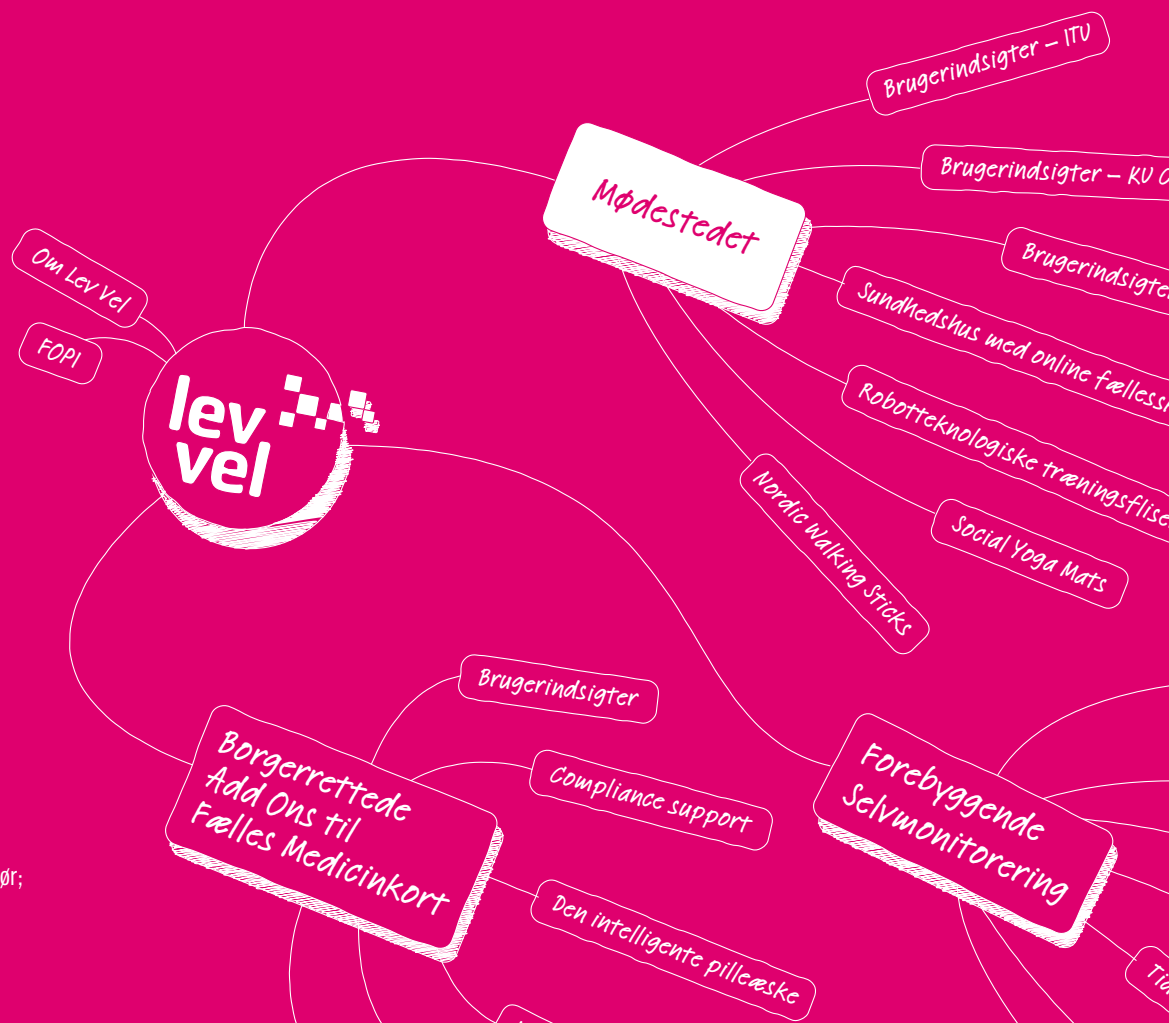


NORDIC WALKING STICKS



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The prototype Nordic Walking Sticks is a manifestation of our larger design concept: reinforcing the synergistic relationship between exercising and socializing over time and place through digital technology.

From literature studies and our field experiences regarding physical exercise activities, we observe that participating in a group exercise provides physical health benefits and also help improve social life. Performing in a group enhances sense of belonging to community, provide opportunity for socialization and introduce various social elements. In turn, these social aspects of exercising further increase motivation to perform exercise and do it regularly. Thus group exercise activities tend to create synergistic effect between exercising and socializing, and our interest is to design digital technology that reinforce this synergy over time and place.

Nordic walking is one of the popular exercise activities among older adults and is performed with specially designed thin, long, lightweight poles. Typically seniors meet in voluntarily organized groups on a weekly basis and at a predefined place to perform Nordic walking exercise. Apart from the physical exercise part, Nordic walking offers plenty of opportunities for conversation, socialization and hence seniors see it as a very social activity. With our design exploration of Nordic Walking Sticks we aim to extend this socialization aspects into the homes of users and strengthen the synergistic effect of exercising / socializing.

The central idea behind Nordic Walking Sticks is that they enable users to carry digital content with them into the walking class and share it with other participants from the class, while exercising. Current prototype includes augmented walking poles that allow user to store, share and exchange sound clips with other participants during the walking class. The poles are complimented by a software application that allow users to download variety of sound content such as news clips, piece of music etc into the poles as well as upload content from the poles to a computer. The poles also have sensors to capture various performance data of the exercise and the data can later be viewed with the software application.

By design, Nordic Walking Sticks facilitate users to prepare themselves for the class by carrying variety of content into the poles, to actually share the content with others while performing the exercise and look back at the experiences of the class through the software application.

The target groups are senior citizens who desire to keep themselves physically and socially active, and are part of weekly exercise classes.

During the design exploration, early on we engaged the users in the design process and conducted a series of workshop sessions with them that comprised of interactive hardware and software sketches. In parallel, we conducted a literature study related to aging and importance of physical / social life for seniors.

We outline some of the important insights from the user interaction sessions and the literature studies as below:

1. BUILD ON EXERCISING / SOCIALIZING SYNERGY

During the exploration of Nordic Walking Sticks, we noticed that seniors enjoy the various physical benefits provided by Nordic walking exercise such as full body exercise, back strengthening etc. Moreover the socialization opportunities such as talking and sharing etc during exercising, makes Nordic walking more attractive for senior citizens. Many of the participants have become good friends over time and make it a point to attend the class together. Such strong social elements motivate seniors to attend the class regularly and participate actively in the class. In this way, exercising/ socializing motivations support each other and create a synergistic effect, which offer larger benefits than the individual activities. With our design of Social Walking Poles, we further build upon the stronger social aspects of Nordic walking and extend these social benefits outside the class.

MØDESTEDET

Formålet med projektet er at udvikle nye typer af mødesteder for selvhjulpne ældre. Mødesteder, der vil virke tiltrækkende og motiverende, fordi de øger både den mentale og fysiske fitness gennem en kombination af leg, oplevelse, træning og samvær.

Læs mere om Mødestedet i Lev Vel bogen i kapitel 2

2. SUPPORT RANGE OF SOCIAL RELATIONSHIPS

We observed that participants from Nordic walking class had varied levels of social relationships with their respective group members - from being close friends to being unfamiliar. Some of the participants stated that during the walking they tend to stick by close ones and may interact less with lesser-known participants. Shared audio space enabled through Nordic Walking Sticks brings all members on the same footing, so that any member can share her audio content while rest all members can listen to the audio at the same time.

3. TIME AND SPACE DIMENSION OF THE ACTIVITY

With the possibility to carry sound clips into the pole, Nordic Walking Sticks design tries to extend the social aspects of the class in to the user's home and in time. At home, the users may think about different audio content that they can possibly share with other participants in the upcoming walking class. During the class they can share the audio material with others, which may trigger discussions around related topics. After the class, with the help of the software application users may look back at what happened during the class and whom they shared content with. They can relive the experience of the class any time in future. In this way Nordic Walking Sticks provide stronger time dimension for extending synergy into the lives of Nordic walkers.

4. SUPPORTING LIFECYCLE OF THE EXERCISE ACTIVITY

We observe that the interaction between par-

ticipants of a Nordic walking class is mostly limited to the duration of the class, hence limiting both the social/ physical benefits to the class duration. With our concept we aim to extend this synergy outside the class and over time and place, hence its important to consider transitions between the home and the class as well as the different phases of the activity such as preparing for the class at home- doing the exercise in the class – looking back at what happened during the class. The Augmented poles together with the software application enable users to prepare for the class by choosing and downloading various audio content to their poles, as well as checking one's history of exercise performance. At the class, users can play, share and exchange the audio files with each other. Back at home; users can re-live the experience of the class by looking at who were present in the class, who shared what sound clips etc.

During the workshop sessions, a few participants could imagine possible scenarios where they can bring audio files relevant to the discussions that took place in the previous class and continue the discussions effectively.

5. NON-STIGMATIZING EFFECTS OF TECHNOLOGY

We noticed that Nordic walking is mostly regarded as the activity for senior citizens, an activity that is generally perceived as 'un-cool'. Especially the poles are considered to be more of a support for walking than an instrument to exercise. Hence some seniors commented that integrating technology into

the poles may alleviate stigmatizing effects associated with the poles and make Nordic walking appear more attractive.

6. EXERCISE EQUIPMENT AS HUMAN – HUMAN- COMPUTER INTERFACE

Our design of Nordic Walking Sticks demonstrates that exercise equipment such as the Nordic Walking Sticks can create possibilities to enhance the social experience within and outside the class and thus play a bigger role than facilitating the physical exercise alone. It becomes a useful resource available to users through which they can negotiate and go about performing interactions with other users. For example, in this case Nordic poles allow users to configure their own groups based on their own preferences and facilitate playing various audio content to other users etc.

NORDIC WALKING STICKS MOTIVATION

The key motivation behind the central concept has been to look at group exercise activities as meeting point for exercising and socializing, and moreover to take advantage of the synergistic relationship between these two through digital technology.

Central to the design of Nordic Walking Sticks is the notion of virtual mobile space for social sharing, enabled through augmented walking poles. The key idea is that participants will be able to bring various digital content with them such as sound, text, images, performance data etc with help of the augmented poles and further be able to share it with the other class members. Such a sharing of the digital materials with

the others participants not only will help enhance the quality of social interaction during the exercise class but will also create opportunities for strengthening the social ties outside the class – over different phases of Nordic walking activity such as preparing for the class, exercising during the class and looking back after the class.

During the initial iterations, we experimented mainly with sharing audio contents through poles while walking in the class. When a user plays a sound file from his pole using thumb controls, the other members in the class can hear the sound at the same time, thus facilitating what we call shared audio space. Current prototype mainly explores how this shared audio space can inspire users to imagine different audio contents such as news clips, jokes, quotes, piece of music etc for bringing into the class and how it opens up new possibilities for social interaction around this content.

Physical fitness and an active social life are among two of the important needs for healthy aging. Nordic Walking Sticks help strengthen social dynamics of an existing group of seniors, surrounding their physical activity of Nordic walking, through social sharing of digital materials during and also outside the class. While the augmented poles provide support for monitoring one's health progress. In this way, Nordic Walking Sticks provide physical and social benefits to seniors, and motivate them to attend the class on a regular basis and enjoy the social aspects of the class.

Further, we imagine Nordic Walking Sticks can help seniors experiencing social

isolation by extending the social aspects outside the class and providing them opportunities to interact with other members from the class, thus alleviating the effects of isolation.

NORDIC WALKING STICKS MAY BENEFITS SENIORS IN SEVERAL WAYS.

1. First, the poles are embedded with sensors that record the exercise performance data such as walking distance, speed, heart rate etc. which together can help seniors monitor their own health progress.
2. Nordic Walking Sticks allow users to bring and share sound clips with other class members through shared audio space and we speculate that this will enhance quality of existing discussions that takes place during the class. Such sharing of material can open up new possibilities for social interaction and strengthen social ties with the class members.
3. Nordic Walking Sticks takes into consideration user's transition between home and weekly exercise class, and support social aspects of the walking class through the different stages of activity life cycle such as preparing for the class, exercising and looking back at the class. Which, we speculate, effects in extending social aspects outside the class and participants can experience being connected with the group even without being physically present.

VALUABLE FEEDBACK

We began our investigation by observing and interviewing two groups of seniors engaged

in Nordic walking activity. In parallel we developed the hardware sketches for Social walking poles. We conducted two workshop sessions with users with a total of eight participants between the ages 60 to 72 years. The workshop session included a demonstration of the interactive hardware sketch with active user participation, followed by guided discussions and an interview session.

Throughout these sessions, the main focus was on stimulating imaginations of the participants and collecting qualitative feedbacks, rather than evaluating the usability aspects of the specific design

During the workshop sessions with users we received mixed response from the participants and their inputs so far, will help in designing future iterations of the prototype. Some of the major comments are outlined as below:

1. Most of the participants appreciated the feature of recording and monitoring of health exercise data and thought of it as a useful feature. They desired if there could be an audio training program to support the exercise part during walking. In future iterations we would like to expand on this feature.
2. In overall, users thought of sharing sound clips using Nordic walking poles as an interesting idea, however they felt it was perhaps not appropriate for their age and could be more suitable for a younger and techno savvy audience. In future, we would like to experiment with younger audience. Also we wish to experiment with other forms of digital content than

audio and study how does it influence social sharing among seniors.

3. As far the shared audio space, few participants commented, it could be helpful in maintaining the flow of the discussions that takes places during walking. For eg. Participants could bring some sound clips related to the discussions from the previous class and share those with others during the next class. Whereas another participant commented it could be nice to have a recording facility on the pole to record the discussions from the class or simply set voice reminders during and after the class.
4. Among the other major comments, participants repeatedly admitted that they like the nature aspects experienced during Nordic walking such as the natural surrounding, flora and fauna etc and it forms important part of their experience during walking. Some participants wished if the poles could help them provide information about surrounding elements such as particular plants etc, whereas one other participant thought it could be interesting if poles could allow user to take pictures of surroundings .Few other participants saw listening to audio as a hindrance to their nature experience but they were interested if the information could be of about the surrounding nature.

We consider this as an important aspect and shall incorporate features to support the natural aspects in our future iterations.

FLEXIBLE DESIGN

The design of Nordic Walking Sticks is flexible enough in terms implementation and usage. For example, it can be thought of as new generation of walking poles designed by the Nordic walking poles manufacturers, in order to make the Nordic walking exercise more attractive. The poles would be complimented by free online service to support users to download and upload digital content such as sound clips, exercise performance data etc from the pole. Such a service would also provide social networks with existing walking class members as well as other Nordic walking groups.

Further the concept can possibly be extended to other exercise activities where exercise objects can become means to share digital content in a social setting.

A SAMPLE USE SCENARIO COULD LOOK LIKE AS BELOW

Birgit and her friend Ditte are members of Orested Nordic walking group and meet every Sunday to perform 2 hour group walking exercise using newly launched Social Walking Poles. When at home Birgit decides to download sound clips of some of her favorite songs, whereas Ditte selects some interesting news articles and converts them into sound clips using the software application that came along with the poles. When both of them meet for the weekly walking class, they share their respective sound clips with all other class members and enjoy the discussions triggered by the sound clips. Some other members copy these materials from the Birgit and Ditte's poles by bumping their poles together. Back at home, Birgit connects her pole to her

computer and can get a overview of what happened in the today's class. She can view information like who were present in the class, who shared what sounds clips etc and can re-live the experience of the class. She can also view exercise performance data such as walking distance, speed, heart rate etc.about her performance as well as her group's and is motivated to do her exercise more regularly. Later that week Birgit and Ditte call each other and talk about the sound clips they shared during the class and later exchange links to know more about the singers and the news respectively.

This way Nordic Walking Sticks help extend the social aspects of the Nordic walking exercise and reinforce synergy effects between exercising and socializing.

FAKTA

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