



A Barrier Framework for open E-Learning in public administrations



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ARTICLE INFO

Article history:

Available online 12 January 2015

Keywords:

Open education
Open Educational Resources
E-Learning
Public Administrations

ABSTRACT

E-Learning and openness in education are receiving ever increasing attention in businesses as well as in academia. However, these practices have only to small extent been introduced in public administrations. The study addresses this gap by presenting a literature review on Open Educational Resources [OER] and E-Learning in the public sector. The main goal of the article is to identify challenges to open E-Learning in public administrations. Experiences will be conceptualized as barriers which need to be considered when introducing open E-Learning systems and programs in administrations. The main outcome is a systematic review of lessons learned, presented as a contextualized Barrier Framework which is suitable to analyze requirements when introducing E-Learning and OER in public administrations.

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1. Introduction

E-Learning is a domain which covers the integration of Information and Communication Technology (ICT) in educational environments (e.g. Guri-Rosenblit, 2006). The wide spread take-up of ICT, the coverage and resulting access to the Internet, have enabled the convergence of E-Learning to daily practices of educational institutions (Bates, 2005). E-Learning is often connected or used interchangeably with Technology Enhanced Learning [TEL], distance, online or virtual learning environments (Guri-Rosenblit, 2006) and has been mainly researched in the context of schools and higher education. The digitalization of educational resources and learning materials has enabled the re-use of these resources across countries and scholarly domains (Richter & McPherson, 2012). Such re-use has also enabled the emergence of different forms of collaborative learning and authorship of teaching resources (Pirkkalainen & Pawlowski, 2014b). A related concept in this respect is Open Educational Resources [OER]: contents, information and learning resources are shared to enhance knowledge and create new resources collaboratively via technological means (e.g. D'Antoni, 2009).

Also in the **public sector**, there is an increasing need and interest to create, enhance and share knowledge (OECD, 2001, 2003). In times of the knowledge society and on-going digitization of administrations, it is therefore surprising that collaborative E-Learning and the role of OER seem to have been neglected. Associated to

e-Government or knowledge management reforms, E-Learning has already been introduced in few administrations (Yunus & Salim, 2008; e.g. Bere, Silvestri, & Nemes, 2014; Chen, 2014). Only few cases indicate, however, that learning and knowledge resources have become 'open', meaning that they are collaboratively developed, re-used or shared (cf. Hilton, Wiley, Stein, & Johnson, 2010). Furthermore, no concept has been developed in the studies, which systematically captures insights and experienced challenges of the phenomenon.

Why did open E-Learning gain only marginal attention in the public sector? This question inspires our inquiry. It is salient to explore:

- (1) What is the status of (open) E-Learning in public administrations from research and practice perspectives?
- (2) Which barriers have been found when introducing and implementing E-Learning?

Answering these questions will enhance the understanding of the challenges in the implementation processes of E-Learning and OER. Due to the limited number of studies in the public sector, the review will further contribute to close the research gap and systemize experiences on the development and use of open E-Learning (cf. Yunus & Salim, 2008). To systemize findings of the literature review, this study extends the Barrier Framework [BF] for E- and OER learning (Pirkkalainen & Pawlowski, 2014a) and will thus derive a contextualized Barrier Framework [cBF] for public administrations. Not to anticipate findings, the cBF will consist of three dimensions (context/organizational, individual, technical barriers) and will address to more than forty challenges to consider in the domain.

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The paper is structured as follows. In a first step, the background literature and concepts of open E-Learning will be reviewed. In a second step, studies on barriers to E-Learning in related domains will be explained. Building upon this background, the method for answering the research questions (systematic literature review) will be defined. In the end, the findings and implications for future research on open, collaborative E-Learning systems in the public sector will be discussed.

2. Background literature and concepts

2.1. Open E-Learning in public administrations?

Efficient learning and knowledge management concepts are necessary as part of Lifelong Learning for individual and organizational spaces (Punie, 2007). In this respect, not only the private but also the public sector is required to increase performance and **implement organizational learning and knowledge management practices** (Langford & Seaborne, 2003; OECD, 2001; Rashman, Withers, & Hartley, 2009).

To cope with this situation, several European countries like Italy or Romania, as well as Canada (Stefanick & LeSage, 2005) and Brazil (e.g. Bere et al., 2014) have introduced E-Learning solutions for public administrations. In some cases, E-Learning is considered as a relevant program to learn at the workplace and to attract employees (Langford & Seaborne, 2003). Virtual learning environments are promoted to suit the learning needs of the public sector which is shaped by changing contents and dynamic knowledge (Conci & Bramati, 2007; Talbot, 2009). E-Learning is even argued to be more flexible regarding individual preferences and time to spend for learning (Bere, Silvestri, & Nemes, 2013). Thus, it is less inclined to interrupt civil servants from work (Hârtescu, 2012; Talbot, 2009). In some cases, E-Learning is seen as an enabler for the inclusion of geographically dispersed learners; for instance, when training programs address to a range of distant municipalities (Colazzo, Molinari, & Villa, 2009).

Yet, E-Learning is not solely implemented to meet preferences and learning needs of civil servants. One platform developed by the World Bank (Blindenbacher & Nashat, 2010) aims to facilitate collaboration in the area of public–private partnership and infrastructure projects. Other E-Learning solutions are developed on a domestic level for economic means. E-Learning is often assumed to provide a quick and cost efficient solution to increase performance in the sector (Langford & Seaborne, 2003; Yunus & Salim, 2008). Technology enhanced learning may increase digital competences and raise competitive advantages in terms of efficiency and quality of service provision, for example (Bere et al., 2013, 2014; Conci & Bramati, 2007; Hârtescu, 2012; Langford & Seaborne, 2003; Sannia, Ercoli, & Leo, 2009). Following Langford and Seaborne (2003, p. 52), however, these promises on E-Learning tend to be accepted without a thorough assessment. So which lessons can be learned and what has been achieved in view of the above outlined objectives?

Summarizing the studies, most initiatives apart Chen (2014) have established blended E-Learning programs. Hence, E-Learning in the public sector tends to result in a combination of online sessions (or providing digital learning resources) and face to face classes, while putting emphasis on the later scenario and guided tutoring (Conci & Bramati, 2007; Langford & Seaborne, 2003).

Study results reflect on the range of evolving artifacts and programs. Often projects start off with few resources like online guides for e-Government portals and manuals for specific administrative procedures (Conci & Bramati, 2007). Over time, the platforms offer textual e-resources such as case studies and linked data, as well as interactive forums and online tests. Face to face

seminars, in contrast, cover practical sessions like role playing (Bere et al., 2014; Blindenbacher & Nashat, 2010). Interestingly, similarities regarding the provided subject courses can be found. In most initiatives, language and ethics courses are offered online. Furthermore, learning contents cover soft skills, management and strategy issues as well as emergency procedures (Bere et al., 2013, 2014; Conci & Bramati, 2007; Langford & Seaborne, 2003; Sannia et al., 2009; Talbot, 2009).

Though reporting on the range of courses, few cases specify on the kind of mediating technologies (see Blindenbacher & Nashat, 2010; Butler, Feller, Pope, Emerson, & Murphy, 2008; Conci & Bramati, 2007). Correspondingly, **the use of social media and collaboration tools like wikis is weakly reflected**. Blindenbacher and Nashat (2010, p. 154) promote that the World Bank initiative is the first to integrate social media in training efforts. Given the vague elaboration on technologies, however, the role of collaboration tools and social networks is unclear. In addition to that, one can only infer how far evolving solutions refer to ‘Open Educational Resources’. According Hilton et al. (2010), ‘openness’ of OER can be defined by the use of open source solutions which facilitate to share and collaborate on educational resources.¹ Another criterion is the choice of design principles which enable to re-use, re-distribute, revise and remix OER (cf. Hilton et al., 2010). These criteria are not mutually exclusive (cf. Lane, 2010; McGrath, 2008) and can both be perceived in the public sector. In cases from Argentina, open source applications are developed (cf. Bere et al., 2014) and in cases from Italy, learning resources are not only open source but can be created both individually or through collaboration without restriction or fees (Colazzo et al., 2009; Conci & Bramati, 2007).

Overall, these aspects shed **some light on E-Learning projects in the public sector**. Still, most authors concentrate on their cases and particular aspects. In addition to a focused elaboration, experiences made are resumed on a high level. Conci and Bramati (2007, p. 84), for instance, conclude that participants have gained a deeper understanding of the creation and management phases of an E-Learning system. Yet, authors neglect to illustrate the nature of the (managerial) use of the systems more precisely. A step towards capturing challenges of E-Learning in a comparative way can be found in Bere et al. (2014). Authors assess E-Learning systems, courses, methodologies and potential challenges in Brazil, Romania, Italy, Argentina and USA. Unfortunately, authors neither compare nor synthesize the findings. As a result, also their recommendations remain on a high level.

Another, more detailed study of challenges is made by Eidson (2009). She focuses on a single training center and elaborates in a qualitative approach on challenges and how civil servants perceive E-Learning (Eidson, 2009, p. 152f.). Another study to highlight is by Colazzo et al. (2009) who reflect on their experiences as developers. This study sheds some light on difficulties when transferring a Learning Management System from academic to administrative contexts. Interestingly, authors indicate that the adaptation covers not only the interface but the functionality of the system as well as metaphors and practices among developers (Bere et al., 2013; Langford & Seaborne, 2003). But whether (and which) particular challenges and adaptations are unique to the administrative context remains unexplained.

Based on the scoping of studies above, it appears that challenges are hardly captured and systematically assessed. Exceptions are Chen (2014) and Eidson (2009); or some studies on pedagogical design of E-Learning platforms (e.g. Sannia et al., 2009). The latter, however, miss to consider potential challenging factors or lessons learned (cf. Sannia et al., 2009; Yunus & Salim, 2008). Insight on

¹ Open source means the code and documentation of educational technologies is released and can be amended individually (Koper, 2008).

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