Chapter 4
Evaluating the Quality of an Online Course in Information Literacy Applied to Engineering Students

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ABSTRACT

An academic library created an online course in information literacy skills in 2007 for engineering students. This chapter reports the evaluation of the course's effectiveness in developing those skills. In the academic year 2015/2016, a case study with a mixed-methods approach was applied to 5th-year students (N=91) enrolled in a course unit for Master Dissertation's preparation in the informatics and computing engineering programme. Students showed high confidence in their information literacy skills. Online assignments' performance was good, but activities revealed quality issues. Performance in the course unit's assignments reveals a poor application of acquired skills. But satisfaction is high: students value independent learning and online access to resources and content. Despite evidence of some positive impact, the course lacks effectiveness due to issues in the course unit's assignments. Needed improvements include a better realignment with students' needs and a redesign with an instructional model to assure the promotion of students' success.

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INTRODUCTION

As we all certainly recognise, technology plays a most crucial role in our lives today, both for professional and personal purposes, building a digital engagement that is said to be "growing across all age groups" (OECD, 2019, p. 84). In the Education domain, technology has been revolutionary because it introduced enormous changes in the way people learn by providing access to informal contexts mediated by the internet. We all know or use *YouTube, Khan Academy, edX, FutureLearn,* or *Coursera*, to name but a few of these popular platforms that provide new opportunities for learning. This completely new world of informal learning environments facilitates interaction, production, sharing, and discovery of information and knowledge. Such technological landscape and a higher valuation of soft skills development demanded by an increasingly globalised world, has been reinforcing the involvement with lifelong learning and weakening the frontiers that separate formal, informal and non-formal education environments (Council of the European Union, 2017).

This context has been having a massive impact on formal education, namely in the Higher Education (HE) setting. New generations of students, used to informal learning contexts, are arriving at the universities, and their expectations for flexible and active learning spaces are maybe the most prominent challenges for HE institutions. They promote experimentation, curiosity, and creativity (Becker et al., 2018; Becker, Johnson, Estrada, & Freeman, 2015) and focus on learners' options, making them able to choose their learning path (Alexander et al., 2019). This new reality demands a vast need for change from HE, leading it to embark in a journey of "digital transformation" (Grajek & 2019–2020 Educause IT Issues Panel, 2020, p. 7), for fear of otherwise losing attractiveness and external recognition in a globalised and mobile market (OECD, 2019).

Within this setting, universities have been making investments in digital capacity and technical teams to support systems and train end-users in this new teaching and learning environment (Palvia et al., 2018). This course of events has primarily contributed to the growing development of HE's online learning (Becker et al., 2018; Becker et al., 2015). Despite this fact, it is still considered only as a complement to traditional education in a face to face setting (Becker et al., 2015; Salvat, 2018) or offered in a blended-learning format (Alexander et al., 2019). Academic libraries, long-time supporters of learning, teaching and research within their HE institutions, have been following this tendency offering IL (information literacy) skills' online courses, some in partnership with teachers, tutorials and learning objects (Llewellyn, 2019). Their online offering aims at preparing students for a time in which easy and immediate access to vast volumes of information causes inevitable dispersion and difficulty in locating trustable and quality content (Becker et al., 2017; Johnson, Adams Becker, Estrada, & Freeman, 2015).

The reliability of online learning has been a significant concern for HE. It is eventually one of the reasons why there are plenty of studies published on the topic, and its use has not been more widespread until now. The recent rush of institutions to promptly provide a digital learning offering to their communities due to the coronavirus (COVID-19) pandemic that lately forced the world to closure and home confinement (Crawford, 2020; OECD, 2020; The World Bank, 2020), is a real exception. Now, more than ever, it makes sense to try to understand how far we can trust the effectiveness of an online course. "Learning what is and isn't working for students is invaluable, but it is especially important as courses are being developed rapidly, iteratively, and under pressure*"* (Veletsianos & Kimmons, 2020, para 2).

This chapter contributes to this field by reinforcing the referred concern of universities with the offer of reliable online learning. It provides a local example of a quality evaluation to its IL skills' online course by the Library of the Faculty of Engineering at the University of Porto (FEUP), in Portugal. The