[Innovation from] a shared journey between designers and users

Explicating the XbD process

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A SHARED JOURNEY BETWEEN DESIGNERS AND USERS (EXPLICATING THE XbD PROCESS)

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ABSTRACT: This article describes the Experience-based Designing (XbD) process, which is a way to emphasize meaning in the experience that a product offers. Designing from a basis of meaning is a better way to ensure that the resulting experience can influence people’s lives in a positive manner. This can open up new opportunities for higher levels of innovation than conventional user-centric methods. To support these claims, this article describes a case study – the MyLife project – that builds on the XbD process and highlights the benefits that an increased focus on meaning can bring to the innovation process.

INTRODUCTION
While the gap between designers and users may have decreased with the emergence of methods involving users (such as participatory innovation (Buur & Matthews, 2008)) and methods informing design decisions such as the use of ethnographic methods (Suri, 2011) there is still significant room for improvement in the way users are engaged during a design process. Whilst user involvement can certainly incrementally improve products, it can also lead to incoherent design, and it rarely leads to major technological or design advancements (Norman, 2005). The incremental innovations that many user-centric methods have often brought about have also been a significant cause of criticism (Kantrovich, 2004). In this article we propose that an important aspect of user engagement is to foster a shared understanding of the meanings that users construct in an experience, which again can lead to higher levels of innovation.

THREE DIMENSIONS OF AN EXPERIENCE
In considering the entire interaction experience that users have, we propose to consider the experience in three dimensions. (Jensen, Forthcoming). The first dimension relates to the instrumental level (tangible products), the second relates to the flow/actions (use-experience), and the third relates to the deeper meaning level (profound experience). This division also builds on similar triumvirates by others, such as Hassenzahl (2012 - why, what and how) and Sanders (1992 - Useful, Usable and Desirable). These suggested divisions strengthen the connection between a design and the resulting experience in a more meaningful manner, as providing a more pragmatically viable design approach.

Imagine that you have just bought a new bicycle. The physical product belongs to the 1st (instrumental) dimension. When you ride the bike on a beautiful sunny day, you hear the birds singing, see the trees and meadows passing by, and feel the subtle bumps in the road. You forget all about the mechanical propulsion process called ‘pedaling’. At least that’s what you do if the 2nd dimension (use-experience) is well designed, so the smooth and natural interaction allows you to forget all about the product and you just “enjoy the experience”. That’s when you become fully immersed – and that’s the 3rd (profound) dimension. It is in this dimension that we find meaning in our practice. Designing for profound experience considers the deeper
levels of influence that products have in our lives.

**THE EXPERIENCE SCOPE FRAMEWORK (ESF) - FOCUSING ON MEANING**

The ESF is a method that helps designers to focus on the 3rd (profound) dimension relating to meaning. In earlier research (see Jensen, forthcoming) it was found that there are often two ways in which an experience becomes meaningful. One was the achievement of a goal leading to a feeling of success or accomplishment (denoted as goal-oriented). The second way was more about the atmosphere, social interaction etc. - basically everything other than what was goal-oriented – this we refer to as omni-oriented. It is a state where people are open to whatever happens or are drawn towards whatever holds their attention.

As well as these two orientations, experiences are often characterised by both direct and derived effects (see Jensen, forthcoming). Direct effects deal with the situation at hand. In a goal-orientation it is about solving tasks, and in an omni-orientation it is more about wellbeing. On the other hand, derived effects reach beyond the immediate situation. In goal-oriented situations, the derived effect might be about learning. This can be not only in terms of cumulative experiences that improve your skill in the particular situation, but also how it may impact on other situations. The ESF perspective is created from these orientations and is depicted as a two-by-two matrix that juxtapose omni and goal orientation along one axis and the direct and derived effects along the other (Figure 1 below).

Using the ESF model is a way to form a basic understanding of the experience we intend to design for. This can then lead to idea generation with a focus on the meaning structures that support an experience at a profound level (3rd dimension). This model can also be used as a checking reference to ensure that the design will deliver the intended profound experience in the process of providing for the use-experience and the product functions (2nd- and 1st-dimensions).

**MEANINGFUL EXPERIENCES AND A PHENOMENOLOGY OF DESIGN**

This emphasis on the meaning with a product interaction stems from a human science perspective on meaning as interpreted through a phenomenological lens.

One of the major challenges in using phenomenology as an orientation towards designing is the need to generalise from the individual or particular experience. Moving from an individual understanding of the experiential elements that are shared between various participants to a generalised depiction of it can be difficult. This process can tend to sublimate some less prevalent subjective characteristics of the experiences. According to Auden we, as persons, are: “...incomparable, unclassifiable, unaccountable, irreplaceable.” (Auden in: Manen, M. V., 1990: 6).

Our individuality is what enables us to experience things in particular ways, and create individual meaning structures that, if we were to consider all the small subtleties that are

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1 The term Omni-oriented refers to something universally oriented similarly to how a deity can be considered omnipresent (present in all places at the same time) or something can be omnidirectional.
present in any experience then the experience would be as individual as our fingerprints. However, designing for a market segment requires that we find commonalities that enable us to cater for a sufficiently large (economically viable) group. Moving from an individual experience to a shared abstraction of many experiences is needed, not only to host the experiential meaning we propose in a design, but also to enable the artifact (product) to physically reach or appeal to a wide audience.

The process of generalizing the meaning within an experience helps us to define an intended target group. This may partially exclude those for whom the developed experiential themes have become less relevant. This does not mean that they will not enjoy the product, but it could mean that they are less likely to relate to the meanings intended in the (designed) experience which has been targeted at the first group. The experiential design intention then becomes 'based on' the generalized understanding that was developed for the first group.

**EXPERIENCE BASED DESIGNING (XbD)**

In most commercial situations, a design is experienced by a person that it is directed at – generally, this is not the designer. Aligning a design experience with people for whom it is intended to be experienced in a particular way becomes almost impossible, unless the designed product is intended only for the designer himself. This means we need new ways to involve users if we are to generalize a deeper understanding of the meaning that is intended for them in the interaction experience. The XbD (Experience based Designing) process brings designers closer to this goal. The XbD process builds on phenomenological principles, which focus on a persons everyday, natural, lived experience. It starts by developing a better, 'phenomenal' (deeply personal) understanding of the experience in the particular situation being designed for. This understanding can then be highlighted and explicated in a dialogue between the designer and users. The dialogue process helps to co-create new meaning out of which, 'meaning-full' innovative new ideas can begin to be developed.

It is this focus on meaning explication that is the driving force behind the XbD process. Meaning (not data) remains at the core of the four stage process: Explore, Understand, Share and Show how. These stages form a sound genesis for innovation processes which have originated from a shared understanding (between researchers, participants and stakeholders) of the meaning they have found within an experience. The resulting experiential outcome becomes the product of a meaning-based process, and not the other way around.

The model (Figure 2) below shows how the interaction XbD process generally relates to the three dimensions of experience described earlier (product, use-experience, profound experience). We depict five key points in the XbD process, showing which dimension of experience that is in focus at that stage of the process.

![Fig. 2 Typical key points during the XbD process against the three dimensions of experience](image)

Notice that there is no placement in the 1st dimension at the beginning of the XbD process, because the process typically starts by understanding an experiential state before it is mediated by the introduction of a product and its subsequent use-experience (the natural state). This offers significantly different data opportunities to traditional 'user experience' approaches, which have a tendency to focus only on the 1st and 2nd dimensions.
A CASE STUDY IN MEANING DEVELOPMENT

The 'MyLife' project offers an example of how the XbD process might be used in a research project to develop meaningful material for innovation. This project featured a collaboration between design researchers and the municipality of Odense in Denmark. The MyLife project is concerned with the experience of young adults 20-25 years old in adapting to taking on adult responsibility for their financial and other personal management needs – a situation which many young people have trouble coping with. This section describes methodological discoveries made during this project which helped to ensure that meaning maintained its central role throughout the project. We discuss our discoveries in terms of the four stages in the XbD process and how our understanding of meaning was advanced within each of them.

STAGE 1: EXPLORE: HOW TO RECOGNISE MEANING WHEN YOU SEE IT

This stage is primarily concerned with gathering data from the field and preparing it and the researcher to begin to understand what it contains. In this stage four young people were interviewed, to learn about their experiences of taking on adult responsibility. The ESF was used as a guide during the interview as well as in preparing the questions beforehand. This way we ensured that the questions addressed all of the four quadrants in the model, hereby obtaining a fuller understanding of the experience.

The questions were used only as starters since we, following the principles of phenomenological inquiry, wanted to keep the conversation as open as possible. As Gadamer suggests, the essence of a question is the opening up, and keeping open, of possibilities (1975: 266). Hearing the stories from the participants gives unique insights to how they experienced the situation, which often leads to the researcher becoming emotionally engaged. Hereby it sensitizes the researcher to their predicament and allows the researcher to start understanding how to make informed selections within the insights section that follows.

STAGE 2: UNDERSTAND: UNCOVERING MEANING IN AN EXPERIENCE

This stage is where we start to make sense of the data, extracting insights and structuring them into themes. From each interview we extracted insights, writing each of them on post-its (figure 3) allowing us to afterwards compare and structure insights from all interviews.

Fig. 3 Insights were extracted using post-it notes, which also aided the theme structuring process

The ESF was used in this process by structuring the themes according to the four quadrants, leading to a representation (figure 4) of the meaning structures in the experience.

Fig. 4 The representation created in the understanding stage, where themes extracted from the data are structured using the ESF model.

This representation is based on the individual interviews, finding insights that were common

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2 We define themes, in line with Manen, M. V. (1990: 88), as something that “fixes or expresses the ineffable essence of the notion in a temporary and exemplary form”.
and would be representative for the group of young people. The interviews showed an importance of:

- Social ballast - those who previously had responsibilities when they were younger have better responded to taking on adult responsibility.
- The need to become an individual, making their own experiences (and in some cases, their own mistakes)
- The need of support from families and friends, especially when things happen that push them out of balance
- The importance of having good social relations with
- The dream of having their own family – This is considered to be the ideal, “the good life”, something to aim for.
- Being able to strive for jobs that ultimately are more like hobbies than just a source of income
- External factors (such as losing a friend or family member) may push them out of balance because it is a time where they are finding themselves and many things are changing at once
- Earning money (because it is seen as a means to freedom, family and all the values they expect “a good life” contains)
- Ambition and striving for a certain level of professional accomplishment

During the second stage we conducted follow-up interviews with the original participants to ensure that the representation created reflected their understanding of the situation. The fact that experiences are subjective real world phenomena supports qualitative analysis through a dialogic process (Wright & McCarthy, 2010). Engaging in dialogue with participants as a way of validating the representation developed of their experience is very important to reduce possible misinterpretations. In this regard, the 2nd XbD stage (Understanding), tends to overlap with the 3rd (Sharing) stage. Creating the representation is part of the share stage, but using it to increase the understanding through dialogue with participants (leading to revised versions of the representation) is part of the understand stage.

Another round of interviews were arranged, this time using the representation (Figure 4) that had been developed to involve the participants in its further development and validation.

For this set of interviews the representation was developed into a “dialogue tool” (Figure 5) resembling a board game, where each of the themes in the representation were made into tangible pieces.

Fig. 5 A dialogue tool based on the ESF was used in an interview session during the “Share” stage of the MyLife project, supporting engaged communication

The idea was that the dialogue tool allowed us to rebuild the representation with the participants, meaning that we could negotiate the placements and validity of each theme during the build. This is believed to give a more trustworthy result, than presenting a finished version of the representation for them to just approve or reject. The pieces could be mounted on the board using a piece of adhesive gum, and thin threads of paper were used to create connections between the pieces. The tangible aspect is important because it encourages conversation and enables the tool to be used as a “thing to think with” (Brandt, 2007, Buur & Mitchell, 2011)

Because the tool is designed so it resembles a game-format it is also believed to improve communication between the researcher and the participant (Figure 6). “By shifting focus to the game, power relations and other factors that might hamper idea generation, are downplayed.” (Brandt & Messeter, 2004: 121)
The participant session showed that there was common agreement with the concepts in the representation and their placements, so only few adjustments had to be made. Some themes were removed (calmness for instance didn’t seem to be a common need and was removed from the representation), a few connections were added (for instance putting focus on the connection between the direct omni-oriented themes and the derived goal-oriented themes).

**STAGE 3: SHARE: COMMUNICATING AND CONFIRMING THE MEANING IN AN EXPERIENCE**

This stage is about making the understanding we have developed, perceptible to others.

As described above we firstly share the representation with the participants, seeking to revise and validate it. At this point the Understand and Share stages overlap, since sharing leads to further understanding.

Secondly the now validated representation is used to share the understanding that the researcher now has with the stakeholders. In the session with the stakeholders the initial insights leading to the representation were briefly discussed, to give them a better understanding of the process and sensitize them to the experience that young people have.

During the entire process the researcher/designer has the primary role, leading the process and being the one who ensures, firstly, that the understanding is as true to the actual experience as possible, and secondly that the later development of new ideas and concepts are also as true to the shared understanding as possible. For this purpose the representation created on basis of the ESF model can be a valuable tool.

**STAGE 4: SHOW HOW: PUTTING MEANING INTO BETTER EXPERIENCES**

After discussing the representation, we started stage 4 by brainstorming. Stage 4 is where we direct our findings towards the creation of a basis for design that may improve the situation, leading to the transformation of understanding into design principles and concepts. The brainstorm focused on which issues we saw in the representation and how we might address them. So we looked for ways of intervening that might improve the experience of taking on responsibility for ones own life.

Even though the researcher led the exercise, it was important that the stakeholders were actively involved in the process, hereby also taking ownership of it.

Two issues were identified in the brainstorm, these were:
Knowledge - to make sure that young people have a better understanding of what taking on adult responsibility entails.

Active support network - activating their support network, and making themselves aware that it is there and can be used when needed.

After defining the issues, the brainstorm continued to focus on new ideas that might address the selected issues. These ideas now focus on the second and first dimensions, brainstorming on ways to intervene in the situation, and relating those ideas to the third dimension, visually depicted by the representation.

Ideas relating to the issue of knowledge revolved around the creation of brochures, a website, or the creation of games that might give them the needed information in a more motivating way.

Ideas relating to the issue of activating the supportive network led towards the creation of a communicative platform of some kind. Hereby the young persons might easier start developing supportive networks with their families, friends, municipality and others in ways that better support their life goals.

Again the idea of a game as an entry to engaging their supportive network was mentioned as a possibility. Creating a game looked like the way to go, because it would be able to address both identified issues.

AND THEN: DESIGNING

Even though the design process - developing ideas and concepts into a tangible product takes place after these four stages, the design process will continually be informed by the insights, using the representation as the guidance tool that provides a quick reference for checking ideas and concepts with the shared understanding of the actual situation.

THE MYLIFE GAME

In the described case the themes depicted in the representation led us to six design principles:

- Illustrating the need to better understand how to ensure a good economy
- Showing how you can influence your own life at many levels - both socially and professionally
- Supporting the need for young people to figure out for themselves what they wish to do with their life
- Ensuring that they meet good challenges (which challenge them at the right level) leading to successes rather than defeats, hereby increasing motivation
- Illustrating that there are many sources for support that can be activated in cases of emergency, and that requiring help is not a failure
- Enhancing dialogue between the young persons and the supportive network

The intention of the game is to ensure that they get the best possible start on adult life, by giving them a better understanding of the situations they will be facing. The figures below (Figures 8-10) show the prototype of the game that was developed based on the previously mentioned design principles.

**Fig. 8** Each player has a personal gameboard to keep track of their career, expenses, support opportunities etc.
The intention with designing a game was that it addressed both of the identified issues and could relate well to the themes in the representation, but also that it did so in a way that supported embodied knowledge rather than putting the same information into a brochure. The game provides a testing ground that is analogous to the actual experience (although extremely simplified) giving them a frame of reference for when they encounter the real experience.

As Kolb (1984: 26) says:

No two thoughts are ever the same, since experience always intervenes.

So in giving them an analogous experience, they are believed to be mentally better prepared to face the real experience. So the game is intended to be used by young persons at the stage right before they actually enter the experience, as a way to better prepare them for it.

**Prototype Testing**

The MyLife game prototype was tested with a group of students from the Experience design course at SDU, Odense, Denmark. There were six students who were split up in two groups of three, each provided with a prototype of the game. Cameras were set up to follow both groups in order to see how they played the game, what they had troubles with, and what they seemed to get out of it (Figures 11 and 12).

Firstly they were given a short introduction to the game, and then they were asked to spend an hour playing it.

The tests showed a good link between the representation (the intended meaning of the game) and the game itself. This is for instance expressed by how the participants made use of supportive structures in the game, seeing the link to real world situations, and how it encouraged a good dialogue between the participants. One of the students also mentioned that it had given him a new view on the possibilities of creating a career, for instance using a hobby as a starting point.

**Conclusion**

This paper builds on the propositions that:

- The XbD process and methods leads to more beneficial ways of involving users and, as a result, increases the understanding between users and designers at a profoundly meaningful level.
• The XbD process enables more meaning-filled innovation than other user-centric methods, ensuring a stronger link between the three dimensions of an experience with the potential of reaching a higher level of innovation.

The increased focus on meaning throughout the project is evident in the outcome, with its particular focus on creating connections between the person and his/her supportive structure, and the need to ensure good challenges, which also was a theme from the representation.

It also shows that the creation of representations using the ESF can be a good way to visualize the important meanings, guiding the design process towards its meaningful purpose. The intention of using the ESF in this regard is to make explicit what is tacitly or implicitly understood, supporting the main purpose of a phenomenological approach, to draw out what is hidden through the interpretation. (Conroy, 2003)

The article shows how the XbD-process can lead to new opportunities (which may bring higher levels of innovation) by designing for experiences at a more profound level rather than designing from current products and technologies. This leads to an exploration of possibilities rather than mere problem solving. At the same time this more profound way of looking at experiences may offer new approaches to issues where mere problem solving has not proved successful.

**REFERENCES**


