Chapter 3
Constructive eHealth Evaluation:
Involving the End-User

Anna Marie Balling Høstgaard
Aalborg University, Denmark

ABSTRACT

Despite the existence of an extensive body of knowledge about best practices and factors that contribute to the successful development and adoption of eHealth, many eHealth development-projects still face a number of problems - many of them of an organizational nature. This chapter presents a new method: "The Constructive eHealth evaluation method" aimed at supporting real end-user participation - a well-known success factor in eHealth development. It provides an analytical framework for achieving real end-user participation during the different phases in the eHealth lifecycle. The method was developed and used for the first time during the evaluation of an EHR planning process in a Danish region. It has proven effective for providing management at more levels on-going information and feedback from end-users, allowing management to change direction during eHealth development in order to achieve the most successful adoption and implementation of eHealth in healthcare environments.

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INTRODUCTION

During the past decades an extensive body of knowledge and many research experiences about factors that contribute to successful development and implementation of eHealth technologies have been obtained (Ash, Stavre, & Kuperman, 2003; Berg, 2001; Kaplan & Harris-Salamone, 2009; Kaye, Kokia, Shalev, Idar, & Chinitz, 2010; Van der Meijden, Tange, Troost, & Hasman, 2003). Yet, lessons are still to be learned as many eHealth implementations still face a number of problems, many of them of an organizational nature (Ash, Stavre, & Kuperman, 2003; Cresswell, Bates, & Sheikh, 2013; Edmondson, 2003a; Høstgaard & Nøhr, 2004b; Pagliari, 2007; Van der Meijden, Tange, Troost, & Hasman, 2001; van Gemert-Pijnen et al., 2011). One of the most crucial organizational success factors in eHealth development is *end-user participation,* which has been increasingly recognized during the past decades (Berg & Winthereik, 2004; Cresswell, Bates, & Sheikh, 2013; Høstgaard, 2009; Kensing, Simonsen, & Bødker, 1996; Kensing & Blomberg, 1998; Kushniruk & Turner, 2011; Pagliari, 2007). However, the concept of "end-user participation" has a broad range of meanings, ranging from end-users as consultants (e.g.to test technologies before they are being implemented) to involving end-users during all the phases in the full technological development process (Arnstein, 2007).

In this chapter the concept is used in the sense of enabling end-users to exert influence in decision-making throughout the full eHealth life cycle. That is, *real* influence by participating in decision-making during all phases in the eHealth development process. Most methods developed to support and facilitate end-user participation so far have been developed for organizations in general and have focused on the design stage (Bødker, Kensing, & Simonsen, 2004; Kensing, Simonsen, & Bødker, 1996; Mumford & Weir, 1979). Methods designed for the full eHealth life cycle – formative evaluation methods - have been proposed by Catwell & Sheikh, Clarke et al. and van Gemert-Pijnen (Catwell & Sheikh, 2009; Clarke et al., 1994; van Gemert-Pijnen et al., 2011). However, none of these methods have end-user involvement as a fulcrum. Thus, so far, no methods have been developed with a specific focus on supporting end-user participation during the full eHealth lifecycle, i.e. during all the different phases in the eHealth development process.

A new formative evaluation method aiming at supporting end-user participation during the full eHealth lifecycle is presented in this chapter: "*Constructive eHealth evaluation*". It is meant for eHealth management at all levels – and others working in the field of eHealth technology. The method provides tools for learning during the eHealth development process by involving end-users throughout the eHealth lifecycle. This allows eHealth management to benefit from the unique knowledge on the clinical work practices that end-users possess. Thus, based on feedback from the end-users, management is provided the opportunity to make adjustments in