

When the communication between a professional and a client happens from a distance through electronic interaction methods the choice of words and tone of the voice are in key role depending on the choice of communication tool such as phone, email or a text message. In today's world there are countless of other ways to communicate and keep in touch with other people, too. Calling a client highlights the meaning of the verbal communication - the tone, language and articulation. The use of words should be adjusted according to each situation and client individually. Sending an email is another commonly used method. Things to consider when sending an email are the meaning and the content of the message, choice of words, tone and style, which should together form a professional image, taking into account the person who will receive the message. A respectful message from the recipient's point of view is a key element for cooperation. Text message and its structure need to be thought through before sending it and keeping in mind that someone else might end up seeing it from a phone screen. In a good message the text includes all the essential information for the recipient, is organized consistently, written with a style suitable for the matter and with correctly formed sentences. (Alasilta 1999 p. 192-195.)

## 5.2 Motivation and Goal-Setting

Self-determination theory is explained by Hagger and Chatzisarantis' (2007) as an evident part of sports and exercise. The theory defines human motivation and rec-

recognizes different spontaneous and intrinsically motivated activities people perform. It also demonstrates factors, which might have a strengthening or weakening effect for motivation. Motivation works to create satisfaction. Previous experiences and personal life situations define the matters that make an individual motivated and committed towards their goals. There are different factors affecting motivation as a whole and these can be very unique and personal for each individual. The influencing factors are divided into extrinsic and intrinsic motivation. Intrinsic motivation is simply something that comes from within a person, and is the meaning of doing some sort of activity for the sake of it such as fulfilling one's own needs or developing and testing one's limits. Extrinsic motivation, on the other hand, means that actions are motivated by triggers coming from the outside - expected outcomes or possibilities, which are not inherent in the activity. Examples of extrinsic motivation are feedback from other people or winning and losing. Intrinsic and extrinsic motivation have been put against each other in earlier literature, but self-determination theory has viewed people as having various motives, which can be both intrinsic and extrinsic, and can be working to adjust their behavior at the same time. (Hagger & Chatzisarantis 2007 p. 1-2, 6-7; Närhi & Frantsi 1998 p. 55-56).

Goals are created by the want to fulfill one's needs. They control people's behavior and commitment both consciously and unconsciously. Sometimes unconscious goals can have a negative effect on the progress of achieving conscious goals. As an example, an unconscious goal to always win can distract a person from focusing on the conscious goal for good technical performance. Important and effective goals are set, affected, and achieved individually. They should also be set within a time period short enough, before other matters and factors come in between the achievement of these goals. (Närhi & Frantsi 1998 p. 60-61.)

Effective goals can be defined according to the guidelines from an acronym, "S.M.A.R.T." invented in the 1980's. The original inventor of it is controversial, and there are several authors using it in their business management books, claiming that they were the original source of the acronym. There are also several different versions of the words that the letters in the acronym refer to. A familiar explanation of the acronym is visible in the figure 5 below. The first letter, S, is most commonly

used to describe specificity of the objective. It means, that the goal should be specific enough so that it is measurable, which is the meaning behind the second letter, M. third, letter A states that the goal should be attainable, R, the relevance and T time-based. Other words that have been used to explain the letters are: stimulating, significant, motivating, meaningful, assignable, agreed, realistic, recorded, tangible, and traceable. (Morrison 2010; Rapid Business Improvement 2016). Concluding, the common guideline states that the objectives should not be set too high, should not be too broad in meaning for the follow-up and feedback about the attainable to be easy, and yet that there should be a time limit set for the achievement of the goals in question. Why that is, is to be able to gain focus and get motivated to work towards those goals, which seem possible to reach, pushing the achiever towards taking action by limiting the time available.



Figure 5. S.M.A.R.T. Objectives. (J6 design 2015).

## 6 DESIGN OF A HANDBOOK

When a printed publication is the outcome of a thesis, the connection between the size and the typography of the product need to be taken into account. These two influence the readability of the product in a bigger combination with also the font size and the quality of the paper. 12 is a good character size in different kinds of files. In printed publications the body text is most suitably written with 9 -12, usually 10 -11, and headings with 12. These sizes need to be naturally considered according to different fonts amongst which there are variations. (Vilkka & Airaksinen 2003 p. 52; Toikkanen 2003 p. 33.)

Understandability of a text is defined as the capability of a reader to repeat and explain the content they have read. It's possible to evaluate these factors considering the handbook with the help of Wiiio's (1994) six requirements for understandability; visualization, relatability, wording, idea frequency, layout and motivation. Firstly, visualization means that the kind of reality that is distinguishable is the easiest to understand. Relatability is understanding a matter that is already familiar to the reader. Wording can influence the reading experience in either positive or negative way; weird, long and foreign words make the understandability more difficult; long and complicated structures prevent the formation of thought unities. Idea frequency considers the amount of matters or ideas put into e.g. sentences; the more there are the harder the text is to read. Layout takes into account the visual style and the content of a product. Motivation is achieved through an interesting topic that brings out the need to get more familiar with it. (Alasilta 1999 p. 70, 72; Loiri & Juholin 1998 p. 70.)

Pictures are a good way to get the wanted message across to the reader/viewer, often more powerful than just the use of proper typography. It's easier to understand the message or meaning of a picture compared to verbal or written messages. It might take only one glance for the reader/viewer to receive the message and gain their attention. Naturally, pictures and typography can be combined if solely the pictures are not as informative as they should be. (Loiri & Juholin 1998 p. 33; Loiri & Juholin 1998 p. 52-53; Alasilta 1999 p. 124-125.)

These things can be for example the preference of the company logo or colors in the product, or any other factors that create more personality for it in the viewers' eyes. Appearance has a huge effect on people's opinions even though it might not be always so visible. (Vilkka & Airaksinen 2003 p. 53, Välimaa et al. 1994 p. 70-71.) In addition to companies and organizations creating their own brands through the use of specific colors, these can also be used in a more symbolic sense to make a matter of some sort more known or to add aesthetic emotion. In this case, green is a color which is seen as a calming and harmonious color which also represents a new beginning. Green is seen as the power of the sea and the forest. (Toikkanen 2003 p. 43-44; Loiri & Juholin 1998 p. 111.)

After all of these bigger and smaller factors have been considered, they need to be put together in a layout, which is the most efficient and pleasant for the reader. This layout consists of the previously mentioned typography, pictures, colors, format of the product, quality of paper and the synthesis of these. A good layout guarantees an informative outcome when the visual style and the content of the product are in harmony. Readers often make up their first impressions of a book or a text by quickly glazing through it. This is why rapidly scanning through the text has to be made easy and efficient for the reader. This factor motivates the reader to start a reading experience. (Loiri & Juholin 1998 p. 70; Alasilta 1999 p. 59.)

Another thing to consider is the desired mental image that is communicated to the target group. The text needs to be written in a reader-focused manner. It means finding out the most important and useful factors for the reader taking into account what they know about the topic already, and using suitable expressions in the text. (Vilkka & Airaksinen 2003 p. 52, Alasilta 1999 p. 85.)

## 7 PRODUCT DEVELOPMENT

In the beginning of the product development process, there should be a goal set for the product in order to provide value to the company and its customer through the process. It can, for example be a development of the production process of a service, in order to reach more efficient action within the company. The product development process begins with choosing the target customer group and defining the purpose of the product. For the success of the product it is important to have specific target group in mind, so that the goal for the product development process does not end up being too broad and indistinct. By cooperating with the actual end user the product can be matched to the needs of the future customers more precisely. The whole product development process is based on finding a solution to the customer's problem. (Helsingin Kamari Oy & Villanen 2016, p.106, 181-183, 196-197; Jämsä & Manninen 2000 p. 28-33.)

A developmental process can be divided into six different phases. The phases are not always clearly divided in practice and can sometimes be difficult to recognize, nor do they always follow a chronological order. This is due to possible jumps back and forth between the phases before there is the possibility to move forward in the process as a whole. The six phases are:

1. Recognizing the development target
2. Background research
3. Developmental tasks
4. Production plan
5. Implementation
6. Assessment.

(Ojasalo et al. 2014 p. 23-26.)

The phases of the developmental process are described in the figure 6 on the next page.



Figure 6. The Six-phase Product Development Process.

The developmental process begins with acknowledging the development target and understanding different matters related to it. These developmental targets or tasks usually have the need to create some sort of change for example in a working community, which can be things such as products, services or new business models. The second phase is doing background research on the specific topic and finding information about it. This information is researched from both practice and

literature. The researched information should be meaningful and important according to the development task. The third phase defines and limits the developmental tasks for the process. This demands critical reading and listening skills on the topic as well as the ability to make choices and combine information from different sources into a functional combination. More specifically, this phase aims at finding the main point of view for the developmental task in question. After this phase has been done, it's possible to move forward to the fourth phase, where the theoretical background as a whole, and the approach and the methods to-be-used can be defined for the developmental process. The fifth phase is the practical part where the implementation for the process takes place. Even though it is a practical part, written reporting for the process should be an ongoing function during this phase as well. The sixth and final phase of a developmental process is the assessment of it. The assessment focuses on the successfulness of the developmental process itself and the production of it. This concludes the developmental process "circle", even though assessment can also be carried out throughout the whole process. (Ojasalo et al. 2014 p. 23-26, 51.)



## 8 DEVELOPMENTAL TASKS

The purpose of the thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. The aims of the thesis were 1) from the commissioning party's point of view, to create a new tool for them to support the students working for Myötätuuli in order to perform their tasks more efficiently; 2) from the authors' point of view, to gain knowledge and practical experience in their field of study and 3) from the society and working life's point of view, to create awareness about the benefits of physical activity and to promote an active lifestyle into workplaces. The aims of the thesis process and the developmental tasks were in line with the generic competences provided by Kajaani University of Applied Sciences, which include achieving working community and innovation competence. Working community competence developed through the thesis was the ability to operate in communicative and interactive situations with working life, to utilize information and communications technology, to get more familiar with the actors in the field, to create personal contacts in working life and professional networks and to develop entrepreneurial skills. Innovation competencies learned were the ability to conduct research, develop and innovate projects by applying existing knowledge and methods of the field into practice, being capable of creative problem solving and development of working methods, and the ability to find customer-oriented, sustainable and profitable solutions. (KAMK 2017.)

The three key developmental tasks of the thesis were:

1. How to motivate people to be more physically active at their workplaces?
2. What kind of exercises and functions work best when implemented at the workplace during working hours?
3. Which form of information in a handbook works best to inform and motivate people towards more physically active behavior?

## 9 PRODUCT DEVELOPMENT PROCESS IN PRACTICE

In this chapter, the actual process of producing the handbook is described from a practical point of view. The goal is to describe the process based on the phases recognized in the theoretical foundation of the product development explained in chapter seven.

### 9.1 Recognizing the developmental target

The first phase of the product development described in chapter five meant acknowledging the development target and understanding different matters related to it (Ojasalo 2014, p. 23-26, 51). As the thesis was conducted as an assignment for Myötätuuli Learning Clinic, the development target in this thesis was to create a new product that benefitted the commissioning party.

At Myötätuuli, different forms of well-being services are offered for a range of clients, such as individuals, organizations and working communities as well as the city of Kajaani. Different services provided by the clinic are health and fitness measurements, wellbeing functions for workplaces, groups exercise and individual coaching, and lectures on subjects related to health promotion. In addition to these, Myötätuuli organizes camp activities for many different age groups. The services and operations are mainly planned and organized by students, with the help of the teachers and staff members working at Myötätuuli. (Myötätuuli 2018.) At the learning environment it is possible for students at Kajaani University of Applied Sciences to implement the theoretical knowledge learned throughout the studies into practice in the field of sports and leisure management and activity tourism.

The learning clinic offered a suitable environment to conduct a thesis study. The idea for the thesis came from the Myötätuuli, as they had the need for a handbook for the sport instructor students running individual coaching sessions with clients. The commissioning party provided guidelines for the product in the initial conversation proposing a concentration on ways to add movement into the working days

of clients working in sedentary occupations. The authors' role in the product development began with an analysis of the current situation and studying the existing information about the chosen topic.

## 9.2 Background Research

The second phase in a developmental process was to do background research on the specific topic and find information about it (Ojasalo 2014, p. 23-26, 51). Background research for the thesis was conducted according to the factors that should be taken into account when planning the handbook for sports instructor students. In practice it meant finding the information that gives base to the ideas introduced in the handbook, such as health benefits of sufficient physical activity levels, and health problems sedentary workers can face due to low activity levels. To support the positive change, ways to motivate people into being more active in their daily lives is also examined combined with mental health benefits that can be reached through physical activity. Other issues researched were how to design a user-friendly and readable handbook for the communication to be effective. The background research worked as a guideline for finding useful information for the handbook.

## 9.3 Developmental tasks

The third phase focused on choosing the main aims and defining the purpose of the process (Ojasalo 2014, p. 23-26, 51). The purpose of the functional thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. The aims of the thesis were 1) from the commissioning party's point of view, to create a new tool for them to support the students working for Myötätuuli in order to perform their tasks more efficiently; 2) from the authors' point of view, to gain knowledge and practical experience in their field of study and 3) from the society and working life's point of view, to create awareness about the benefits of physical activity and to promote an active lifestyle into workplaces.

The three key developmental tasks of the thesis were:

1. How to motivate people to be more physically active at their workplaces?
2. What kind of exercises and functions work best when implemented at the workplace during working hours?
3. Which form of information in a handbook works best to inform and motivate people towards more physically active behavior?

#### 9.4 Production Plan

The fourth phase combined the theoretical background, the approach and the methods to-be-used in the creation of the developmental process execution layout (Ojasalo 2014, p. 23-26, 51). Factors that affected the production plan were the requirements for the visual look and design of the end product as well as the requirements for the contents of it. The handbook needed to be clear and understandable and provide only the most essential information for coaching people in the working life to be more active. The production of the first version of the handbook was started in the beginning of January 2018 and finished in the beginning of March 2018.

The first version of the handbook was designed using a free online software called Canva, available at [www.canva.com](http://www.canva.com). It contained a combination of fonts and font sizes, which were not in line with the theory part concerning the *Design of the handbook* – explained in chapter 6, which states that a good font size to use generally in different forms of files is 12 (Vilkka & Airaksinen 2003 p. 52; Toikkanen 2003 p. 33). The first version was a draft, to give an idea of the direction, contents and the design of the handbook based on the knowledge that was gained until that point, thus, the design was mainly based on the author's own view of a suitable

font, font sizes and layout as the research on the design was conducted after creating the first version of the handbook.

The body text was written with font Arimo size 16, and headings with font Helvetish size 24-36. The size of the font in headings was adjusted to match the design, so that the heading took reasonable space and suited the layout of each page. Some of the headings were placed inside a symmetric “cloud” shape with green outline to create more interesting design and color for pages which otherwise did not have any pictures, figures or symbols. Below, in the figure 7, is an example of a heading used in the first version of the handbook.



Figure 7. Example heading from the first version of the handbook.

The improved and final version was transformed to word for improved compatibility and the fonts streamlined to better match the guidelines explained in the chapter 6 of the thesis called *Design of a Handbook*. As concluded from Vilkka & Airaksinen (2003, p.52) and Toikkanen (2003, p.33), a good font size to use in different kinds of files is generally size 12, usually even for the headings of a written text. Although, it should be considered according to the nature of the product, quality of paper etc. Consequently, the font size of the body text throughout the handbook was changed to be size 12. The size used for the headings varied from 20 to 36. Size 12 was tried out at first, but it seemed too small for its purpose, especially since the headings were written in light green colour. The variations in the

font size is a result of fitting the headings of different length to two rows of text. The font used for headings and body text was a font called Trebuchet MS, which is clear and suited both purposes.

Understandability of the text in the handbook was written keeping in mind the earlier-mentioned six requirements by Wiiio (1994): visualization, relatability, wording, idea frequency, layout, and motivation. In the writing process it meant concentration on keeping the sentences short, using commonly known words, which support creating a positive image about the matter. On the other hand, weird, long, foreign words and sentences with complicated and long structure were avoided. The contents were arranged to be linked to each other, yet separated to chapters, so that different ideas are presented distinctively in different chapters.

The following questions were used as a guideline for choosing content. In other words, the content in the handbook answers the following questions:

- How to organize consultation for clients?
- How to give guidance in a way that is motivating?
- How to follow up on them to support their success throughout the planned programs?
- What kind of exercises to advise for the clients?

As a result, the contents covered background information about inactivity and benefits of physical activity and its importance for wellbeing; Instructor's role, tasks and specific information for coaching in personal and distant contact, and how to arrange motivational coaching; the working environment (both physical and psychological) and break exercises; Different kinds of exercise and yoga books were used as inspiration for movements, and suitable exercises were modified by the authors with their previously learned knowledge to fit into the office setting. Also personal coaching with interview question examples, goal-setting, examples for weekly challenges and keeping in contact with clients was included in the handbook. The contents list of the handbook can be seen in the figure 7 below.

# Sisällys

## JOHDANTO

## TAUSTAA

Inaktiivisuuden haitat

Aktiivisuuden tärkeys työhyvinvoinnille

## OHJAAJA

Ohjaajan tärkeimmät ominaisuudet lähiohjauksessa

Ohjaajan tärkeimmät ominaisuudet etäohjauksessa

Informatiivinen ohjaus

Motivoiva valmennus

## TYÖYMPÄRISTÖ JA HARJOITTEET

Fyysinen ympäristö

Psyykinen kannustus

Taukojummat ja harjoitteet

## HENKILÖKOHTAISEN OHJAUKSEN TOTEUTUS

Yksilöhaastattelu- esimerkkikysymykset

Asiakkaan henkilökohtaiset tavoitteet

Viikkohaasteet

Aktiivisuuden seuranta

Yhteydenpito asiakkaisiin

## LÄHTEET

Figure 7. Content list of the first version of the handbook

## 9.5 Practical Implementation

Coming closer to the end of the developmental process, the fifth phase was where the implementation with the reporting and the practical executions happens (Ojasalo 2014, p. 23-26, 51). After the first draft of the handbook was created, it was implemented into practice with a heterogeneous testing group of working-aged people from three different companies. The group included nine people who were all working in sedentary or otherwise inactive occupations. The practical testing period was carried out in Kajaani and Helsinki between 16th and 27th of April 2018. The two-week-long testing period was divided into two parts: a normal week, and a week with concentration on adding activity to the working days. During the second week the participants were coached, mostly in distant contact, using the ideas and material from the handbook as support for the work.

The collection of data from the testing period occurred in three ways: 1) The authors assessed the product and its content through their observations during this practical phase to see if the ideas felt useful and if there were changes to be made to the handbook. 2) There was activity data collected from the participants of the test group. It worked as supportive information to know a bit more of the participants' activity level for coaching purposes and was not treated as a qualitative method for research. 3) The collection of feedback from the test group of clients as well as the background information on the participants was collected as a form interview, which as a qualitative research method is explained below.

Using either form or theme interviews work as individual interviews in qualitative research methods. A form interview has specific open questions structured in the same order and format provided for all the participants. A theme interview is a more free method of collecting data and useful when wanting to receive information on a specific theme or making a consultation for professionals of a specific field. Theme interviews are most commonly and popularly used as a method to collect data in functional theses. These kind of structured interview sessions are a fast way to collect information on the topic under development. It is a very good method to use especially when the participants or interviewees roles as individuals



is emphasized providing them with a way to express themselves more freely. Interviews can work as ways to clear out or go deeper into certain issues, or discussing sensitive topics. (Vilkka & Airaksinen 2003 p. 63, Ojasalo et al. 2014 p. 106.)

The participants were contacted by email prior to the first week and asked to fill in a background questionnaire, which was an above mentioned form interview. The questions concerned their motives, current working environment, nature of the workdays and the activities they engage in at work. That way it was easier to get to know each customer's situation currently. To give an idea of their current activity level, the participants were asked to fill in a chart with sections for the amount they spent sitting down, standing still, and how many steps they took during the workday including the daily commute during the first week. The participants could use different activity monitors, such as Fibion- and Polar Loop- devices or an activity tracking smartphone app, such as Google Fit, to track their activity. The results from the first week were compared to the data from the second week to see if there was a visible difference between the two weeks. The form interviews sent to the participants as well as the activity-tracing table can be found from the appendices of the thesis.

On the second week, each participant was given ideas on how to make their days at work more active, not forgetting about their commute to work. In practice the ideas included encouragement to choose more active options during the day, and taking breaks from long periods of static work, seated or standing. Instructions for break exercises were sent as a PDF-file, utilizing the ready-made instructions from the handbook. The exercises were rearranged to sets of three movements targeting a specific area in the body to make using the instructions more efficient for the participants.

The testing period finished with another form interview to collect feedback and an individually performed feedback discussion session with the participants in person and by phone. The participants emailed three forms in total to the instructors: daily activity reporting, background questionnaire and feedback questionnaire. Analyzing these forms helped the authors to and evaluate the outcomes, and make changes according to the content if needed.

## 9.6 Assessment

The sixth phase, finishing the process, was the assessment of the developmental process and the production of it (Ojasalo 2014, 23-26, 51). Assessment meant for the thesis, in practice, the analysis of the test results and the evaluation of the finalized product. The handbook was reviewed by the commissioning party at three points of the process; when a draft version was created, after the first version of the handbook, and after the finalized handbook was handed in. The feedback received from the commissioning party about the first draft was that they wanted to change the cover photo of the handbook from a photo in gym setting to a more relevant one to the topic, which made sense. They also suggested to switch the colors used so that they match those of their logo (green). Feedback about the first actual version after the above-mentioned changes was that its design was fresh, cover good, and the contents seemed suitable.

The original group of participants was of nine persons. Unfortunately, a couple of them did not carry out the testing until the end, so the answers were recorded only from six participants, three in Kajaani, and three in Helsinki. The background of the participant varied in terms of means to get to work, whether the work is performed standing or seated and motivation to add activity to the working days. Only two had lunch outside of work on a regular basis, two walked to work and one took a 1.5-hour train ride to work. Two of the participants sat through the whole day, two mostly stood and one told the amount to be divided by 50/50.

Motivation to change the activity habits was based on the following factors:

- Adding energy level, for two persons
- Releasing pain, for two persons
- This measurement project, for one person
- Losing weight, for one person
- Mental and physical wellbeing, for one person

Major part of the participants (67 per cent) felt at least slightly stressed over their work tasks. Most of the participants answered that they have an opportunity to take breaks at work. That brings us to the analysis of the break exercises.

The break exercise movements and ideas provided were interpreted as useful and easy to carry out in the office surroundings. Positive comments were about that they were short enough, versatile, and that the instructions were clear and nicely visualized. The challenges that the participants faced with performing them were caused by lack of time due to busy days at work, or work situations, where exercising was not possible. All of the participants had tried the break exercises, and one even performed all of them during the week. The participants were interested perform them after work in such cases. A few of the participants planned to maintain the break exercises within their workdays even after the testing period had ended. Most of the participants preferred the break exercise movements that targeted the upper body area, such as neck, shoulders and wrists. Also circular movements were noted as nice exercises to perform during a day of static work.

Changes that the participants felt that they achieved through the project was concentrating more on their working position and amount physical activity during workdays, walking to a colleague's office instead of sending an email, changing working position through the day etc. Five of the participants answered that they changed their breaks to more active ones compared to the past; either by walking, standing or performing break exercises. Even though their mindsets changed towards a more active and motivated direction, only a couple of the participants felt a change in their energy levels.

The activity monitors used in this project were different. As the data only worked as supportive information to know a bit more of the participants' activity level for coaching purposes it does not play an important role in this process. The activity log was not handed in by all the participants, and only five of the results were recorded. One of the participants had to stay at home during the second week, so the recording concerned only Monday on the Second week. As seen from the table one on the next page, there were only a couple of participants, who stood more than 5 hours daily. The others had at least one or two days when the time seated

did not amount more than 3 hours. The standing log recorded is shown in the table two below.

Table 1. Activity Log Results; Time, seated.

| Time, seated          |             |                  |             |             |           |
|-----------------------|-------------|------------------|-------------|-------------|-----------|
| <b>w1</b>             | 4           | 0.5              | 7.4         | 7.5         | 6.5       |
|                       | 6           | 1                | 7           | 6.5         | 3         |
|                       | 5.5         | 1.5              | 6.7         | 3           | 6.5       |
|                       | 7           | 1.5              | 7           | 5.5         | 3         |
|                       | 6           | 1.5              | 7           | No data     | No data   |
| <b>Total per week</b> | <b>28.5</b> | <b>6</b>         | <b>35.1</b> | <b>22.5</b> | <b>19</b> |
| <b>w2</b>             | 4           | 0.5              | 6.5         | 3           | 3         |
|                       | 7           |                  | 6.2         | 3.5         | 3.5       |
|                       | 7.5         |                  | 6.7         | 5.5         | 7         |
|                       | 5.5         |                  | 7           | 6.5         | 6.5       |
|                       | 4           |                  | 7           | No data     | No data   |
| <b>Total per week</b> | <b>28</b>   | <b>0.5</b>       | <b>33.4</b> | <b>18.5</b> | <b>20</b> |
| <b>Change</b>         | <b>-0.5</b> | <b>No result</b> | <b>-1.7</b> | <b>-4</b>   | <b>1</b>  |

Table 2. Activity Log Results; Time, standing.

| Time, standing        |             |                  |             |           |             |
|-----------------------|-------------|------------------|-------------|-----------|-------------|
| <b>w1</b>             | 4           | 5.5              | 0.7         | 4         | 2           |
|                       | 3.5         | 5                | 0.75        | 3.5       | 5           |
|                       | 2           | 4.5              | 0.8         | 4.5       | 3           |
|                       | 0           | 4.5              | 0.6         | 4         | 5.5         |
|                       | 2           | 4.5              | 0.7         | No data   | No data     |
| <b>Total per week</b> | <b>11.5</b> | <b>24</b>        | <b>3.55</b> | <b>16</b> | <b>15.5</b> |
| <b>w2</b>             | 4           | 5.5              | 0.75        | 7.5       | 5           |
|                       | 1           |                  | 0.7         | 10        | 4.5         |
|                       | 0.5         |                  | 0.6         | 5.5       | 0.5         |
|                       | 2.5         |                  | 0.5         | 5         | 1           |
|                       | 4           |                  | 0.5         | No data   | No data     |
| <b>Total per week</b> | <b>12</b>   | <b>5.5</b>       | <b>3.05</b> | <b>28</b> | <b>11</b>   |
| <b>Change</b>         | <b>0.5</b>  | <b>No result</b> | <b>-0.5</b> | <b>12</b> | <b>-4.5</b> |

The steps were only recorded successfully from two of the participants due to the earlier-mentioned challenges and also, because for the participants who used Fibion, no data on amount of steps per day was collected. That is, because the tracker does not measure them. All in all these logs were secondary information

for the project. What can be seen from the table 3 on the next page, is that both of the successfully recorded test results show an increase in the amount of steps, which is encouraging to see.

Table 3. Activity Log Results; Steps.

| Steps                 |              |                  |              |                                |                  |
|-----------------------|--------------|------------------|--------------|--------------------------------|------------------|
| <b>w1</b>             | 2113         | 1395             | 2660         | Fibion, does not measure steps |                  |
|                       | 1812         | 2284             | 2958         |                                |                  |
|                       | 1676         | 756              | 4769         |                                |                  |
|                       | 1721         | 2262             | 3101         |                                |                  |
|                       | 1776         | 2537             | 2748         |                                |                  |
| <b>Total per week</b> | <b>9098</b>  | <b>9234</b>      | <b>16236</b> | <b>No result</b>               | <b>No result</b> |
|                       |              |                  |              |                                |                  |
| <b>w2</b>             | 3352         | 2054             | 3758         | Fibion, does not measure steps |                  |
|                       | 2228         |                  | 4362         |                                |                  |
|                       | 3930         |                  | 3204         |                                |                  |
|                       | 1940         |                  | 3772         |                                |                  |
|                       | 3218         |                  | 2316         |                                |                  |
| <b>Total per week</b> | <b>14668</b> | <b>2054</b>      | <b>17412</b> |                                |                  |
| <b>Change</b>         | <b>5570</b>  | <b>No result</b> | <b>1176</b>  | <b>No result</b>               | <b>No result</b> |

Improvement ideas from the participants included adding a daily notification from the instructors to the participants to perform exercises, as many had trouble remembering to do the exercises during busy workdays. One participant mentioned that a post-it note could have worked as a way of reminding oneself, and another came up with the idea of developing a break exercise app, which reminds the user on a regular basis. A daily reminder would enhance the success rate of adding activity to the workdays, so that is a tip that added into the handbook, and the development of an app to the future development of the thesis.

One participant suggested more personal feedback on the test measurements from the instructors after the testing weeks. Giving individual and specific feedback on their test measurements would benefit the participants in order to gain a full understanding of the matters included in the project. Some feedback was given individually in the second-week starting email, but the amount could be increased to more frequently given feedback and by staying in contact in person or by phone during the activation weeks. The participants found length of the testing as rather

short, and 2 to 4 active weeks could be suitable. In the handbook the recommended length was modified as a result. Generally, the participants saw the testing period as useful and interesting. They gained more interest in physical wellbeing and activation during the workdays, and were planning to implement the things that they had learned in the future as well.

Experimenting the use of the handbook in practice generated feedback to the authors about the functionality of the handbook and provided ideas for improvement. Observations made by the authors during the practical testing period included switching to a new version of the break exercise movements and stretches instead of listing the movements and the stretches as two long lists. The exercises were rearranged to sets of three movements, which target a certain area in the body. It felt as a more compact and user-friendly version of arrangement. Using the break exercises after the modification did not require instructing other than tips about how to perform the movements: The customer can choose which area of the body he or she wants to activate, choose a corresponding set, and perform as many in a row as they want. Also, the layout of the handbook was switched from Canva to word, due to incompatibility issues with paper-size etc., as Canva is an American program.

## 10 DESCRIPTION OF THE PRODUCT

The handbook was written in Finnish according to the commissioning party's wishes. It was saved as a PDF-file, so that it can be read easily from the screen of a tablet or a computer, or a hard copy. It was delivered electronically to the commissioning party, and they can later print the handbook out as needed. The production costs of the handbook consisted of the work hours put into the product development process. Because the authors did not seek for any compensation, the costs of the production remained as zero.



Figure 8. The Cover Page of the Handbook

Myötätuuli wanted the logo of Kajaani University of Applied Sciences and the colors of Myötätuuli included in the handbook. The colors they use are light green or green, and this was taken into account throughout the visual appearance of the handbook. Figure eight above shows details about the visual look of the handbook. The cover page illustrates the look in figure eight on the previous page.

The finalized product covers several topics related to the coaching process with a client, starting from the role of the instructor, communicating with clients, motivating and setting goals. By gathering facts about the benefits of physical activity, the risks that arise from inactivity as well as the recommendations about the amounts of physical activity, suitable working positions etc. the user of the handbook can learn more about these issues, and use them to motivate a client to change attitudes and behavior through the informational approach. The fulfillment of the physical activity recommendations for the working-aged was sought through physical activity interventions at the workplace. Concrete tools that can be used as such are interview questions, activity reporting table, weekly challenges and the break exercise instructions. The content list on the next page demonstrates the subjects explained in the final handbook. The four main subjects are:

1. Background (Information about the inactivity and importance of active lifestyle)
2. The Instructor (Role and traits in distant and personal contact, informational approach to coaching, facts to share with customers, and motivational coaching)
3. The Working Environment and Exercises (physical environment, mental encouragement, and break exercises)
4. Personal Coaching in Practice (example questions, diary models, weekly challenge examples, and instructions for contacting clients)



| <b>SISÄLLYS</b>   |           |
|---|-----------|
| <b>JOHDANTO</b>   | <b>3</b>  |
| <b>TAUSTAA</b>  | <b>4</b>  |
| <i>Inaktiivisuuden haitat</i>                           | 5         |
| <i>Aktiivisuuden tärkeys työhyvinvoinnille</i>          | 6         |
| <b>OHJAAJA</b>  | <b>7</b>  |
| <i>Ohjaajan tärkeimmät ominaisuudet lähiohjauksessa</i> | 8         |
| <i>Ohjaajan tärkeimmät ominaisuudet etäohjauksessa</i>  | 9         |
| <i>Informatiivinen ohjaus</i>                           | 10        |
| <i>Terveystoteamuksia toimistotyöläiselle</i>           | 11        |
| <i>Motivoiva valmennus</i>                              | 12        |
| <b>TYÖYMPÄRISTÖ JA HARJOITTEET</b>                      | <b>13</b> |
| <i>Fyysinen ympäristö</i>                               | 14        |
| <i>Psyykinen kannustus</i>                              | 15        |
| <i>Taukojummat ja harjoitteet</i>                       | 16        |
| <b>HENKILÖKOHTAISEN OHJAUKSEN TOTEUTUS</b>              | <b>56</b> |
| <i>Yksilöhaastattelu- esimerkkikysymykset</i>           | 57        |
| <i>Asiakkaan henkilökohtaiset tavoitteet</i>            | 59        |
| <i>Viikkohaasteet- esimerkkejä</i>                      | 60        |
| <i>Aktiivisuuden seuranta</i>                           | 61        |
| <i>Päiväkirjamalli</i>                                  | 62        |
| <i>Yhteydenpito asiakkaisiin</i>                        | 63        |
| 2   |           |

Figure 9. Content List of the Final Version Of the Handbook.

One of the key elements in the handbook are the 13 different break exercise sets presented in the handbook. Each of them contains of 3 movements, totaling 39 movements that fit into an office environment. The instructions to break exercises can be used with clients as they are, or to mixing up the movements to create own version of workout sets. The movements can also be used as a “library” for planning and instructing a break exercise session in person. The movements are listed below, according to the contents in the handbook (with translations to English).

*Niskajumppa - Neck workout*

*Rannejumppa - Wrist workout*

*Hartioiden vetreytys - Shoulder mobilization*

*Pituutta kylkiin - Length to the sides*

*Rintarangan avaus A) - Chest opener A)*

*Rintarangan avaus B) - Chest opener B)*

*Selän liike A) - Back movement A)*

*Selän liike B) - Back movement B)*

*Selän liike työtuolissa - Back movement in the working chair*

*Alavartalon aktivointi A) - Mobilization of the lower body A)*

*Alavartalon aktivointi B) - Mobilization of the lower body B)*

*Alavartalon aktivointi työtuolilla - Mobilization of the lower back in the working chair*

*Toimistojooga - Office Yoga*

## 11 DISCUSSION

The purpose of the thesis was to produce a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations. The aims of the thesis were 1) from the commissioning party's point of view, to create a new tool for them to support the students working for Myötätuuli in order to perform their tasks more efficiently; 2) from the authors' point of view, to gain knowledge and practical experience in their field of study and 3) from the society and working life's point of view, to create awareness about the benefits of physical activity and to promote an active lifestyle into workplaces. In this chapter, the assessment and the reliability and ethicality of the thesis process and the product is discussed, followed by examination of professional development throughout the process, and lastly, ideas for future development under the topic presented.

### 11.1 Assessment of the Product Development Process and the Final Product

The points for assessment from the practical testing of the product were: the suitability of the break exercise movements included in the handbook and their effect towards a positive change within the working days and daily activity level, the usefulness and suitability of the information in the handbook, and user experience. The ideas and tips presented in the the handbook needed to be supportive for the work of the sports instructor students perform at Myötätuuli. The requirements for the handbook were to be easy to read and understand. The multistage production process with practical testing phase of the product strengthened the product's suitability for its purpose. This was in a key role for finalizing a functional and useful end product. The practical observations proved that the handbook and the ideas worked in practice, especially after the final version of the handbook was improved based on those observations and the comments received from the participants. The commissioning party, Myötätuuli, also played an important role verifying that their needs have been met. In the end, the product process reached its purpose, and a handbook for sport students working for the commissioning party, coaching clients with sedentary occupations was created.

## 11.2 The Reliability and Ethicality of the Thesis

A well-conducted and sufficient background research establishes the reliability of the thesis and supports the topicality of the subject. The reliability of a research can be assured in different ways; by two evaluators sharing the final result or re-researching the same person on multiple research occasions with the same result (Hirsjärvi et al. 2002 p. 213). In the case of the testing of the product of this thesis, the reliability was secured with both of these factors; testing the same people and checking their opinions and changes in behavior, and in addition, having two evaluators analyzing the results from it.

As the qualitative research method does not aim at finding one “true” in the research process, its reliability is harder to assess compared to quantitative research methods, which aim at testing a theory and finding consistent scores for variables. Its trustworthiness can be affected by the researcher and the circumstances of the research. (Atkinson 2012, p. 177-178.) Because the purpose of the qualitative research during the practical testing period; the two form interviews sent to the participants was to collect feedback, which is an opinion, the research method was suitable for its purpose – As there is no right or wrong answer when the concern is about individuals’ opinions. What might have affected the reliability of the results and given a too positive image from the answers, is that some of the participants were previously known by the authors, and that the participants in general might have felt that they cannot be too critical with their feedback, to avoid hurting the feelings of the students conducting a thesis study. Also, since the testing group only provided feedback from six participants, the results from the qualitative research cannot be generalized to a larger scale of population.

The handbook development process including its several phases is justified, because in addition to theory based information about product development process the authors have researched several different health related developmental thesis projects with handbook as their project outcome. The developmental thesis projects have been conducted by previous bachelor degree students at Kajaani University of Applied Sciences and their production plans have been successful (Kilpijärvi & Tikka 2016, Nieminen & Rossinen 2010, Kettunen et al. 2010).

Ethical issues that need to be considered when writing scientific text are avoidance of plagiarism, consciousness of the possibility to use language that can be offensive in regards to ethnicity or gender, for example. Plagiarism can be avoided by citing properly to acknowledge the work, such as ideas or data done by others. The statements made in the writing should be confirmed by reliable sources, such as research articles, books and information gathered from web-sites, which can be interpreted as appropriate. (Cargill & O'Connor 2009, 45-48; University of Richmond 2018). The thesis is ethical in the sense that no information was copied from any source without referencing it adequately. The product was planned to fit people with different needs, shapes and sizes, so that it would not be a judgemental piece of information, but a useful tool to encourage everyone to move, and to bring positive effect into people's lives. The testing group was collected from volunteers, who were open to make a change in their daily lives.

### 11.3 Professional Development

The main objective of the Bachelor's Degree in Sports and Leisure Management at Kajaani University of Applied Sciences is to provide domestic and international students with a high quality education with both academic and practical knowledge from the field of sports. The students in the program are able to build their professional competence and practical and interpersonal skills with the help of a multi-disciplinary knowledge base. They will also have the opportunity to cooperate with various sorts of networks and groups. The topics included in the program are sports and exercise instruction, coaching and training as well as knowledge in business management and activity tourism. Practical experience of project management and organizing events is also included in the degree. The graduates with the bachelor in sports and leisure management can become employed in organizations such as sports and leisure associations, clubs and businesses, or government agencies related to the field. (KAMK 2018).

The aims of the thesis process and the developmental tasks followed the generic competences provided by Kajaani University of Applied Sciences, which include achieving working community and innovation competence. Working community competencies developed through the thesis were the ability to operate in communicative and interactive situations with working life, to utilize information and communications technology, to get more familiar with the actors in the field, to create personal contacts in working life and professional networks and to develop entrepreneurial skills. Innovation competencies learned were the ability to conduct research, develop and innovate projects by applying existing knowledge and methods of the field into practice, being capable of creative problem solving and development of working methods, and the ability to find customer-oriented, sustainable and profitable solutions. (KAMK 2017.)

The thesis provided the authors with an opportunity to implement their existing knowledge from previous studies and practical experience, which has an evident role in the Bachelor's degree in sports and leisure management. By creating the break exercises, the physiological knowledge of human body, training and movements was put into practice. The testing period gave an insight on what the personal coaching is in practice, and what are the key points to concentrate on. The thesis project also educated about communication in its various forms: with the participants of the testing group, the commissioning party, the supervisor of the thesis, tutor teacher, and lastly, between the two authors. It was also a good lecture about co-operation and dividing tasks between the authors. Receiving feedback from the activities that were designed into the handbook was educative, as it gave perspective about the reception of those ideas from different point of views. Receiving feedback from different sources and parties related to the process developed the ability to receive feedback, understand different visions, written texts and outputs more efficiently and use the knowledge to enhance the quality of the final outcome.

## 11.4 Future Development

In the future there could be experiments and researches set on a longer time period to test out the more concrete and numerical differences achieved through more active working days. This thesis project concentrated more on the production of a handbook than experimenting the possible changes in activity at the workplace. In the future researches the practical testing period could be the main focus of the project with longer coaching period, in order to gain more trustworthy results of the changes in the activity levels. Through the feedback received from the participants in the test group, the idea for a future development of a break exercise app came up.

Yet another possibility for future research about the subject could be a marketing plan to get customers, who are insufficiently active, to buy coaching services from Myötätuuli. When thinking about the world today and the distant future, electronic devices and various kinds of applications are becoming more and more evident for the use of professionals in different fields of practice, including health and sports, which could give this aspect potential for research. Communication between a trainer and a client will probably have a bigger shift towards online and electronic interaction in the near future, which also creates more opportunities for studies in this topic. One aspect to research could be the examination of these different technologies available for use and how to use them with clients in distant contact

## SOURCES

Alasilta Anja. (1999). *Näin kirjoitat tehokkaasti- Viestintäopas työelämän kirjoittajille*. Inforviestintä Oy. (29, 59, 70, 72, 85, 124-125).

Atkinson Michael. (2012). *Key Concepts in Sport & Exercise Research Methods*. SAGE Publications Ltd.

Conn Vicki S., Hafdahl Adam R., Cooper Pamela S., Brown Lori M., Lusk Sally L. (October 2009). *Meta-Analysis of Workplace Physical Activity Interventions*. American Journal of Preventive Medicine Volume 37, Issue 4. (330–339). Accessible at: [http://www.ajpmonline.org/article/S0749-3797\(09\)00413-9/fulltext](http://www.ajpmonline.org/article/S0749-3797(09)00413-9/fulltext). Retrieved December 7, 2017.

Cover Page Picture: <https://www.healthyfamiliesbc.ca/home/blog/stride-spin-or-skip-during-sneak-it-week>

Darren E.R. Warburton, Crystal Whitney Nicol and Shannon S.D. Bredin. (March 14, 2006). *Health benefits of physical activity: the evidence*. Cmaj.ca. Accessible at: <http://www.cmaj.ca/content/174/6/801.full>. Retrieved November 15, 2017.

Dishamn Rod K., Oldenburg Brian, O'Neal Heather, Shephard Roy J. (November 1998). *Worksite physical activity interventions*. American Journal of Preventive Medicine Volume 15, Issue 4. (344–361). Accessible at: [https://www.ajpmonline.org/article/S0749-3797\(98\)00077-4/abstract](https://www.ajpmonline.org/article/S0749-3797(98)00077-4/abstract). Retrieved May 8, 2018.

Fox K. R., Hillsdon M. (February 19, 2007). *Physical activity and obesity*. Obesity Reviews Vol. 8, Issue s1 March 2007, (115–121). Accessible at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-789X.2007.00329.x/full>. Retrieved December 7, 2017.

Hagger, Martin S.; Chatzisarantis, Nikos. (April 2014). *An Integrated Behavior Change Model for Physical Activity*. Exercise and Sport Sciences Reviews: April 2014 - Volume 42 - Issue 2. (62–69). Accessible at: [http://journals.lww.com/acsm-essr/Fulltext/2014/04000/An\\_Integrated\\_Behavior\\_Change\\_Model\\_for\\_Physical.4.aspx#R3-4](http://journals.lww.com/acsm-essr/Fulltext/2014/04000/An_Integrated_Behavior_Change_Model_for_Physical.4.aspx#R3-4). Retrieved December 7, 2017.



- Hagger Martin S., Chatzisarantis Nikos L.D. (2007). *Intrinsic Motivation and Self-Determination in Exercise and Sport*. Human Kinetics.
- Helsingin seudun kauppakamari / Helsingin Kamari Oy & Anne Villilä. (2016). *Tuotteista tähtituotteita*. Kauppakamari, 1. painos.
- Hirsjärvi Sirkka, Remes Pirkko, Sajavaara Paula. (2002). *Tutki ja kirjoita*. Tummavuoren kirjapaino Oy. (213).
- Howley Edward T. (2001). *Type of activity: resistance, aerobic and leisure versus occupational physical activity*. *Medicine & Science in Sports & Exercise* Vol. 33, No. 6, Suppl., 2001. (S364–S369). Accessible at: <https://static.sdu.dk/media-files/B/D/2/%7BBBD2DE2DB-CA91-4DCE-BE7D-E1A57CEECE7%7D13.pdf>. Retrieved December 6, 2017.
- Huhtamäki Lääketeollisuus Oy, 32. Lääkäripäivät UKK-Instituutti. (1988). *Liikunta ja Terveys*. Lääketehdas Leiraksen julkaisuja 44. (134).
- Hutchinson Amanda D., Wilson Carlene. (July 6, 2011). *Improving nutrition and physical activity in the workplace: a meta-analysis of intervention studies*. *Health Promotion International*, Volume 27, Issue 2, 1 June 2012, (238–249). Accessible at: <https://academic.oup.com/heapro/article/27/2/238/686897>. Retrieved December 7th, 2017.
- J6 design. (2015). *Setting Smart Goals*. <http://www.j6design.com.au/setting-smart-goals/>. J6design.com.au. Retrieved May 1, 2108.
- Jämsä Kaisa, Manninen Elisa. (2000). *Osaamisen tuotteistaminen sosiaali- ja terveysalalla*. Kustannusosakeyhtiö Tammi. (28-31, 35-39, 43-50, 54-57, 80-81).
- Kajaani University of Applied Sciences. (2018). *Bachelor's Degree in Sports and Leisure Management*. Kamk.fi. Accessible at: <https://www.kamk.fi/en/Applying/Studies-Taught-in-English/Bachelors-Degree-in-Sports-and-Leisure-Management>. Retrieved February 15, 2018.

Kajaani University of Applied Sciences. (2017). *Bachelor's Degree in Sports and Leisure Management Study Guide*. Kamk.fi. Accessible at: <http://opinto-opas.kamk.fi/index.php/en/68146/en/68090>. Retrieved December 20, 2017.

Kajaani University of Applied Sciences. *Hyvinvointipalvelut Myötätuulessa*. (2018). Accessible at: <https://www.kamk.fi/fi/Palvelut-tyoelamalle/Hyvinvointipalvelut-Myotatulessa>. Retrieved February 13, 2018.

Karppi S-L., Aunola S., Hinkka K., Lahtela K., Lind J., Mattlar C-E., Pekkarinen M., Puukka P., Tamminen T. (1994). *The effectiveness of two physical activity based intervention programmes for female office workers with neck-shoulder symptoms*. Turk: Publications of the Social Insurance Institution, Finland, ML: 130. (122).

Kettunen Riikka, Ruotsalainen Hanna-Mari, Tölli Leena. (2010). *KESTÄVYYTTÄ, KIINTEYTTÄ JA LIHASTA: Oppaat työikäisen aloittelijan kuntosaliharjoitteluun*. Theseus. Accessible at: [http://www.theseus.fi/bitstream/handle/10024/24433/Kettunen\\_Riikka%20Ruotsalainen\\_Hanna-Mari%20Tolli\\_Leena.pdf?sequence=1&isAllowed=y](http://www.theseus.fi/bitstream/handle/10024/24433/Kettunen_Riikka%20Ruotsalainen_Hanna-Mari%20Tolli_Leena.pdf?sequence=1&isAllowed=y). Retrieved October 11, 2017.

Kiiskinen Krista. (2018). *Taukoliikunnan vaikuttavuus varastotyöntekijöiden lihastapainoon sekä alaselän ja niska-hartiaseudun kipuoireiluun liikuntaintervention aikana*. Theseus. P. 31. Accessible at: [http://www.theseus.fi/bitstream/handle/10024/141407/Kiiskinen\\_Krista.pdf;jsessionid=04213053B3ED1B0C3E494C4704BDDF17?sequence=1](http://www.theseus.fi/bitstream/handle/10024/141407/Kiiskinen_Krista.pdf;jsessionid=04213053B3ED1B0C3E494C4704BDDF17?sequence=1). Retrieved April 5, 2018.

Kilpijärvi Riikka, Tikka Salla. (2016). *Ravitsemusneuvontaopas painonhallintaryhmän ohjaajalle*. Theseus. Accessible at: <http://www.theseus.fi/bitstream/handle/10024/114082/Ravitsemusneuvontaopas%20painonhallintaryhman%20ohjaajalle%20-%20Riikka%20Kilpijarvi%20ja%20Salla%20Tikka%20KAMK.pdf?sequence=1&isAllowed=y>. Retrieved October 8, 2017.

Loiri Pekka, Juholin Elisa. (1998). *HUOM! Visuaalisen viestinnän käsikirja*. Inforviestintä Oy. (33, 52-53, 70, 111).

Margaret Cargill and Patrick O'Connor. (2009). *Writing Scientific Research Articles*. Wiley-Blackwell Publication.

Martínez-González MÁ, Martínez J. Alfredo, Hu FB, Gibney MJ, Kearney J. (1999). *Physical inactivity, sedentary lifestyle and obesity in the European Union*. International Journal of Obesity (1999) 23. (1192-1201). Accessible at: <https://www.nature.com/articles/0801049.pdf>. Retrieved February 2, 2018.

Markko Laura, Pukkila Henna. (2016). *Effects of a Three-Week Exercise Intervention on Kajaani Canorama Employees' Leisure- Time Physical Activity and Well-Being*. Theseus. Accessible at: [http://www.theseus.fi/bitstream/handle/10024/114789/Markko\\_Laura\\_Pukkila\\_Henna.pdf?sequence=1&isAllowed=y](http://www.theseus.fi/bitstream/handle/10024/114789/Markko_Laura_Pukkila_Henna.pdf?sequence=1&isAllowed=y). Retrieved May 8, 2018.

Merchant J., Griffin B.L., Charnock A. (2007). *Sport and Physical Activity, the Role of Health Promotion*. Palgrave Macmillan.

Miettinen Meiju. (2012). *Effect of Physical Activity and Nutrition on Body Composition*. Theseus. Accessible at: [http://www.theseus.fi/bitstream/handle/10024/47494/Miettinen\\_Meiju.pdf?sequence=1&isAllowed=y](http://www.theseus.fi/bitstream/handle/10024/47494/Miettinen_Meiju.pdf?sequence=1&isAllowed=y). Retrieved May 8, 2018.

Miriam Reiner, Christina Niermann, Darko Jekauc, Alexander Woll. (September 8, 2013). *Long-term health benefits of physical activity – a systematic review of longitudinal studies*. BMC Public Health 2013. Accessible at: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/1471-2458-13-813>. Retrieved November 15, 2017.

Moore Steven C., Patel Alpa V., Matthews Charles E., Berrington de Gonzalez Amy, Park Yikyung, Katki Hormuzd A., Linet Martha S., Weiderpass Elisabete, Helzlsouer Kathy J., Thun Michael, Gapstur Susan M., Hartge Patricia, Lee I-Min. (November 6, 2012). *Leisure Time Physical Activity of Moderate to Vigorous Intensity and Mortality: A Large Pooled Cohort Analysis*. Plos Medicine. Accessible at: <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001335>. Retrieved December 8, 2017.

Morrison, M. (June 22, 2010). *History of SMART objectives. Rapid Business Improvement*. Accessible at: <http://rapidbi.com/management/history-of-smart-objectives/>. Retrieved April 28, 2018.

Niemi Terttu, Nietosvuori Leena, Virikko Helena. (2006). *Hyvinvointialan viestintä*. Edita Prima. (15-16, 192-195).

Nieminen Katariina, Rossinen Joni. (2010). *JUOKSUAIKA! - harjoitteita puolimaratonille Harjoitusohjelmaoppaan tuotteistus*. Theseus. Accessible at: [http://www.theseus.fi/bitstream/handle/10024/24421/Nieminen\\_Katariina.pdf?sequence=1&isAllowed=y](http://www.theseus.fi/bitstream/handle/10024/24421/Nieminen_Katariina.pdf?sequence=1&isAllowed=y). Retrieved October 10, 2017.

Närhi Ani, Frantsi Päivi. (1998). *Psyykinen valmennus- järkeä ja sydäntä*. Helsingissä Kustannusosakeyhtiö Otava. (34-35, 55-56, 60-61).

OECD Data. (2018). *Working Age Population*. OECD. Accessible at: <https://data.oecd.org/pop/working-age-population.htm>. Retrieved February 13, 2018.

Ojanen Markku, Svennevig Hanna, Nyman Markku, Halme Jukka. (2001). *Liiku oikein - voi hyvin, Liikunnan merkitys hyvinvoinnille*. Tammer-Paino Oy.

Ojasalo Katri, Moilanen Teemu, Ritalahti Jarmo. (2014). *Kehittämistyön menetelmät- Uudenlaista osaamista liiketoimintaan*. Sanoma Pro Oy. (23-26, 106).

Pate Russell R., O'Neill Jennifer R., Lobelo Felipe. (October 2008). *The Evolving Definition of "Sedentary"*. Exercise and Sport Sciences Reviews: October 2008 - Volume 36 - Issue 4. (173-178). Accessible at: [http://journals.lww.com/acsm-essr/Fulltext/2008/10000/The\\_Evolving\\_Definition\\_of\\_\\_Sedentary\\_.2.aspx](http://journals.lww.com/acsm-essr/Fulltext/2008/10000/The_Evolving_Definition_of__Sedentary_.2.aspx). Retrieved December 7, 2017.

Penedo Frank J., Dahn Jason R. (March 2005). *Exercise and well-being: a review of mental and physical health benefits associated with physical activity*. Current Opinion in Psychiatry Volume 18 - Issue 2. p 189–193. Accessible at: [https://journals.lww.com/co-psychiatry/Abstract/2005/03000/Exercise\\_and\\_well\\_being\\_a\\_review\\_of\\_mental\\_and.13.aspx](https://journals.lww.com/co-psychiatry/Abstract/2005/03000/Exercise_and_well_being_a_review_of_mental_and.13.aspx). Retrieved May 8, 2018.

- Pesola Arto. (2015). *Luomuliikunnan Työkirja- Istu vähemmän ja ole aktiivinen arjessa*. Fitra Oy.
- Pesola Arto. (2013). *Luomuliikunnan vallankumous- Sohvan pohjalta taisteluvoitton!* Fitra Oy.
- Ransdell Lynda B., Dinger Mary K., Huberty Jennifer, Miller Kim H. (2009). *Developing Effective Physical Activity Programs*. Human Kinetics. (4, 8-11, 17-19).
- Rapid Business Improvement (May 2, 2016). *Write SMART objectives & Goals – Criteria*. Rapidbi.com. Accessible at: <https://rapidbi.com/writesmartobjectives/>. Retrieved April 15th, 2018.
- Rauramo Päivi. (2012). *Työhyvinvoinnin portaat työkirja*. Työturvallisuuskeskus TTK. (1-4).
- Sipilä Jorma. (1995). *EKONOMIA- Asiantuntijapalveluiden tuotteistaminen*. WSOY. (72).
- The Finnish Olympic Committee. (September 27, 2017). *Henkilöstöliikunnalla vahva asema – suunnittelemattomuus yllättää*. Suomenaktiivisintyopaikka.fi. Accessible at: <https://suomenaktiivisintyopaikka.fi/henkilostoliikunnalla-vahva-asema-suunnittelemattomuus-yllattaa/>. Retrieved December 6, 2017.
- The World Health Organization. (2010). *Global Recommendations on Physical Activity for Health*. WHO. Accessible at: [http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/44399/1/9789241599979_eng.pdf). Retrieved November 20th, 2017.
- The World Health Organization. (February 2017). *Physical Activity Fact Sheet*. Who.int. Accessible at: <http://www.who.int/mediacentre/factsheets/fs385/en>. Retrieved November 20, 2017.
- Toikkanen Rita. (2003). *Tyylikäs julkaisu- Painotyön ja verkkosivujen suunnittelu ja toteutus*. Edita Publishing Oy. (43-44).

Trost Stewart G., Neville Owen, Bauman Adrian E., Sallis James F., Brown Wendy. (April 5, 2016). *Correlates of adults' participation in physical activity: review and update*. Science in Sports & Exercise Vol. 34, No. 12. (1996–2001, 2002). Accessible at: [https://www.researchgate.net/profile/Stewart\\_Trost/publication/11001088\\_Correlates\\_of\\_adults'\\_participation\\_in\\_physical\\_activity\\_Review\\_and\\_update/links/57031b3808aea09bb1a3089f/Correlates-of-adults-participation-in-physical-activity-Review-and-update.pdf](https://www.researchgate.net/profile/Stewart_Trost/publication/11001088_Correlates_of_adults'_participation_in_physical_activity_Review_and_update/links/57031b3808aea09bb1a3089f/Correlates-of-adults-participation-in-physical-activity-Review-and-update.pdf). Retrieved December 6, 2017.

Työterveyslaitos. (2001). *Työfysioterapia Yhteistyötä työ-ja toimintakyvyn hyväksi*. Helsinki: Vammalan kirjapaino Oy.

Työterveyslaitos. (May 9, 2018). *Työhyvinvointi*. TTL. Accessible at: <https://www.ttl.fi/tyoyhteiso/tyohyvinvointi/>. Retrieved May 9, 2018.

UKK Institute. (2009). *Physical Activity Pie*. UKK- Instituutti. Accessible at: [http://www.ukkinstituutti.fi/en/products/physical\\_activity\\_pie](http://www.ukkinstituutti.fi/en/products/physical_activity_pie). Retrieved December 7, 2017.

University of Richmond. (2018). *Writing Center, Writing and ethics*. University of Richmond. Accessible at: <http://writing2.richmond.edu/writing/wweb/english/ethics.html>. Retrieved January 25, 2018.

Varo José J., Martínez-González Miguel A., de Irala-Estévez Jokin, Kearney John, Gibney Michael, Martínéz J. Alfredo. (February 1, 2003). *Distribution and determinants of sedentary lifestyles in the European Union*. International Journal of Epidemiology, Vol. 32, Issue 1, 1 February 2003. (138–146). Accessible at: <https://academic.oup.com/ije/article/32/1/138/642829>. Retrieved December 7, 2017.

Vilkkä Hanna, Airaksinen Tiina. (2003). *Toiminnallinen opinnäytetyö*. Kustannusosakeyhtiö Tammi. (51-53).

Virolainen Harri. (2012). *Kokonaisvaltainen työhyvinvointi*. BoD- Books on Demand, Helsinki, Suomi. (11-12).

Välimaa Veikko, Kankkunen Martti, Lagerroos Olle, Lehtinen Markku. (1994). *TUOTEKEHITYS- Asiakastarpeesta tuotteeksi*. Painatuskeskus Oy. (70-71).

Vänskä Kirsti, Laitinen-Väänänen Sirpa, Kettunen Tarja, Mäkelä Juha. (2011). *Onnistuuko ohjaus? Sosiaali- ja terveysalan ohjaustyössä kehittyminen*. Edita Prima. (16).

Westerterp Klaas R., Meijer Gerwin A. L., Janssen Eugene M. E., Saris Wim H. M., Ten Hoor Foppe. (August 1, 1991). *Long-term effect of physical activity on energy balance and body Composition*. *British Journal of Nutrition* (1992). (68, 21, 30). Accessible at: [https://www.cambridge.org/core/services/aop-cambridge-core/content/view/A8AD9B8DE47A902E72918E068D20BD18/S0007114592000643a.pdf/longterm\\_effect\\_of\\_physical\\_activity\\_on\\_energy\\_balance\\_and\\_body\\_composition.pdf](https://www.cambridge.org/core/services/aop-cambridge-core/content/view/A8AD9B8DE47A902E72918E068D20BD18/S0007114592000643a.pdf/longterm_effect_of_physical_activity_on_energy_balance_and_body_composition.pdf). Retrieved December 7, 2017.

APPENDICES



*Aktiivisuutta arkeen- testiryhmä:* **Taustakysymykset**

Millaista työtä teet?

Milloin tulet töihin ja lähdet töistä?

Millainen työasentosi on yleensä päivän mittaan? Onko suuri osa istualta tehtävää työtä päivässä?

Oletko töissä samassa paikassa koko päivän ajan, vai vaihtuuko työpisteesi päivän aikana?

Missä syöt yleensä lounaan? (esim. samassa rakennuksessa kuin työpiste/ulkona kävelymatkan päässä/työpisteen äärellä)

Onko sinulla mahdollisuus pitää pieniä taukoja työpäivän aikana?

Kuinka monta taukoa yleensä pidät päivän aikana?

Miten kuljet töihin?

Tunnetko väsymystä päivän aikana? Jos, niin missä vaiheessa päivää ja kuinka usein?

Tunnetko olevasi stressaantunut tai ahdistunut? Liittykö tunne työtehtäviisi?

Mikä sinua motivoi lisäämään aktiivisuutta työpäivääsi?

**Kiitos vastaamisesta! Lähetäthän kyselyn täytettynä sähköpostiin!**



*Aktiivisuutta arkeen- testiryhmä:*

## Työpäivän Seisomis- ja Istumispäiväkirja & Askelten Mittaus

| <b>Päivämäärä</b> | <b>Istuttu aika (h)</b> | <b>Seisottu aika (h)</b> | <b>Askeleet työpäivän päätteeksi</b> |
|-------------------|-------------------------|--------------------------|--------------------------------------|
| Maanantai 16.4.   |                         |                          |                                      |
| Tiistai 17.4.     |                         |                          |                                      |
| Keskiviikko 18.4. |                         |                          |                                      |
| Torstai 19.4.     |                         |                          |                                      |
| Perjantai 20.4.   |                         |                          |                                      |

| <b>Päivämäärä</b> | <b>Istuttu aika (h)</b> | <b>Seisottu aika (h)</b> | <b>Askeleet työpäivän päätteeksi</b> |
|-------------------|-------------------------|--------------------------|--------------------------------------|
| Maanantai 23.4.   |                         |                          |                                      |
| Tiistai 24.4.     |                         |                          |                                      |
| Keskiviikko 25.4. |                         |                          |                                      |
| Torstai 26.4.     |                         |                          |                                      |
| Perjantai 27.4.   |                         |                          |                                      |

*Aktiivisuutta arkeen- testiryhmä:* **Palautekysymykset**

Millaisia muutoksia teit päivittäiseen työpäivääsi?

Mitä mieltä olit saamistasi vinkeistä/ideoista?

Mitkä olivat tilanteeseesi epäsopivia ja miksi?

Millaisia harjoitteita teit työpäivän aikana?

Kuinka usein pystyit tekemään taukojumppaa/harjoitteita (päivittäin/kertoja viikossa)?

Tunsitko mitään muutosta energiatasoissa päivän aikana?

Vähienkö istuminen tai samassa asennossa työskentely, miten?

Miten kuljit töihin?

Tuleeko mieleen muita kommentteja tai ajatuksia testausjaksosta ja sen sisällöstä?