CONFERENCE ABSTRACT

Designing a virtual coach: Involvement of end-users from early design to prototype

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The EMPATHIC project is developing a personalised Virtual Coach to help healthy elderly people to extend and maintain their quality of life, through the promotion of healthy habits and behaviour. The virtual coach methodology is based on a practical and "future orientated" model, focus on the user goals. Basically, the virtual agent is guiding the user through different stages and intermediate goals. Those "easy to reach" intermediate goals will allow the user to reach a more ambitious ones.

The Empathic Virtual Coach (VC) is being designed to run on tablets, smartphones, PCs, laptops, or even on a large-screen TV. Our ambitions is to easily adapt the solution to the user's home and to avoid unfamiliar gadgets or devices. Moreover, The VC communication is through a simple and natural conversation (non-intrusive technologies).

The Empathic-VC development is based on an end-user driven design, involving healthy seniors from the first phase up to the last prototype. In order to achieve a real co-design, we are involving 180 participants distributed in three different countries (Norway, Spain and France). The target population refers to people between 65 and 79 years old healthy with no relevant chronic diseases. In addition, we will target a set of people with depressive symptoms.

The VC development consider 3 main field studies carried out from 2018 to 2020. The field studies are defined as: 1) Approach validation by user 2) Early prototype 3) mature prototype. Every participant will be involved in each field study (from design to prototype). Currently we are implementing the approach validation based on a Wizard of OZ (WOZ) approach. Basically, for this first step the tools used are: 1) Well-being questionnaires, 2) WOZ interaction and 3) Ad-hoc user acceptance questionnaire.

The selected Well-being questionnaires are the Geriatric Depression Scale- 30 items and the World Health Organization Quality of Life -26 items. Both questionnaires are validated on the 3 considered countries.

The WOZ setup includes a screen showing an avatar. The avatar interacts with the participant mainly through speech. Importantly, the conversation/feedback provided by the avatar is controlled by a human (i.e. the wizard). A key fact is that participants must not be aware of this human control. They must believe that they are interacting with a machine (principle idea of the WOZ method). However, the Wizard is not freely controlling the output. We have stablished a protocol and dialog structure in order to test all the features that we are aiming to developed. The initial protocol, which

is common for the 3 countries will evolved depending on the participant interaction. The wizard is adapting the dialog structure based on interactions.

Finally, the consortium has developed a user acceptance questionnaire in order to evaluate: the willingness to interact, the pragmatism of the solution, the interaction experience, the attractiveness of the solution and the potential applications.

All the user input gathered from the WOZ studies will be adapted and implemented on the early VC prototype. Thus integrating the end-user opinion within the solution design.

Keywords: co-design; co-development; innovation; active aging; older adults; virtual agents