LEARNING THROUGH DESIGN FOR WELLBEING

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ABSTRACT
This article studies designed objects as mediums for personal development, along with the learning outcomes of designing these objects. Design for wellbeing aspires to aid people's transformation from their current to their desired state of being, regardless of their capabilities. The important aspect of wellbeing is personal development, the conscious pursuit of personal growth by expanding self-awareness and knowledge and improving personal skills. There is a need to study how products for wellbeing can facilitate users' learning to change from their current state to a state of wellbeing. This article aims to discuss the perspective of personal growth and development through learning by the use of design to achieve this transformation.

This case study includes archival studies to analyse the designed solutions presented in bachelor degree projects under the Department for Product Design at Oslo and Akershus University College of Applied Sciences in 2015. The designed objects are studied to learn how the students intended to stimulate the users' learning processes. These qualities are then discussed from different instructional design perspectives. The perspectives of behaviourism, cognitivism, and constructivism are used to explain how designers can influence users' learning to guide them to their desired state of being.

Keywords: Well-being, personal development, instructional design, design process.

1   INTRODUCTION
Post-war prosperity in the western world has led to the transformation of its value system from a materialistic to a post-materialistic one. Inglehart further describes this phenomenon as "the silent revolution" [1]. Its ideas are brought back in the light of the 2008 economic crisis. The concepts of wellness and subjective wellbeing have been researched in the contexts of policymaking, societal challenges, sustainability, health, and economics [2]. The concept of personal development has been discussed as an important factor besides environmental and genetically formed factors [3]. The concept of subjective wellbeing has also flourished with the positive psychology movement, which focuses on personal development outside the clinical context [4]. In design research, the recent emphasis on subjective wellbeing has been on when and why people are happy and on which processes influence subjective wellbeing. Lately, more designers have examined the field of positive psychology to comprehend how to make products and services specifically enhance people's positive emotions and subjective wellbeing [5]. This approach has led designers to use principles of product–customer attachment [6], as well as emotional design and usability [7]. Desmet [8] (among others) has introduced these values as a set of guidelines for designing for subjective wellbeing. His concept of the positive design framework is built on three factors intended to enable wellbeing, as follows: design for pleasure, virtue, and personal significance. Desmet and Pohlmeyer state that design can enable, stimulate, and inspire engagement in meaningful activities [8] and therefore create more valuable user–product relationship [9]. The findings of positive psychology are therefore considered valid for improvement of design methodology. Accordingly, design can bring designers' abstract intentions into the tangible world and facilitate activities that will ultimately make people happy [8]. Hence, for Desmet and Pohlmeyer, designing for subjective wellbeing is a means of unlocking users' personal potential.

1.1 Design intentions as instructions
The notion that design can affect psychological processes and, therefore human wellbeing, is an interesting argument in itself. This article however focuses on how designers' intentions can be brought into the tangible world to influence human behaviour and to affect individual user experience.

There is a need to study how different design approaches can lead to novel ways of enhancing wellbeing through individual experience. The perspective of wellbeing is elucidated as a personal "potential for flourishing" through the process of change [8]. Thus, this study analyses the designers' intentions that are translated into products or systems as means of facilitating learning so that change can possibly emerge. To analyse how learning occurs, the designed products and their features are evaluated as sets of instructions. The research question is how objects or systems can be designed to induce wellbeing.

2   METHODS

To study designers' intentions to induce wellbeing, three student projects have been chosen and analysed from the perspective of the instructional theory. The instructional theory offers guidance on how to help people learn and develop in a better way [10]. The designers' intended product user scenarios are perceived as behaviourist, constructivist, and cognitivist instructional designs [11]. These theoretical frames can give new insights in how designers can stimulate desired response (behaviourism), acquisition of information (cognitivism) and interpretation of information (constructivism) in the context of user product usage. The case study is used [12] as a suitable method for analysing the objects and the intended product–user scenarios [13]. The projects are investigated as instances of the phenomena of student efforts to design products for wellbeing [14]. The three bachelor's degree thesis projects had the shared goal of empowering users by inducing their autonomy in decision-making and acting in new circumstances accordingly to support or ease changes in user routines. These cases have been selected due to the researchers' local knowledge [15] and the participatory design of these projects [16].

3   OBJECTS FOR WELLBEING

Three student projects are selected from the subject bachelor's degree thesis under the Department for Product Design at the Oslo and Akershus University of Applied Sciences. The subject lasts for an entire semester mainly focuses on design process expertise, knowledge acquisition through networking and product development. Learning is happening in the problem and project based setting. Students carry out their projects independently and are free to choose their methods and strategies. They are encouraged to choose their own topics and to evaluate the topic's relevance as one of the criteria for their thesis. Students therefore exercise certain autonomy to define their respective design topics, perspectives, and informants. Students are supervised through milestone and individual meetings, as well as literature recommendations. Three students carried out the presented projects individually, throughout the spring semester of 2015. The projects were chosen because all three of them developed their problem formulation towards the topic of inducing wellbeing. The case study is structured around how they have developed and dealt with their design problems. The first project took place in the context of a hospital for the elderly, which focused on coping strategies for patients with dementia. The second project was defined in the context of an asylum reception centre in Norway, whose goal was to support asylum seekers in their new environment. The third project involved the elderly and their search for a new context after retirement (see Figure 1). Once the students established their networks and design problems, they received the recommended literature; among other topics, they were advised to read about the self-determination theory [17].

3.1 Project 1. Wellbeing for elderly with dementia

The student who carried out Project 1 had studied the daily routines in the hospital for the elderly with dementia. The student conducted a series of interviews with the staff and actively observed the elderly patients. The design problem emerged from the student's desire to enable the elderly to perform more activities, especially through human contact. The research service design methods led to exploring the possibilities for enabling longer periods of patient–staff contact through user journeys and touch points. By studying the staff's user journeys, the most noticeable problems occurred around the time when the staff tried to enable activities that might boost the patients' wellbeing. The research finally settled on exploring how to create a setting where the effects of dementia could be reduced by stimulating the patients to perform tasks independently. The major challenge for independent activities was the lack of both activity structure and direction for the patients with dementia. Specifically, the research focused on enabling the contexts where the patients could spontaneously participate in social activities. Finally, the student drew the conclusion that the design intervention should target

stimulating activities around the common dining table. The solution was structured around enabling the patients with dementia to set the table independently so that they could perform social activities. The design concept shown in Figure 1 (left picture) represents the placemat that the staff could use as a stimulus to keep the patients' attention on the task. This concept can be further enhanced through the matching colours of the tableware and the silhouettes on the placemats. Although the initial tests showed the increase in the patients' ability to perform the task, there is a need for longer observations on how the patients react when they get used to the stimulus from the designed object after prolonged usage.

Figure 1. From left to right, designed objects for Projects 1, 2, and 3

3.2 Project 2. Wellbeing for asylum seekers

In the Project 2 student has been using ethnographic methods to study the experiences of asylum seekers in Norway. The design-research started with the student's holistic analyses of the application processes—through a series of interviews with the institutional representatives—to observations of the daily routines in the reception centres. After spending time in one of these centres, the student started defining the design problem in terms of the routines and the use of the facilities in the centre. The challenges for the users consisted of understanding and adopting new routines, as well as learning about the facility features that enabled the centre logistics to function. The research focused on health, hygiene and on the free-time activities in the centre. Other issues occurred regarding the communication between the staff and the asylum seekers due to the language barrier. Throughout the student's series of meetings with the asylum manager, as well as the student's observations of the users performing their daily tasks, the design problem started forming around the opportunities to increase the users' responsibility for the life at the centre and autonomy in performing tasks. The student began working on creating universal language symbols for all the users in the centre. This proved to be a challenging task as these users comprised approximately 30 language groups. Trying to design universal symbols was also a major challenge because the different cultural groups had various interpretations of the proposed signage. The solution entailed an iterative design process through which the users were interviewed about the meaning of the signage. Through a careful selection of the most recognized figures, the final signage design was implemented and printed on flyers (see Figure 2, centre diagram), which were also posted on all the doors and walls of the hallways in the centre. The flyer also described the procedures and showed the building blueprint. The signage was used for both of these instructional purposes, representing both activities and places. The users' first impressions of the signage were positive; they started keeping copies in their pockets and posting the flyers on the walls of their private areas for ease of access to the information provided.

3.3 Project 3. Wellbeing for elderly who live alone

The initial motivation for Project 3 was the study that showed the decrease in social contact in Scandinavian countries, followed by the experience of loneliness among the most vulnerable groups, comprising teenagers and the elderly [19]. The student wanted to explore the contexts in which this lack of both social interaction and activity content occurred. The qualitative study included in-depth interviews with the user group, as well as with informants who were experts in the research about such social interactions. To define the concept of loneliness, the student started researching on the missing elements from the users' daily routines in relation to what they used to do, as well as comparing the users who were successfully coping with their new setting of living alone to those who were

unsuccessful. The research showed how some of the users had difficulties in adopting new routines and creating new activity contents. Moreover, the majority of the users had stopped using calendars, mostly relying on their established daily routines for enabling social content. The focus of the project shifted toward motivating the users to discover and possibly engage in new activities. The solution (presented in Figure 1, right photo) offered a personal coach-game quiz that prompted the users to find meaning in new activities and to reflect on how they could be involved in such tasks. The designed object was meant to be a coffee-break game that provoked reflection on how the users spent their time and gave them a story framework to recognize new opportunities to pass time in productive ways. The game was originally intended to be played with a coach or a trusted person. The users should at first learn about themselves through their own stories and after using the game for a while, possibly master it until it became their framework for thinking. The game mimics the coaching process by encouraging the users to put question cards on the left side, describing their current situation, and corresponding cards on the right side, describing their desired situation. This process gave the users a visual overview of their goals, as well as engaged their motor and tactile senses. Once the users could perceive their current situation in a holistic way, they were encouraged to propose activities that could lead to achieving their desired situation.

4   FINDINGS

The described designed objects have the common goal of increasing the wellbeing of their users through the process of usage. The intended process should lead the users from their current state to their desired state of wellbeing [20]. All of the objects are intended to do so through a similar mechanism of empowering the users' autonomy, independence and self-responsibility through meaningful actions that they can master [21]. However, each object aims to achieve its goal through different means and engagements. The designed objects, by implying certain ways of using them, offer instructions to users, with the final goal of changing their perception and attitudes through new routines or comprehension of their situation. To study the quality of such instructions, the perspective of instructional design as a means of learning is used. Instructional design is the practice of creating "instructional experiences which make the acquisition of knowledge and skill more efficient, effective, and appealing" [22]. Instructional design is thus the practice of matching intended learning outcomes with appropriate learning processes or methods. The most important factors in this matching are situational and contextual constraints, understanding the potential sources of the solution such as the theories of human learning, and the integration of the selected strategy [11]. To do so, the instructional designer should successfully predict and plan the learning experience. It is important to take the learners' perspective and choose the appropriate viewpoint on learning or a suitable learning theory. In this regard, the three main perspectives are behavioural, cognitivist, and constructivist [11].

In Project 1, the intended learning outcome is enabling the users to focus on a given task. The key elements of the user scenario are the stimulus, the response, and the association between the two. The intention is to use the placemat with tableware silhouettes to reinforce the desired response by automatically performing the specified procedure of setting the table. Therefore, the instruction is structured around the presentation of the target stimulus and the provision of opportunities for the learner to practice the proper response. "To facilitate the linking of stimulus–response pairs, instruction frequently uses cues (to initially prompt the delivery of the response) and reinforcement (to strengthen correct responding in the presence of the target stimulus)" [11].

In Project 2, the system of the signage and flyers is used to enable the asylum seekers to comprehend the functional features and daily routines of the centre. The users are expected to apply their previous knowledge of the signage metaphors, so they can understand and follow the instructions and then set individual goals to achieve their desired behavioural change. They then rely on both their memory and the information that is organized in a meaningful manner to perform a task of their choice. The organization of the information is therefore influenced by the users' thoughts, beliefs, attitudes, and values [23]. The users are also expected to apply their knowledge of the routines and facilities in new contexts [24]. In Project 3, the activity associated with using the designed object intends to enable users to create meaning from their own experiences and to demonstrate how they do so. The use of the designed object aims to create a situational context in which users reframe their previous experiences through their interaction with the game. By playing the game habitually while chatting over coffee, the users reinterpret their experiences repeatedly in diverse contexts, giving them a chance to construct novel meanings through new questions. The goal is to enable users to develop new perspectives,

validate, and evaluate them through social negotiation [24]. The game also has an inspirational character as it encourages users to formulate challenges and propose ideas and solutions.

The instructional design theory describes different instructional strategies as well as tangible tools used to enable learning. The behavioural strategy includes informative feedback, tangible rewards, the use of cues, practice to ensure a strong stimulus–response association, and the use of prompts (in this case dining mat). The cognitive approach employs analogies and metaphors, framing, outlining, mnemonics, and concept mapping (in this case map of the asylum centre) [25]. The constructivist strategy focuses on creating a situational context to enable users to define the problem, often through objects of representation (in this case cards) to build this setting [26]. In order to use objects of representations learners need to assign certain meaning to them and then use them to create something or give them a new meaning. By analysing projects 1, 2, and 3, it seems that the students have used behavioural, cognitive, and constructivist approach strategies to instructional design (see Table 1). In this case study, cues, visual metaphors and objects of representation seem to be the strategies used for designing objects or systems to induce user's wellbeing

Table 1. Analyses of the results through instructional design theory

Projects	Design intentions	Intended learning outcome through product usage	Strategies used for instruction (instructional experience)
1	Increase independency	Streamlining activities	Cues, prompts
2	Increase responsibility	New space and routines	Visual metaphors
3	Increase autonomy	Formulations of challenges, answer proposals	Objects of representation

5   DISCUSSION

Instructional design offers a perspective on how learning can be used for wellbeing. However, wellbeing is a multifaceted concept, requiring further research to study ways of designing to influence wellbeing. User learning that occurs when using instructionally designed objects seems to be best addressing self-determination of the users. Nonetheless, perceiving wellbeing as a design goal or a way of learning how to design offers insights into the significance of studied projects for users and students. Dorst and Cross [27] describe a creative design process as a problem-solving activity that relies on the interplay of the problem and the solution spaces in which both are developed simultaneously. Accordingly, the creative design process constitutes both unstable and fixed periods of problem solving. The unstable period is exploratory, in which problem and solution spaces are evolving and prone to changes due to discovery and the "clustering of information" [27]. The temporary, fixed period happens when a problem–solution pair is framed, forming a bridge between the problem space and the solution space. Therefore, the creative event is defined as the moment of insight in which the problem framing takes place. The design method emerges from the findings of the case study in the light of the interplay of the problem and the solution spaces. To guide users from their current to their desired state of wellbeing, a designer can stimulate their self-determination through instructional design (see Table 2). This way a designer can frame the design problem in context of personal development of a user and explore concepts through the frame of instruction for personal development.

Table 2. Emerging design process strategy

Problem space	Solution space
Current state of wellbeing	Instructional design
Stimulating self-determination	Desired state of wellbeing

The emerging design strategy can potentially give a framework for teaching design for wellbeing. By using this process strategy the design students might find themselves accountable for the users' autonomy and wellbeing, extending their own and user's competence but also challenging their own and user's attitudes and therefore their own learning. Further research is needed to examine this strategy in teaching and design practice. However, by defining problems and testing solutions as instructions through objects students can see at first-hand how their decisions can influence wellbeing of their users and potentially learn about ethics through practicing design. They could also learn how to design by examining ethical issues and meaningful experiences for the users. The strategy might

also bring useful insight for designers in the industry on how to encourage consumer product attachment that addresses learning rather than only pleasures [6] or self-affirmation [9] aspects.

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