

INCREASING MOTIVATION IN EHEALTH THROUGH GAMIFICATION

Frederiek de Vette*[†], Monique Tabak[‡] and Miriam Vollenbroek-Hutten^{†‡}

[†]University of Twente, Faculty of Electrical Engineering, Mathematics and Computer Science, Telemedicine group, P.O. Box 217, 7500 AE Enschede, the Netherlands
E-mail: a.f.a.devette@utwente.nl; m.tabak@rrd.nl; m.vollenbroek@rrd.nl

Web page: www.utwente.nl/ewi/bss

[‡]Roessingh Research and Development, Telemedicine group,
P.O. Box 310, 7500 AH Enschede, the Netherlands

Web page: www.rrd.nl

ABSTRACT

ICT solutions can help to alleviate the increasing demand for elderly care by e.g. enabling medical professionals to remotely provide care, and activating a healthier lifestyle which extends autonomy and independence of elderly [1]. However, these solutions are often not sufficiently effective as adherence is low and decreases over time [e.g. 2]. Engagement in technology is important as studies have shown that use of an application significantly relates to improvement in health outcomes [5]. Gamification – the use of game design elements in non-game contexts [3] – offers great potential regarding the engagement and motivation of the elderly [4].

Recently, the number of gamification initiatives in healthcare is rapidly growing. However, the majority are not based on funded theory and focus on short-term engagement through extrinsic rewards. A common pitfall for gamification is to lose sight of the core experience of games and merely add visual components of games, such as points and rewards, to another application, resulting in discarding of the application after a short amount of time. We would therefore like to adopt the definition: gamification is the application of *knowledge* from game design to non-game fields. Especially in eHealth it is important to look further than the rather simplistic approaches of current gamification practices as long-term motivation and adherence is needed to achieve lifestyle behaviour change. Gamification, specifically for elderly, is an unexplored area and it is unknown what motivational concepts can be used to achieve this.

This research works towards the realisation of a framework for creating motivating and engaging eHealth applications using gamification, for the elderly population. We present an overview providing insights in current motivational approaches, addressing underlying theory from psychology, behavioural science and game design. In order to create sustained engagement, we should aim to address the intrinsic motivation of users and satisfy their psychological needs [6]. However, psychological and motivational aspects cannot be generically applied to individuals, and classifications of the user and its preferences are needed. Preliminary results indicate a link between personality and the preference for certain game elements.

REFERENCES

- [1] World Health Organization (WHO), “Active Ageing, A Policy Framework”, (2002)
- [2] Evering RMH. PhD thesis: “Ambulatory feedback at daily physical activity patterns – A treatment for the chronic fatigue syndrome in the home environment?” Vol 30: Roessingh Research and Development (2013).

- [3] Deterding, S., Dixon, D., Khaled, R., Nacke, L., "From Game Design Elements to Gamefulness Defining Gamification" MindTrek 2011
- [4] Gerling, K.M., "Exploring the potential of gamification among frail elderly persons", CHI 2011
- [5] Huis in 't Veld, R.M., Kosterink, S.M., Barbe, T., Lindegard, A., Marecek, T., Vollenbroek-Hutten, M.M. "Relation between patient satisfaction, compliance and the clinical benefit of a teletreatment application for chronic pain" J Telemed Telecare 16(6):322-328 (2010)
- [6] Ryan, R.M. and Deci, L., "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being" American Psychologist, Vol. 55 No. 1 (2000)