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The Effectiveness of Customer Education: evaluating synchronous and asynchronous e-learning technologies

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Summary

This paper considers the role played by customer education in enhancing their engagement by enriching the customer experience. Enrichment may be seen in terms of enhanced customer communication or service co-creation. This is often mediated by the effectiveness of customer education. Consequently, organisations are evolving new ways of educating their customers to carry out their roles as co-producers. Increasingly this process depends on the latest synchronous and asynchronous e-learning technologies, requiring significant resource investments. Whilst it is easy for organisations to become absorbed with the latest technological trends, we suggest a refocussing on how customers actually engage in learning and skills acquisition. A conceptual framework is developed that combines key concepts from IT service delivery with well-established models of learning acquisition.

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Introduction

Increasingly, information technology plays a critical role in the service economy both as facilitator (eg customer interaction and communication) and enabler (e.g enabling value co-creation) (Huang & Rust, 2013). This creates new opportunities to personalize service and deepen customer relationships (Huang & Rust, 2017). Effective customer education can enhance customer engagement by enriching the customer experience. Consequently, organisations, whether private, public or not-for-profit, spend vast sums educating their customers to carry out their roles as co-producers. Indubitably, technology has significantly impacted the customer experience and value co-created (Ostrom et al 2015; Storey & Larbig, 2018) as well as "deepening actor involvement, and leveraging the role of technology" in service design and innovation (Patricio et al. 2018). This has lead organisations to increasingly rely on the latest synchronous and asynchronous e-learning technologies. In this context e-learning is defined as learning and teaching online through network technologies. Examples include Apple's webchats, the British Councils' webinars, Microsoft Office's online videos and Boots WebMD's slideshows. But, how effective are these technologies in educating customers?

Historically, e-learning initiatives relied on asynchronous means for customer interaction. However, over the past decade, improvements in technology coupled with increasing bandwidth have led to the growing popularity of synchronous e-learning. Many organisations are now using both forms of e-learning but have a limited understanding of their relative benefits and limitations. Hrastinski (2008) asserts that this debate has progressed from the initial stage, where researchers tried to determine the medium that works best. Such studies generally yielded no significant differences. As a result, "instead of trying to determine the best medium, the e-learning community needs an understanding of when, why, and how to use different types of e-learning" (Hrastinski, 2008; p52). At a time when global uncertainties and complex issues make constant change the norm, understanding the effectiveness of these e-learning initiatives is of paramount concern as they could be the key to enhancing productivity."

In order to address these questions we draw on two previous empirical studies conducted by the authors to explore this issue further. The first study explored how education practitioners measured their returns on investments in service users who were internal and external to the organisation. The second study investigated the interaction process between various actors undertaking information and communication technology (ICT) adoptions. The conceptual work and findings from both of these studies are used to develop a framework for evaluating the effectiveness of customer education that uses synchronous and asynchronous e-learning technologies. The following sections establish the literature and findings from these two studies and explore a conceptual framework that combines the key features.

The first study - Learning and Skills Acquisition

Learning has been described as an interplay between social competence and personal experience; a dynamic, two-way relationship between people and the social learning

systems in which they participate (Wenger, 2000). Learning involves the acquisition of knowledge as well as the ability to act in socially recognised ways (Brown and Duguid, 2001), and it is generally accepted that learning is acquired through progressive stages. With this in mind the first study employed two well established models of learning acquisition - Bloom's Taxonomy (Bloom et al., 1956) and Dreyfus' Five-Stage Skills Acquisition Model (Dreyfus and Dreyfus, 1980). These models classify learning and skills acquisition in progressive stages, arguing that understanding these stages is essential for setting objectives when designing training initiatives.

Bloom et al. (1956) found that most learning objectives could be classified into one of three major domains – cognitive, affective and psychomotor. In adult education, these three domains are often referred to in terms of knowledge (cognitive), skills (psychomotor) and attitude (affective) (Anderson et al., 2001).

The cognitive domain objectives are those that cover recalling or recognising knowledge and developing intellectual abilities and skills. The objectives for this domain were initially classified as knowledge, comprehension, application, analysis, synthesis and evaluation (Bloom et al., 1956). The revised objectives are remembering, understanding, applying, analysing, evaluating and creating (Anderson et al., 2001). These are hierarchical, where each level builds on the previous level.

The affective domain deals with changes in interest, attitudes, and values, the development of appreciations and adequate adjustment (Bloom et al., 1956, Shields, 2001). This domain is focussed on the emotion of the learner and has been further classified into five hierarchical areas – receiving, responding, valuing, organisation, and internalising values (Krathwohl et al, 1964).

The psychomotor domain deals with the skills of the learner. Originally, Bloom et al (1956) did not provide objectives for this domain but subsequent research has developed the idea. Most notably is the development by Dreyfus and Dreyfus of the Five-Stage Skills Acquisition Model, where they argue that "skill in its minimal form is produced by following abstract formal rules, but that only experience with concrete cases can account for higher levels of performance" (Dreyfus and Dreyfus, 1980, pp. p. 5). This paper described the five stages as novice, competence, proficiency, expertise and mastery. However, this was later revised to novice, advanced beginner, competence, proficiency and expertise (Dreyfus, 2004). Collectively, these three domains can be called *people performance*:
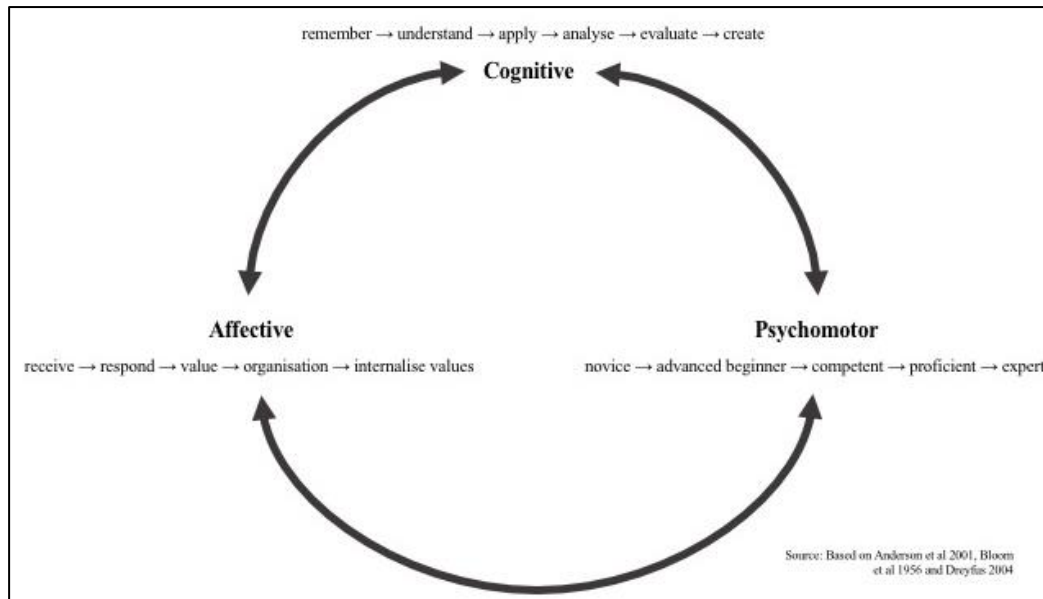
Figure 1: People performance (identified in study 1)

The second study - Technology adoption vs assimilation

In order to investigate the interaction process between various actors undertaking information and communication technology (ICT) adoptions, the second study drew on theoretical developments from the innovation and technology transfer fields to develop a conceptual model. This model explores the congruence between technology deliverers and recipients, the values and perceptions of ICT managers, and the values and perceptions of ICT users, as 'service' clients. The conceptual model attempts to address three key issues concerning technological innovation. These are:

P1. The inability to address issues of a social, organisational, or user nature,
P2. The failure to recognise the importance of the process of interaction between various parties to technology assimilation,
P3. The incongruence between business needs and the technology solution.

When applied to the delivery and consumption of ICT service support these can be mapped as shown in Figure 2:
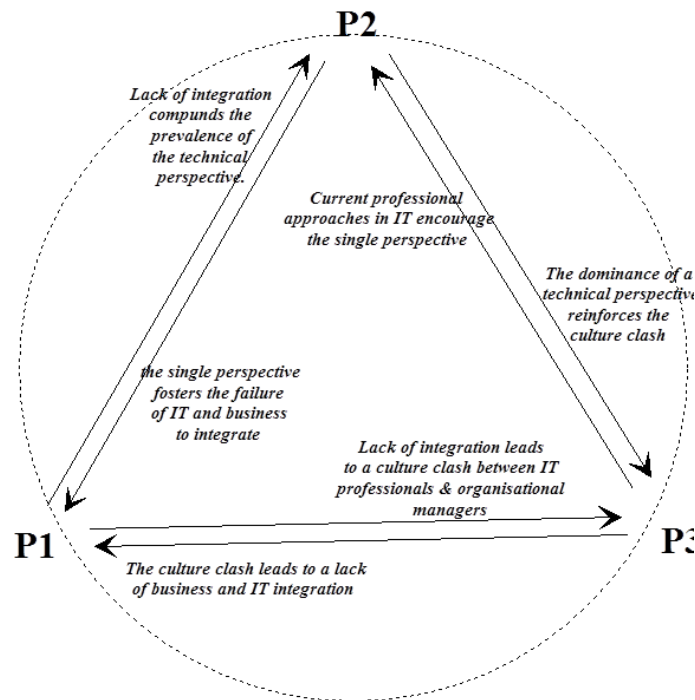
Figure 2: conceptual model of the propositional relationships from study 2

Empirical evidence for the second study was gathered using service delivery concepts (most notably the SERVQUAL framework (Zeithaml et al.1981; Parasuraman et al. 1991; Palese & Usai, 2018) and service co-production (Larsson & Bowen, 1989)), and tested on a wide range of end-users, as well as IT support and technical staff. The model was further developed to make a distinction between the process of ICT adoption and the process of ICT assimilation. *Adoption* describes the initial processes of identifying, then implementing an IT innovation. This encompasses the organisational acquisition of particular information technologies, which usually have their origins beyond the organisational boundaries. *Assimilation* describes the processes of IT innovation following the process of adoption, necessary for the organisation to realise significant benefit from its investment. Assimilation can be seen as the receptivity of actors to absorb the technology into their work tasks and roles.

The key findings from this study recognised the divergence in perspective between service providers who focused on supporting adoption as a linear technology- oriented process, and users, as service recipients, focussed on assimilation. Service providers made the assumption that support provision should be homogeneous and linear. However, this ran counter to the heterogeneity of service users seeking a more tailored and dynamic interaction. It is believed that understanding this incongruence has implications for the design of customer focussed e-learning.

Proposed framework and operationalisation

The conceptual framework is a congruence of the two bodies of literature and empirical findings from two previous studies. The core of this framework is centred on the application of service delivery concepts and co-production to the delivery and

consumption of IT support services. It is believed that the concepts of adoption and assimilation are directly applicable to the delivery of customer education through e-learning technologies. However, these concepts alone are not enough to unpack and make sense of the effectiveness of such technologies in different learning environments and across a heterogenous group of customers. Accordingly, it is proposed to apply the three evaluation domains (collectively called 'people performance') as a way of exploring the knowledge (cognitive), attitude (affective) and skills (psychomotor) of participants. In the light of our previous work it is anticipated that this framework will allow us to evaluate knowledge transfer, stakeholder engagement and behavioural performance in both synchronous and asynchronous scenarios. Figure 3 shows the working conceptual framework with some proposed weightings for the balance between the domains.
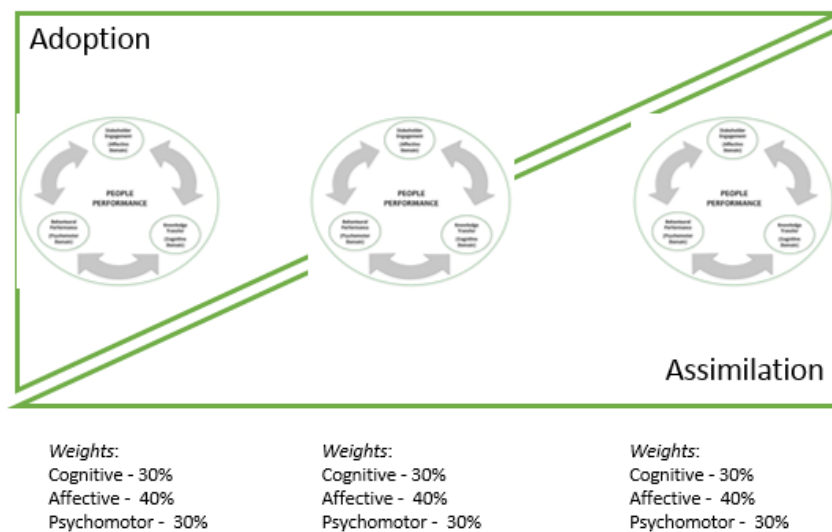

Figure 3: conceptual framework to explore customer oriented e-learning

In order to test and develop the framework we are planning to employ a mixed methods research approach comprising multiple stages and both quantitative and qualitative data gathering. It is anticipated that early testing of data collection instruments will take place within the largest UK university, globally recognised for pioneering the use of innovative teaching technologies. This will be used to inform more detailed evaluation within three practitioner settings (private, public and not-for-profit). Against this backdrop we test the effectiveness of customer education e-learning technologies (synchronous and asynchronous), which are utilised by these organisations. It is anticipated that this will have implications for designers of customer education e-learning systems seeking to better measure service quality and incorporate this in enhanced system design.

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