



Human Computer Interaction Principles (IC1007)

Assignment 3: Gymification

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Introduction

This document reports the usability evaluation made on the design of Gymification, an application to assist personal trainers by tracking their clients' progress. The application makes use of aspects of gamification (*"the use of game mechanics and experience design to digitally engage and motivate people to achieve their goals"*, Gartner), as well as visualization techniques to display the evolution of clients through time.

This document describes how the prototype was evaluated in order to verify if the design fulfills the needs of personal trainers. The prototype used for this test was made with PowerPoint and it is a hi-fi prototype. First, the test plan is presented, then, the methodology and afterwards the changes that were made to the design during the test. In the end of the report we make a reflection on the process and we present our recommendations to the design team.

Test Plan

The prototype evaluated was a hi-fi prototype, however, the design team has also made lo-fi paper prototypes (*Rettig*) to illustrate their ideas to the team. In order to evaluate the current design, we asked the personal trainers to perform the following tasks:

Task 1

1. Cindy Johansson is your client who wants to prepare for a marathon.
2. Currently Cindy runs 5 km.
3. After consulting with her, you agreed to add a long-term goal for her to run 12 km.
4. Please add this new long-term goal.

Task 2

1. Cindy has been training really well.
2. Today she managed to run 6 km.

3. Increase her progress to 6 km on the long term goal scale.

Task 3

1. Cindy has finally tried that new smoothie, therefore, she has now completed a personal goal!
2. Please mark this personal goal as completed.

Task 4

1. Cindy also wants to be able to do 50 pushups as a personal goal of hers.
2. Cindy should achieve this goal before the 24th of November.
3. Please add this new personal goal under the hard category.

Task 5

1. There are some additional features that will be implemented in the future.
2. One of these features is visualizing the progress of the client.
3. Please try to open the menu tab for Progress.

During the tests, the roles of “greeter”, “facilitator” and “observer” have to be divided over the evaluators. Depending on the amount of evaluators available, the roles of the greeter and the facilitator shall be given to the same person. See the section “Methodology” below for an overview of the division of the roles.

For all sessions, the schedule was as follows:

1. The subject is welcomed and put at ease. He is informed about the background history of the project and the goal of the test. The greeter makes sure to mention it is the prototype that is being tested and not the subjects’ performance.

2. The subject is given a piece of paper with their tasks on it and is told to execute these tasks in order as best as they can. In the meantime, the facilitator tries to extract some thoughts from the subject without influencing or bothering them in any way. While the user is going through the tasks, the observers write down anything they notice - even if it might seem unnecessary at the time.
3. When the user finishes,, the facilitator debriefs the subject. When all the information and feedback is collected, the facilitator thanks the subject for his help and participation.

Methodology

This section describes the actual tests as they were performed.

Role division

The tests were done over the course of two days. On the first day, three members of the team went to KTH Hallen and tested the prototype with three subjects. Each member had the following roles: Daniel Meusbürger was both the greeter and the facilitator and Joakim Gunnari and Jente Hidskes were the observers. The roles were split this way because it is useful to have more than one person taking notes, considering different people notice different aspects. Also, combining the roles of greeter and facilitator does not undermine the test's validity.

On the second day, two members went to SATS Odenplan and to Fitness24Seven where they tested two personal trainers. At SATS, Giovanna Vilaza was the observer while Daniel Delgado was the greeter and the facilitator. These roles were reversed at Fitness24Seven, to give each member the opportunity to perform both roles and because these roles can be exhausting.

Experimental Setting

All tests were performed on-site at different gyms in Stockholm. As said, the first day of testing took place at KTH Hallen. Here, the staff appointed us a table, on which the experiment was set up (see Figure 1). One side of the table

seated the observers, whilst the other side seated the greeter/facilitator and the test subject.



Figure 1: The experimental setup at KTH Hallen

The second day of testing took place at SATS and Fitness24Seven. At SATS, the staff again appointed us a table to perform the experiment at (see Figure 2 for an impression). At Fitness24Seven, the test took place on the counter at the entrance (see Figure 3).

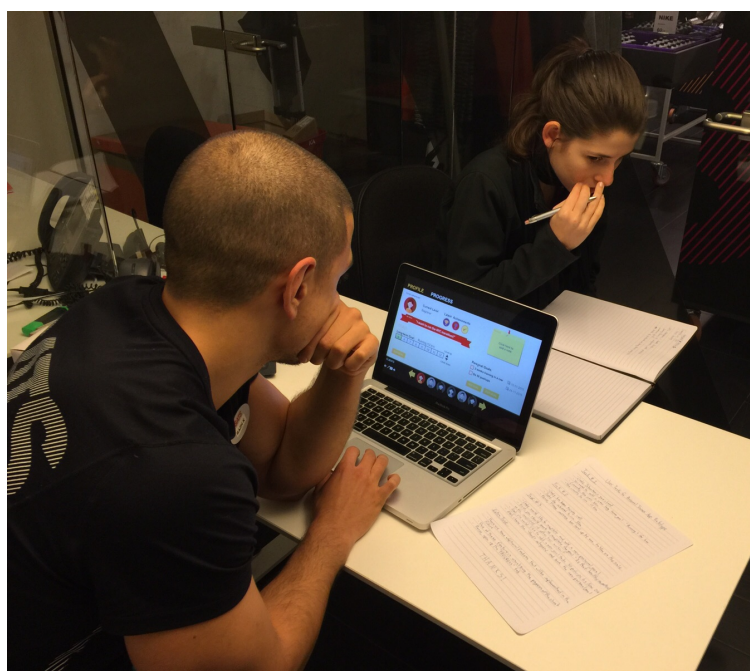


Figure 2: The experimental setup at SATS



Figure 3: The experimental setup at Fitness24Seven

Materials

The prototype is implemented using Microsoft Powerpoint, version 2011. It consists of a sequence of slides that when put together in a presentation give the subject the sensation of interacting with a real system, even though no such functionality is implemented yet. However, there are several constraints as to where the subject is allowed to click: given that the test is aimed at evaluating just a subset of functions; navigation should be constrained as to not make the user go too far off-track. This PowerPoint presentation was displayed on a Microsoft Surface tablet (running Windows RT) on the first day and on a Macbook Pro laptop (running OS X El Capitan) on the second day of testing. Preferably, a tablet would have been used during the second day as well, considering the target platform of this application is a tablet. However, no tablet was available.

Tasks

Instead of having just one detailed task, the test subjects had to execute several smaller tasks. The tests were set up this way for it not to overwhelm the test subjects and because previous tests have proven it is easier to receive feedback this way: having several different types of progress indicators available helps personal trainers keep their clients focused and motivated to continue their training. Executing several tasks makes it much easier for the

personal trainers to experience the scope of different indicators, which in turn enables them to give more direct feedback.

Subjects

As mentioned before, all test subjects are personal trainers from a variety of gyms around the Stockholm area. The first personal trainer at KTH Hallen is Markus. He has several certifications and specializes in optimum muscle growth, increased fat burning and corrective exercise.

The second personal trainer at KTH Hallen is the assistant behind the counter. Because all other personal trainers at KTH Hallen were either occupied or not interested, a compromise had to be made. Emil works with personal trainers and is used to the environment and can therefore act as a good replacement for a 'real' personal trainer.

The personal trainer at SATS is Razh, a young male, born in Iraq but raised in Sweden. He has just finished his exam in June 2015 and has been working as a personal trainer at SATS Odenplan for about a month.

The personal trainer at Fitness24Seven trainer is Kamilla, a young female, born and raised in Sweden. She has one year of experience as a personal trainer and her specialisations are pilates, dancing, nutrition and working with visually impaired clients.

Changes to the design

During the tests of iteration 1 and 2, several limitations were identified in the prototype. Therefore, in order to maximize the effects of this evaluation, small changes were implemented by the evaluation team before conducting the second iteration. Furthermore, the main results will be discussed in section "Recommendations to the Design team". This section serves to provide an overview of the defects and improvement suggestions that were detected, together with their corrections. Each defect is first explained shortly after which, in case applicable, a picture is shown to illustrate the corrections. While not focused on usability improvements, we also add suggestions for extension

raised by the test subjects. Some of the following suggestions and observations serve as possible implementations and may not be tested with real users.

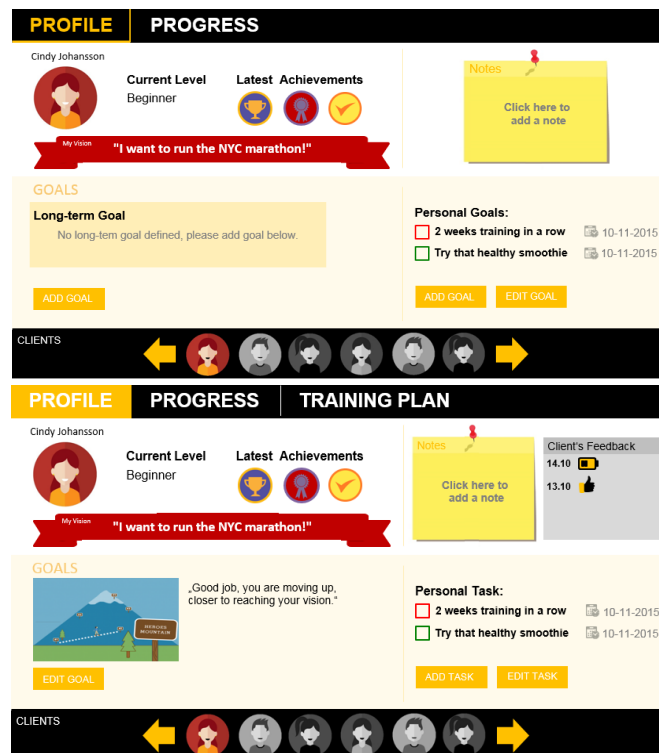


Figure 4: Showing the screen before iteration 1 and after with small corrections for further testing

Iteration 1

- Feedback: The numeric scale of the long-term goal is not applicable for all clients or goals, sometimes an alternative visualization is more suitable.
 - Correction: Alternative visualization (“mountain”) of long-term goal as an option

- Feedback (Suggestion for extension): Adding training plan functionality to the prototype so that also the times and exercises could be planned
 - Test design: Added the illustrative tab “Training Plan”, but did not implement it as a functional extension, for the purpose to test and discuss the potential extension with future test subjects
- Feedback (Suggestion for extension): Option to receive feedback from clients
 - Test design: Added an illustrative section which shows that it would be possible to integrate client feedback in the system where the trainer can receive feedback from clients. This is not in direct messages but with icons which have certain meaning (e.g. low energy battery: today I am not very energetic / tired) so that the clients do not feel hesitant to send worthwhile feedback before or after exercises
- Feedback (Suggestion for extension): Hard to decipher in which tab is the user currently on
 - Test design: Made the current tab more visually perceivable in order to provide better visibility.

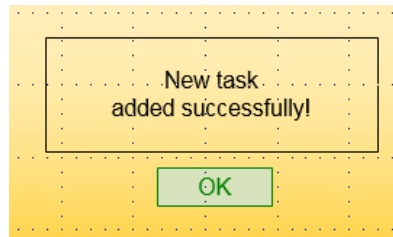


- Feedback (Observation): Test subjects clicked on the “Add Goal” button for *Personal Goals* when trying to add a new *Long-term goal*
 - Test design: Changed naming of *Personal Goals* to *Personal Tasks* in order to reduce confusion

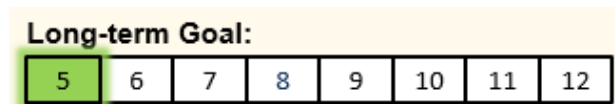
Iteration 2

- Feedback (Observation): Test subjects confused by the lack of visual feedback when creating a personal goal
 - Suggestion for further tests: Added a “personal task created” success message similar to the long term goal message in order to

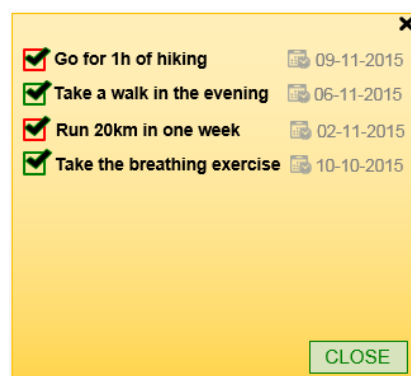
improve feedback and consistency.



- Feedback: Test subjects had problems identifying the text (signifiers) on the button and therefore showed difficulty.
 - Suggestions for further tests: Update the font color to black and increase the weight of the font of the goal and task buttons so that they have higher contrast and are easier to be perceived
- Feedback: Lack of feedback when increasing progress on the long-term goal. According to the test subject, audio might provide a more clearer experience of feedback.
 - Suggestion for further tests: Add a visual effect which supported the feedback when clicking on the long-term goal.



- Feedback: List of instructions was not clear
 - Suggestion for further tests: Made some additional changes to the task list.
- Feedback (Suggestion for extension): Test subjects suggested a way to review the history of task completion
 - Suggestion for further tests: Add a “history” button where they could see a list of all previously completed tasks and could filter it by time.



Reflection

This section contains our impressions and reflections about the evaluation process. The goal was to find aspects of the interface that were not clear to the user. Many such aspects were found during the tests. In general, it was a very positive experience: not because all the tests went smoothly without complaints, but quite the opposite. The test subjects pointed out many issues and flaws that are a valuable contribution for the design team to improve the system.

In terms of the methodology, the test plan showed to be very adequate to the type of evaluation we wanted to perform. By giving the subjects a set of tasks to follow, we were able to observe how a real user would interact with the system instead of simply using our imagination. The tasks given were very similar to the tasks that would be executed in the real world. As a result, we were able to catch difficulties that would have happened during the real use.

During the test days, the team managed to follow the schedule as planned. The test subjects also were very open and willing to contribute. The only issues faced during the tests were when the instructions for the tasks were not clear to the subjects. However, the facilitator would rapidly solve this by answering any questions regarding the tasks. It is important to note that the facilitator was not allowed to give any hints about how to use the interface, given that a major part of the test was to observe when the subjects had difficulties navigating the interface.

A very positive aspect of the testing was the opportunity to interact with real personal trainers, as they will be the final users. Their feedback is extremely valuable for the design team, because it gives insight from someone who is used to train people and knows better what is important to be featured in a system like this. At the end of the test, most of the personal trainers gave many examples of what they would like to see in the next iterations. They also seemed very interested in the system, showing that the product is an interesting idea for the personal trainers themselves and it should continue to be developed.

When it comes to the design of the prototype, the subjects had a very positive first impression of the interface. The design was very appealing to the subjects: most of them complimented the appearance of the interface. Moreover, through the personal trainers we were able to notice many details on the aspects of the interface that a designer would probably miss.

Firstly, most of the functions of the buttons were found to not be as intuitive for the user as expected. For example, the way the buttons were arranged and coloured made it difficult for the subjects to find certain functionalities such as the “progress” tab. Also, the wording for buttons and menus was confusing. An example here is the wording of the “Add Goal” button, which existed both for the long-term goal and the personal goals. These details might seem irrelevant at first sight, but they made the system more difficult to use than expected.

Recommendations to the Design Team

This section discusses the specific recommendations for the design team, based on what the test subjects seemed to be uncomfortable with.

First, some users thought that putting all the information in only one screen overwhelmed them and made them feel a bit lost when first seeing the interface. This is something that could be further investigated, but since this was not something that every subject seemed to agree on (some had no problem navigating at all), we did not make major changes to the visual layout during iterations. A possible recommendation to the design team for this would be to divide the information in different tabs or to use a menu to select the different sub-functions. This way, the overall experience might not be so overwhelming for some since only one functionality would be presented at a time.

Another issue that many subjects had was differentiating the “long term goal” from “personal goals”. Not only are these functionalities positioned side by side, they also have the same wording for adding a goal (“Add Goal”). This led

to many subjects trying to add a long term goal on the personal goal side. This could lead to the wrong use of the system, with users mixing different types of goals. The solution given above would also help to solve this difficulty, because placing the personal and long term goals in different screens or tabs allows the user to pay more attention to which goal is being edited at that moment. An alternative solution is to rename the labels on the different buttons to something more appropriate, for example “Add Long-term Goal” and “Add Personal Goal”.

We also noticed a lack of consistency and feedback in the design which confused some users. When a Long-Term Goal has been defined, a “Long-Term Goal added successfully” message is displayed. This is not the case when adding a Personal Goal, causing some users to press the original “Add Goal” button again. A recommendation to solve this problem would be to add a feedback message after adding a Personal Goal that tells the user that a Personal Goal has been successfully added, in the same way as is already done for Long-Term Goals.

It is also a recommendation for the design team to further develop the top-menu, making it feel more connected to the rest of the interface. Some users had trouble finding the menu buttons, almost as if they didn’t realize it was part of the application. This could be improved by making the menu look more clickable and visually indicate what the current tab is.

Some feedback given after the test section also indicated additional features that the personal trainers thought would be interesting. One of them said that it would be useful to have more details about the client in the profile screen, something like a note icon on the left. These details could include the weight, height and other important measurements and information of the client. Another suggestion given was to include the current training of the client in a separate tab, in order to keep track on what the client is doing.

A third valuable recommendation given is that instead of having the Personal Goals disappear whenever they are completed, they should be stored someplace where the personal trainer has access to view them. This way, the

personal trainer can evaluate the client's progress, goals and achievements over time.

An additional feature recommended by one of the test subjects is the ability for clients to give direct feedback to their personal trainer. This feedback does not have to be complex in the sense of writing a long paragraph describing what is good or bad, but rather it should focus on quick, visual feedback such as a “thumbs up” or “thumbs down” icon after a training session.

Finally, personal trainers also seemed very interested in the idea of being able to create a training plan for their clients with the system in relation to their progress. This could be a new tab on the top menu where personal trainers could navigate to use this implementation.

Conclusion

In summary, the prototype for motivating clients was successfully evaluated and tested with real personal trainers. The test sessions were fruitful as we could observe how the actual users interacted with the system. At the same time, the test subjects were very open to share their feedback. The data collected will therefore help guide the future design of the system, so that upcoming versions will be much closer to what users would expect it to be like. We highly recommend this approach during the design phase of any project, as it allows the gradual improvement of prototypes while avoiding launching a product that will fail because it does not attend to the users' actual needs.

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