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Academics' e-learning adoption in Higher Education Institutions: a matter of trust

Purpose - This paper examines how academics enact trust in e-learning through an inductive identification of perceived risks and enablers involved in e-learning adoption, in the context of Higher Education Institutions (HEIs).

Design/methodology/approach – Grounded Theory was the methodology used to systematically analyse data collected in semi-structured interviews with sixty-two academics. Data analysis followed the constant comparative method and its three-staged coding approach: open, axial and selective coding.

Findings - The resulting trajectory of trust factors is presented in a Grounded Theory narrative where individual change, integration through shared collective understanding and institutionalisation are discussed as stages leading to the overcoming of e-learning adoption barriers.

Originality/value - The article proposes that the interplay between institutionalism and individualism has implications in the success or failure of strategies for the adoption of e-learning in HEIs, as perceived by academics. In practical terms, this points to the need for close attention to contextually-sensitive trust building mechanisms that promote the balance between (1) academics' commitments, values and sense of self-worth, and (2) centrally-planned policy, rules, resources and exhortations that enable action.

Keywords: E-learning; Trust; Information Systems; Adoption; Perceptions: Grounded Theory; Organisational learning; Institutionalism; Individualism

1. Introduction

This paper discusses the emergence of the issue of trust in relation to e-learning adoption decision by academics in Higher Education Institutions (HEIs). It provides an inductive explanation of how academics concentrate on developing a trusting state that reduces the perceived contextual complexity, and the costs associated with incoporating the use of instructional technologies – typically Virtual Learning Environmens - in their academic *praxis*. More specifically these academics work in Portuguese public, campus-based HEIs, where face-to-face instruction, typified in the lecture model, is the dominant mode of educational delivery.

Framing the issue of perceived barriers and catalysts to e-learning adoption as a problem of trust (or distrust), is a direct response to the challenge of advancing organisational research through conceptualizing trust in "new and unexplored management information systems contexts" (Bensabat et al., 2010). It is also an attempt to expand the conceptual understanding of e-learning adoption beyond the confines of Education studies, by aiming to achieve a deeper understanding of "the dynamics of trust and distrust relations - one which makes specific provision for conditions of ambivalence" (Lewicki and McAllister, 1999). Therefore, the core contention contained in this paper is that academics' adoption of e-learning is a prime example of such ambivalent circumstances, since academics' e-learning adoption is a consequential decision-making situation subject to outcome framing, conditioned by aspirations of procedural justice, and ultimately shaped by the engendering of institutional dialogic spaces.

The framing of outcomes and adoption effects is not entirely new in the e-learning literature, with studies focusing on the identification of criticial success factors (e.g. McPherson and Nunes, 2008), the influences of institutional policies and practices (Parchoma, 2009), or the conceptualisation of e-learning adoption in HEIs as a disruptive form of innovation (e.g. Hardaker and Singh, 2011). However, an interpretation of the issue

as a trust problem as presented in this article is innovative within the organisational studies literature.

Laurillard (2007) alludes to the costly transition of Higher Education Institutions to the digital paradigm. Costs are eminently related to what Laurillard (2007) describes as "the immensely difficult task of changing a culture in which the drivers of curriculum and assessment requirements, stakeholder demands, career rewards, and funding models, are all geared to old technologies". Accordingly, the inductive reconstruction of academics' perceptions about their position within the structured social context of the university – as presented in this paper – can provide pathways to the "proximal processes that lead to trust" (Messick and Kramer, 2000) in e-learning. Naturally, the focus is not on anthropocentric conceptions of trust, which traditionally define the concept as the willingness to accept risks in inter-personal relationships. (Sheppard and Sherman, 1998). This paper steers away from an interpersonal dimension to approach trust in more calculative and strategic dimensions, taking stock of how academics process "information about outcomes, uncertainties, risks and combining this information with the decision maker's preferences, risk attitudes, levels of aspiration, and willingness to tolerate uncertainty" (Messick and Kramer, 2000). Finally, in analysing trust as the result of institutional arrangements (Zucker, 1986), this paper is situated at the intesection of managerial and sociological approaches to information technology adoption.

In terms of structure the remainder of this paper develops as follows. The next section provides a theoretically-sensitising literature review on perceived barriers to adoption. This is followed by a methodology section, in which the Grounded Theory research design employed in the study is explained. The subsequent findings section takes the shape of a Grounded Theory narrative, in which theoretical propositions are illustrated with a selection of representative quotations extracted from interviews with informants. The discussion section situates the contribution of the proposed theory of trust in e-learning within the wider organisational studies literature. Finally, the concluding section puts forward suggestions on how to spur trust in e-learning through organisational learning, which entails creating and diffusing knowledge across HEIs, and developing satisfactory social exchange mechanisms.

2. Academics' resistance to e-learning adoption

When engaging with e-learning, academics should be equipped with an enhanced set of skills and attributes that transcends the transference of subject-specific knowledge, in order to successfully meet the possibilities open by online delivery, namely the development of high-order cognitive skills related to negotiation of meaning, meta-cognition and life-long learning (Nunes and McPherson, 2003). This set of responsibilities involves elements of technical but mainly educational expertise, which offer challenges in the selection and preparation of academics because the evidence of possession of such skills is not certified by the academic or professional institutions that accredit subject matter expertise.

As McPherson and Nunes (2004) argue, academics' role in e-learning imply the additional ability to set collaborative learning agendas; moderate conferencing behaviour; provide leadership and guidance to individual learning needs; and organise delivery in such as way that learning objectives are aligned with methods, assessment and expected outcomes. These new dimensions of the scholarly activity go well beyond disciplinary knowledge and the knowledge derived from face-to-face teaching, emphasising the dimension of social engagement and challenging longstanding assumptions regarding scholarly work, judgements in quality, and ownership of work (Benson and Brack, 2009). At the organisational level of analysis, there is also the need for "personalised support and a deeper dynamics of collective, evidence-based sense-making to avoid situational ambiguity" (Martins and Nunes, 2009).

The wider literature on e-learning and the roles of academics identifies a range of difficulties commonly felt across HEIs, which may negatively impact on academics' perceptions and confident adoption of e-learning. The sources of academics' resistance typically include (1) having to deal with increased process-related demands of teaching; (2) making extended provisions for the negotiation of teaching and learning activities; (3) facing an overwhelming flow of content, questions and answers from students (de Vries et al., 2005; Kester and Sloep, 2009); (4) and the intensified need to improve closeness and cognitive learning through mechanisms of instructor immediacy (Nagel, 2010:46).

Many of these new tasks are perceived to be time-consuming, being tightly tied to a new set of responsibilities that pertains no longer exclusively to students' skills acquisition and construction of knowledge (Goodyear, 2006, Martins and Nunes, 2016). Academics feel increasingly committed to the demands of monitoring and moderating students' activity online, and to interactional learning design requirements that are growing in sophistication and complexity (Spector, 2005). In general terms, academics struggle with the production of "transactional presence" – the connected and continuous availability of academics to students' requests. (Shin, 2002:132).

Most of these difficulties are not alleviated at the organisational level. To this regard, Birch and Burnett (2009) indicate that a "perceived lack of reward and a lack of recognition from management and peers has consistently inhibited academics' willingness to develop e-learning environments". Similarly, Green et al. (2009) purport that "seldom will faculty participate in activities that take time and resources away from their careers, especially when trying to get tenured at an institution". In addition to academics' already overloaded teaching and administrative workloads, e-learning brings to the equation deterrents such as increased time commitments (Carlson et al., 2002; Orr et al., 2009), "lack of tenure considerations, lack of course releases and lack of training and support" (Cook et al., 2009:151). Because of this lack of institutional rewards and incentives, academics find it uninviting to consider e-learning adoption (Loureiro-Koechlin and Allan, 2010).

3. Methods

Grounded Theory (Glaser and Strauss, 1967) was selected as the methodology in this study for its ability to inductively extract and theorise academics' perceptions, the assumptions underlying their behaviour towards e-learning, and the richness of lived experiences.

A sociomaterial, practice-based approach that would highlight the practical, embodied, and situated (Orlikowski and Scott, 2008; Feldman and Orlikowsli, 2011) dimensions of e-learning adoption was also considered a viable research approach. However, symbolic interactionism, with a clear focus on meaning making in social situations (Charon, 1979; Potter, 1996; Woods, 1992), provided the most appropriate perspective for this research study. Blumer (1969) has described symbolic interactionism as being based on three fundamental principles: individuals act "towards things on the basis of the meaning things have for them"; meaning "is derived from, or arises out of, social interaction one has with one's fellows", meaning is dynamic and changes as one acts and modifies it as a result of ongoing interactions (Blumer, 1969:3). Therefore the meaning that a process like the adoption of e-learning has for academics is "constitutive, not accidental or secondary to the experience" (Bogdan & Biklen, 1992:36). Meaning is intentionally constructed, it is dynamic and will change as a result of ongoing interactions, because individuals act, perceive, interpret and act again – in a continuous dialectic process.

Sampling efforts focused on the identification of a relevant community of practice,

composed of academics in Portuguese public HEIs, teaching at BA/ BSc Level, and affiliated with Faculties where e-learning appropriation manifested itself in considerable depth.

Data collection efforts developed in two stages: a first interview round comprised 14 interviews; and a second interview round comprised 51 interviews. The total number of participants is 62, but 3 informants that participated at the first interview round were again interviewed during the second data collection stage, as part of the theoretical sampling process and in order to support the validity of ongoing coding and analysis.

Following the proposal of Strauss and Corbin, this research preserved the defining feature of grounded theory - the inductive generation of theory. However, it is acknowledged that prior knowledge of the relevant literature is important to develop theoretical sensitivity. Accordingly, a general review of the literature was of assistance to identify issues in the particular area and find gaps in available knowledge to be filled up by an inductively-built theory.

In Grounded Theory research the idea of conducting a literature review is occasionally problematic, since the inductive nature of the method recommends minimising researcher's exposure to bias. Therefore the function of a literature review must not be the generation of any a priori framework or model, which is commonly, adopted as the theoretical foundation and starting point for data collection and analysis in deductive research designs. Consequently, a general review of the literature took place at the beginning of the research project to provide background knowledge for the global sorting and ordering of the topics that composed the interview guide (*vide* Appendice 1 for the interview guide used for data collection). The literature review served the purpose of enhancing the researchers' theoretical sensitivity (Glaser, 1978). Interviews were semi-structured and lasted between 1 hour and 1 hour and 30 minutes. They were conducted in Portuguese, but the results of data analysis are expressed in English.

A purposeful approach to preliminary informant selection was deemed necessary during the first round of interviews to, as Glaser (1978) admits, gain rapport with "knowledgeable people to get a line on relevancies and leads to track down more data and where and how to locate oneself for a rich supply of data", whilst maximizing "the possibilities of obtaining data and leads for more data in their question" (p. 45). During this stage, 14 academics of Portuguese Higher Education Institutions were interviewed (3 of which held concurrent responsibilities as e-learning administrators, 2 as e-learning strategists, and 2 as governmental officials). The researchers had no previous relationship with the participants. In the course of data analysis conducted during the first interview round, the researchers have found that emergent theoretical propositions related to academics' e-learning appropriation pathways could be refined and modified through comparison with other cases. This acknowledgement consequently dictated the decision to refine and extend the sampling strategy, basing the procedure on analytic grounds.

As the study developed into a second round of interviews, theoretical sampling - employed as an inductive, systematic approach to extract theoretical formulations out of informants disclosed cognitions followed by validation and consolidation, i.e. the initial theoretical constructs were used in this stage to guide further data collection.

The strategy for theoretical sampling relied on pursuing referrals made by early informants to potential study participants that in turn were also recognised e-learning practitioners. These referrals often crossed disciplinary boundaries (disciplines included Education, Computer Science, Communication Studies, Information Science, Maths, Management, Pharmacy, etc.). During this second stage of data collection, a total of 51 academics were interviewed. Data collection and analysis coexisted until no new open codes emerged from the data analysis. This indicated that theoretical saturation had been achieved.

The analytical process involved open, axial and selective coding strategies (Strauss

and Corbin, 1998), which translated into breaking down interview transscripts into units of meaning, starting with descriptive categories, reappraised for sets of irradiating relationships, ultimately condensed – through the analytical steps of constant comparison – into higher order categories of holistic explanatory power.

The concerns raised by informants in the course of interviews were representative of their professional category. They addressed change management practice, as globally there was the perception that HEI had not adequately positioned themselves for the introduction of e-learning systems. In terms of theory building, the most significant categories emerging from interviews referred to erroneous institutional mainstreaming policies and change burdens resulting from changes in practice and learning materials required by e-learning. These change burdens result in disruptions to academics' professional praxis and require changes in institutional attitudes, management and reward schemes. It emerged strongly from data that an unrewarded extension of the teaching presence and the fading of traditional expectations for engagement in teaching and learning is a source of anxiety, stress and mistrust in e-learning by academics.

4. Trajectories of trust in e-learning

In order to describe and explain barriers to e-learning adoption in a systematic manner, an explanatory model was developed based on the three stages of coding proposed by Strauss and Corbin (1998), previously explained in Section 3, and now detailed in Appendix 2. More specifically, open coding developed as a process of identification or mapping of barriers to trust in e-learning, as perceived by academics.

As the level of abstraction in coding progressed, trust barriers were aggregated according to whether they reflected either an agentic or an institutional orientation (axial coding), and then grouped in sequentially progressive levels of trust that culminate in a conceptualisation of trust in e-learning through organisational learning (selective coding). Organisational learning is understood here as organisationally regulated collective learning process in which individual and group-based learning experiences concerning the improvement of organisational performance and/ or goals are transferred into organisational routines, processes and structures, which in turn promotes academics' trusting adoption of e-learning.

Ultimately, the model presented here – and summarised in Appendix 3 - conceives e-learning as a means of strategic renewal in HEI. It attempts to explain e-learning adoption as a process. The dominant perspective is therefore psychological-organisational, by simultaneously focusing on the overcoming of individual and organisational behaviours that prevent or hinder e-learning adoption.

The multilevel character of the model is evidenced by bringing together individual and organisational levels of analysis – this duality was very vivid across interviews with academics - further conceptualised through coding as actional-personal or structural-organisational spheres. This multilevel nature is particularly important to understand the tension between academics' individual experiences in a changing environment and HEIs' response, actionable in the strategies employed to transfer experiences from individual level into organisational routines, structures and processes. Tables 1-3 below present in detail the emerging main themes that reflect academics' perceived barriers to trust in e-learning, accompanied by representative quotations extracted from interviews. Furthermore, the tables present three processes by which the different levels of trust in e-learning (individual and organisational) are bi-directionally connected:

1. Trust to change: this is the process of developing new insights and ideas concerning e-learning based on personal experiences. It is located within individuals and it is extracted through analysing the ways in which academics explain their insights through words and actions to themselves and to others:

> "An effective change in practice is achieved through systemic interventions and we are missing that. The outlook needs to be integrative and sustained by leadership, supervision and determination of quality standards, because online practice also needs to be evaluated. This means going beyond the technological dimension of e-learning (Q33:33:51)".

INSERT TABLE 1 HERE

2. Trust to integrate: this step takes place when a shared understanding among individuals is achieved, allowing for coherent and collective action across the organisation, yet not forcefully:

> "Both the administrative and the pedagogical uses of e-learning can only be fully exploited if some sort of guidelines or recommendations are available. But I don't think these should be too prescriptive or imposing. If the use of e-learning was fully mandated and regulated by institutional norms, there would be attrition and resistance" (Q14:27:39).

INSERT TABLE 2 HERE

3. Trust to institutionalise: this state refers to the consolidation and implementation of shared understandings in systems, structures, rules, procedures and strategies, which guide organisational action. To be more specific, the institutionalisation of e-learning implies embedding it in the structures, routines and strategies of the organisation.

> "E-learning implementation requires negotiation, the concerted effort and search for solutions that please everyone. The management needs to employ powers of political persuasion, whilst directing all the attention to reconciling the cultures, interests and sigularities of different disciplines, academic departments, and academics (Q5:9:6)."

INSERT TABLE 3 HERE

The three processes of changing, integrating and institutionalising are used to characterise the overcoming of the specific barriers to e-learning adoption that they aggregate. They were identified during the selective coding stage (see Appendix 2).

However, there is a deeper dualism permeating all three stages, which was identified during axial coding (see Appendix 2). It deals with power, identity and influence, and it affects the perception of costs and benefits that academics associate with e-learning. This dualism is that of agency versus structure, i.e. the capacity of individuals to decide and act independently of social structures versus the mechanisms that serve as constraint on the activities independently pursued by subjects (procedural rules, material resources, resources of authority) (Gidden, 1984).

On the one hand, there are barriers to trust in e-learning that fall under an 'actional-personal' sphere (agency). These are marked by individual thinking, attitudes and behaviour, and by self-interested/ self-governed action.

On the other hand, there are barriers to trust in e-learning that fall under a 'structural-organisational' sphere (structure). These are characterised by existing routines, structures and practices and are expressed culturally in the formulation of strategic intent, in formal regulations as well as in the processes of decision-making, dominance and discipline.

Subsequently, this sphere is divided into 'strategic' and 'operational' levels. The 'strategic level' refers to how HEIs envision their leadership position and how, in response to this vision, they establish the criteria that will be used to chart progress. This requires an active management process that includes the ability to focus organisational attention on the essence of a shared vision, the ability to motivate people by communicating the value of targets, the ability to make room for individual and team's contribution in the formulation of targets, and the ability to sustain commitment by providing operational definitions and allocating resources.

Turning to operational performance, the 'operational level' refers to how organisations translate strategic direction into operational reality, creating competitive advantage in the process. It describes how initiatives that are closely associated with organisations' strategic direction are targeted to receive increased managerial attention, greater financial and technical support, and additional resources in the form of staff training and motivation, which are necessary to sustain high-priority endeavours.

The components of the external organisational environment were not ignored and were assimilated into the 'structural-organisational' sphere, as it is considered that the environment represents parts of the social and material world that the organisation perceives as relevant. The organisation filters out perceived changes and developments in the external environment (for example technological innovations, governmental policy or new ideas generated by specific groups in society) and decides whether or not to integrate them as organisational products and practices. This decision is not dissociable from culturally endorsed forms of authority, rather being its reflexion, hence the importance of analysing societal-environmental factors as components of the structural-organisational sphere.

In building theory researchers should aim at understanding the phenomenon under investigation as fully as possible, situating it within a complete range of macro and micro conditions in which it is embedded. To address this challenge the research reported in this paper made use of Strauss and Corbin's (1998) conditional/ consequential matrix to diagrammatically represent the theory's narrative story and to successfully and logically access, integrate and portray the complexity and deeper textures of academics perceptions as conveyed by the findings presented in Section 4.

The conditional/ consequential matrix contributes to expanding the dimensions of the analytic work, through a balanced representation of structure and process. Immediate and broader contexts of the phenomenon are integrated in the analysis, contributing to a denser reconstruction of data, as patterns of interaction are identified, and connections to influential macro and micro conditions are established (Corbin and Strauss, 1996).

Using the matrix as a framework to analyse social processes of change permits the localisation of a social world, understood in this study as a group "with shared commitments to certain activities, sharing resources of many kinds to achieve their goals, and building shared ideologies about how to go about" business (Clarke, 1991:131).

In this particular study, the social world is composed of academics and their perception and attitudes regarding the adoption of e-learning. The data collected in interviews revealed the existence of what Strauss (1993:227) describes as "whirlpools of argumentative

action" - a symptom indicating that social arenas disputing e-learning appropriation and embedding strategies are at interplay.

The matrix allows the formulation of an explanatory sociological theory by relating "the context of conditions, one with the other, of a structuring process that is ongoing in the form of an arena within or between social worlds" (Hildenbrand, 2007:544). In this specific case, the matrix reproduced in Figure 1 illustrates that the overcoming of actional-personal and structural-organisational barriers is a condition of trustful adoption of e-learning, following a progressive integration of: (1) individual academics' capacity to develop new insights and ideas concerning experiences of e-learning (trust to change); (2) academics' capacity – as a professional group - to achieve shared notions of validity for e-learning experiences; and (3) the institutional capacity to embed e-learning in HEIs' structures, routines and strategies (trust to institutionalise).

INSERT FIGURE 1 HERE

5. Discussion and conclusion

5.1 The issue of trust

Emergent trust has been inductively identified as a desired state of successful e-learning adoption – trust to change, trust to integrate, and trust to institutionalise. The findings indicate that e-learning adoption in HEIs is the result of academia's strategic renewal of practice, or in other words it requires that HEIs take a strategic approach to organisational learning that enhances trust in organisations.

Consequently, if e-learning is to be fully exploited in the delivery of Higher Education, academics will need to revise patterns of practice and behave differently. Nonetheless, academics, as social actors, "do not behave or decide as atoms outside a social context [and] their attempts at purposive action are embedded in concrete, ongoing systems of social relations" (Granovetter, 1985:487). Therefore, eliciting academics' cognitions about their position within the structured social context of the university can potentially provide pathways to the "proximal processes that lead to trust" (Messick and Kramer, 2001) in e-learning.

Although the meaning of trust is intuitively understood by the common citizen, the findings presented in this paper transcend the anthropocentric conceptualisations that traditionally posit a view of trust as the willingness to accept "risks associated with the type and depth of the interdependence inherent in a given relationship" (Sheppard and Sherman, 1998).

The concept has traditionally been addressed by the literature on social psychology (Blau, 1964), sociology (Luhmann, 1979), and economics (Sako, 1992), but the most consensual definitions have defined it as a mix of interpersonal and impersonal dimensions. Mayer et al. (1995) and McNight et al. (1998) define it as the positive expectation an individual has about the competence, reliability and benevolence of fellow organisational members, combined with the organisation members' trust in the organisation's vision, strategy, and procedures. Accordingly, in its interpersonal form, organisational trust refers mostly to individuals' "ability, capability, integrity, truthfulness and goodwill" (Ellonen et al., 2008:161). In its impersonal form, organisational trust refers to the efficiency and procedural fairness of the organisation-wide systems such as reward systems and human resources policies (Costigan et. al., 1998; Pearce et al., 2000; Atksinson and Butcher, 2003).

In the study reported in this paper, trust moves beyond a strictly interpersonal dimension into more calculative and strategic dimensions, following Smith's (2001)

argument that trust concerns "uncertainty about outcomes, ambiguity of objective information and exercise of discretion about action". The focus of interest is academics' consequentialist decision making – a deep process that, according to Messick and Kramer (2001) entails "processing of information about outcomes, uncertainties, risks and combining this information with the decision maker's preferences, risk attitudes, levels of aspiration, and willingness to tolerate uncertainty".

The conceptualisation of trust presented here derives from academics' identification of systems and methods that allow them to make assessments and decisions regarding the dependability of e-learning adoption, framed as a transaction that involves a certain degree of risk and difference to the traditional academic environment and practice.

Therefore, the principal aim of this section is to connect the psycho-social foundations of academics' trust with the macro-bases of organisational processes that are set in motion to accommodate e-learning.

Trusting behaviour is triggered by initial salient value, potentially erodible. Research on motivators for academics in e-learning conducted by Cook et al. (2009) identifies several sources of enthusiasm and trusting behaviour: a personal proclivity to use technology; the ability to reach new audiences; the opportunity to improve teaching and develop ideas. However, initially ascribed meanings may change as academics learn about or experience uncontrolled risk. That is frequently the case of academics who display a mistrusting behaviour after having experienced the time-consuming task of interaction with students and contents' moderation (de Vries et al., 2005; Nagel, 2010; Kester and Sloep, 2009). Indeed, in appraising the fragility of trust, Kramer (1999) alerts for the widespread of trust-destroying events, which may "carry more weight in judgement than trust-building events of comparable magnitude".

The frequency and intensity of e-learning time-consuming tasks and the combined absence of adequate organisational response contradict the notion that e-learning can set academics free of temporal constraints (Goodyear, 2006:84) and operate as a trust-destroying nexus.

Although trust "simplif[ies] the social world by allowing actors to differently manage" (Marsh and Dibben, 2005) uncertain contexts, it cannot give them absolute confidence. As further posited by Weber et al. (2005:76), trust operates at the level of anxiety reduction, being a psychological state that helps individuals and organizations process information more rapidly, based on positive expectations of a third party's behaviour.

Interestingly, a study of personal relationships with extended impact in the relational and social dimensions of trust conducted by Murray and Holmes (1994:61), discovered that people often develop optimistic narratives and cognitive frames "to preserve feelings of confidence and security in face of the inevitable risks posed by interdependence". Initial trusting behaviour in e-learning, by extension, seems to follow along the same lines, and entail accepting vulnerability in the hope or expectation of gains extractable from incorporating educational technology in teaching practice.

However, another variant contributing to the heterogeneity of experiences and expectations of use is entrenched distrust, which Marsh and Dibben (2005) qualify as the human response to insufficient information, resulting in the need for evidence. Across informants' accounts, this was manifested when academics held no expectation of benign outcome based on inference of e-learning's distinctive marks. In particular, it was reported that the expansion of available instructional possibilities offered by e-learning faces the obstacle of academics' self-complexity and entrenched conservatism. That is especially the case of more senior staff, for whom "changing mindset and role description to that of a service provider can certainly increase workload and reduce status" (Shurville, Greener and Rospigliosi, 2008).

A more rational approach to e-learning appropriation derives from the existence of trust management systems committed to ensure academics are aware of possible e-learning outcomes and are consequently able to take cost-effective actions, enhance benefits and mitigate appropriation risks. These systems reflect a gain-oriented rationality, rooted in the capacity to trigger academics' confidence and assurance. Accordingly, acceptability of e-learning can be increased by identifying and emphasising benefits, thus generating consistency among academics' beliefs.

Rewards strategy

Structural-organisational assurance can be leveraged through the establishment of clear pay-off and reward structures, which are currently stifled by (i) career regulations that ignore the time applied by academics in e-learning development; and (ii) the traditional configuration of the university as a social system around excellence in research, at the expenses of quality in teaching and pedagogical innovation.

The participants involved in this study generally reported online teaching activities to be personally rewarding, but perceived discrepancies between personal and institutional rewards for using e-learning, and most sharply between university rewards for teaching and scholarly activity. Despite the fact that a wide range of instructional technologies and e-learning development programs was endorsed by management, top rated options referred to institutional recognition of research excellence.

From this comparatively lower endorsement given to online instructional skills emerges an imbalance in the effort-reward chain, which may determine that academics become less agreeable to considering online instructional development activities because institutional incentives don't communicate the message that teaching online is serious business, despite the increment in teaching loads and the heavier burden of designing, tutoring and advising responsibilities.

Similar concerns are echoed in the literature. A lack of guidelines for evaluating online teaching and the absence of supportive institutional response makes online teachers "concerned about how their online teaching is regarded in the context of promotion and tenure" (Spector, 2005). Valuable time can otherwise be allocated to better rewarding activities such as research and publishing.

A fairer reward system, academics argue, must be able to go beyond symbolic incentives and impact in the research culture in such a way that the scholarship of teaching and learning offers equivalent compensation, thus ensuring an integrated approach to academic careers. Such an integrated approach should bring to the academics' assessment equation dimensions not traditionally considered such as the development of teaching practices based on the learning perspective; teachers' effort to develop students' learning online; discipline-relevant pedagogical reflexivity; and special attention to the integration of learning philosophies and teaching activities (Martins and Nunes, 2010).

An examination of organisational theory literature further emphasises reward as a mediating process through which employees are motivated and resources allocated. Ferrin and Dirks (2003) examined perceptual routes through which rewards influence trust to conclude that "reward structures are a powerful element of the organizational context, and represent a potentially useful tool for managers who wish to change employees' behaviours, perceptions and beliefs". In addition to this, a stream of management research emphasises the use of extrinsic rewards in an effort to stimulate employees' creativity (Fairbank & Williams, 2001; Van Dijk & Van den Ende, 2002, Eisenberger and Aselage 2009).

Practice alignment

The dimension of individuals' sensemaking cannot be obliterated from a theorisation of e-learning adoption. Actional-personal confidence in e-learning can be fostered through relying on academics' agency and on their ability to understand evidence of salient value. From perceived benefits, academics will be able to mainstream what they consider to be appropriate guidelines, procedures and goals of introduction of e-learning in pedagogical practice. Confidence is, as purported by Marsh and Briggs (2009), "often achieved through rules and regulations that are backed up by a trustworthy legal or social system".

If, as outlined above, university-wide norms of virtual presence, accounting for and adequately rewarding academics' time allocated to the scholarship of e-teaching provide a solid basis for the conscious calculation of adoption consequences, confidence is on the other hand predicated on shared institutional understandings regarding that very system of rules and the affordances of e-learning. A normative system can only foster trust if sustained within an organisation "not [by] an explicit contract (…) [but] by socialization into the structure of the rules" (Marsh and Olson, 1989).

Consequently, consistency in guidelines provided by management and the collaborative negotiation of individual expectational assets are fundamental in the process of articulating academics' perceptions, motives and aspirations in order to control the specific transformations introduced by e-learning.

Comprehensive and clear communication about the reasons for appropriation, reinforced with the diffusion of knowledge regarding embedding strategies and consequences is also needed to avoid irrational resistance. Research on trust validates this assertion, underlying the role of communication in successful projects, and indicating that "communicating one's reasoning and expectations via explicit statements that describe intentions and expectations can be effective in clarifying the dynamics of a trusting act" (Messick and Kramer, 2001).

Research conducted by Mansvelt et al. (2008) generated similar conclusions, suggesting that poorly linked technology infra-structure, policy and social connections may result in frustrated and confused staff. Practice misaligned with policy, uneven e-learning experience implementation, and unsupportive management are inimical to confident adoption.

Additionally, availability of support structures can help academics feel confident to freely compose the most adequate technologically-enhanced pedagogical solutions. Institutionally flexible technology-enhanced learning environments that value locally nurtured knowledge and networks of contacts can reduce complexity, organizational conflict and staff anxiety. Shurville, brown and Whitaker (2008) concur with this approach, calling for the provision of "institutions and their developers with facilities to adapt and integrate the product with local administrative processes, IT platforms and teaching culture".

To avoid divergence and tension between managerial and academic practice, devolution should increment disciplinary-driven innovation and achieve what Snyder et al (2007:200) define as the "alignment of planets": the generalisation of technology-mediated pedagogical initiatives through the secure enabling of conditions for academics' creativity and productivity i.e. "resources, systems, discursive practices and other conditions that facilitate complementarity" between innovations across the institution and compatibility of values and goals.

In terms of managerial principles aimed at shaping trust, this proposal appears to match the human investment philosophy as described by Creed and Miles (1996), most notably the importance of interventions designed to "enhance the technical competencies,

business understanding, decision-making abilities, and the self-governance capabilities of all members".

The emergent trust theory is also aligned with Blomqvist & Ståhle's (2000) model of organisational trust. The model posits that trust is built by the convergence of individual and organisational structures, which are signalled through actions. In turn, actions are evaluated as signs of trustworthiness. The interplay between structure and action produces the dynamics of trust. Trust-building is iterative and results from the convergence of organisational and individual actions. For example, the experience of mutual orientation is a signal that both the organisation and the individuals are committed to norms and values that promote reciprocity.

This achievement of shared values maximises the chances of joint effort and increases individuals' "will to stretch his/her roles in the organisation" (Blomqvist and Sthale, 2000). Similarly, the articulated communication of organisational goals and individual intentions signals that both parts are able to "state their needs and expectations openly", which results in a better understanding of what are the goals, what is needed to reach them, and what is requested in terms of rules and commitments (Blomqvist and Stahle, 2000).

With the issue of e-learning adoption in HEIs, a similar convergence is necessary: the voluntary engagement of management and academics in a transformative exercise through collective inquiry, negotiation and consensus building as a means of enabling both parties to reflect about e-learning as a common area of concern.

Framing e-learning adoption decision between institutionalism and individualism

In face of the findings presented in the previous section, the necessary trust to confidently adopt e-learning is seen to reside in the relationship between academics and the context in which they find themselves. This is so because academics are simultaneously institutionalised subjects and institutional architects. It is the unfolding of the inter-relationship between the two dimensions – the institutional context *vis a vis* academics' creative subjectivity and calculation – that produces contingent functional means of reducing uncertainty and bolstering trust.

An immediate consequence of this proposition is the overcoming of limitations traditionally linked to rational choice and sociological institutionalism: the former being pervasively voluntarist, associating individual actors to self-interest and the maximisation of self-serving utilities; the latter subsuming individualism under institutionally-sponsored preferences. Such overcoming occurs through the dialectical convergence between academics' strategic (instrumental) action and structure (the institutional context), the outcome being deliberation and negotiation of political strategies. The filtering of academics' instrumental individual action through active participation in the shaping of e-learning strategies results in stronger identification, affiliation and appropriation of a fair structured institutional context, which favours adoption.

The dialectical convergence between academics' instrumental action and the institutional context as route for trustful e-learning adoption resonates with a structuration theory (Giddens, 1984) perspective on trust building.

Sydow (1998), in particular, argues that despite the fact that trust is very difficult to develop and sustain, it is nevertheless possible to manage the conditions (processes, routines and settings) affecting the development of trust. Having extensively addressed the issue of trust (Sydow, 1998; Sydow and Windeler, 2003; Sydow, 2006), Sydow's main contribution to the field is "a practical plea for more trust-sensitive management of organisations and inter-organisation" relationships (Sydow, 2006:378), which fits the theory of trust through organisational learning dialectic's plea for collaborative production of social and technical

norms that produce shared knowledge and a common understanding of what is expected practice in e-learning.

The constitution of trust according to Sydow's structuration perspective on trust building (Sydow and Windeler, 2003; Sydow, 2006) entails the development of interpretive schemes, resources and norms to which social actors refer interactively, thereby producing a social structure of signification and legitimation in which the object of trust is constituted and to which further action will refer.

In this sense, the production of trust is contingent on:

(i) organisational learning, as academics revise their perceptions of the affordances of e-learning, as they assimilate information, realise goals and reorient future strategies;

(ii) a transformation of the institutional environment, with an emphasis on processes of participation, access to strategic resources, and ability to shape institutional trajectories.

The integration of these findings with the wider organisational studies literature can be achieved through the concept of legitimacy, since academics as organisational actors are more likely to pursue e-learning as a valid course of action, if it is tied to strong perceptions of internal legitimacy. Theorists of legitimacy (Farndale and Paauwe 2007, Suchman 1995) have defined it as powerful concept in organisational analysis because it drives the combination of strategic and institutional factors that influence decisions in organisations. More recently, Mason (2012) acknowledges how institutional legitimacy resonates with actors' belief systems, which should prompt organisations to make decisions that are in accordance with stakeholders' shared values.

Similar arguments can be found in the e-learning literature. Parchoma (2009) proposes addressing e-learning implementation challenges – e.g. academics' motivations, pedagogical praxis, organisational cultures, organisational structures and function, organisational economies - through promoting a distributed approach to leadership via "internal negotiation of members' multiple life spaces and their associated perspectives [to] produce more effective and timely results that can be achieve by consistently applying macro or mezzo-level policies or procedures" (Parchoma, 2009:156-157).

More recently, Hardaker and Singh (2011:221) propose that the "dialectical nature of adoption of e-learning", operates a synthesis between academics' agency and the "institutional structures such as strategies, training, access to technology, technical support and time resources". The core argument contained in Hardaker and Singh (2011) is that the local context lived by academics and the top-down strategic change need to be conceptually and pragmatically bridged. In practical terms this happens when academics "perceive they are able to influence the e-learning initiatives within institutions" (Hardaker and Singh, 2011:230). They need to be involved in "strategic change that is likely to have an influence on their academic roles. Failure to acknowledge this call by lecturers is likely to result in rejection or false compliance to top down directives" (Hardaker and Singh, 2011:230).

An organisational learning perspective

In order to maintain viability and thrive in the new knowledge economy, HEIs must employ effective learning processes. HEIs should remain open systems and their prosperity depends on their ability, as organisations, to learn and adapt to threats and opportunities presented by dynamic external environments, in particular the reported growing pressures to adopt e-learning.

The e-learning related pressures for change presented throughout the previous subsections raise questions about the nature of the learning processes that are associated with organisational change. Consequently, the purpose of this subsection is to examine "organisational learning" as theoretical framework used by organisational science (Huber, 1991) to understand individual and collective learning processes, and their contribution to organisational change.

A comprehensive review of research in this area is beyond the scope of the purpose here, yet the diversity of fields in which connections between learning and organisational change occur - Argyris and Schon (1978); Levitt and March (1988); Senge (1990); Brown and Duguid (1991); Weick and Westley (1996); Easterby-Smith (1997); Gherardi and Nicolini (2001); Boreham and Morgan (2004) - warrant the effort in (1) synthesising organisational learning concepts and practices, (2) reviewing thematic tensions, (3) identifying dominant frameworks, and (4) relating the processes of organisational learning to organisational politics.

The attempt to synthesise organisational learning concepts and practices is in the first instance conditioned by the realisation that most definitions appear to be complementary (Matlay, 2000), although different orientations may suggest a more nuanced understanding of different aspects covered by general principles of organisational management. It is in this vein that Wang and Ahmed (2003) defend a taxonomy of organisational learning according to differences in focus: focus on the transformative potential of accumulated individual and collective learning; focus on a process view that stresses the importance of systems thinking; focus on an understanding of collaborative culture as an enabler of improved performance; focus on a knowledge management perspective; focus on a managerial aspiration for incremental and continuous improvement.

The focus on the transformative potential of accumulated individual and collective learning is epitomised by the assumption of individuals as agents of learning, contributing through experience and interaction to improved performance (Argyris and Schon, 1978).

The focus on a process view that stresses the importance of systems thinking draws significantly on information processing stages (i.e. acquisition, interpretation, storage, distribution) and postulates the existence of sequential stages - some emphasising leadership (e.g. Popper and Lipshitz, 2000), some emphasising cognitive processes (e.g. Crossan et al., 1999) - whereby organisations understand and manage experiences (Glynn et al., 1992).

Similarly, a focus on knowledge management is centred on the ability to acquire information, share common understandings that allow the exploitation of knowledge (Fiol, 1994) and the extraction/ derivation of insights (Fiol and Lyles, 1984) with future strategic impact: "learning is the process of linking, expanding, and improving data, information, knowledge and wisdom" (Bierly et al., 2000:597).

A complementary understanding of organisational learning emerges from the cultural perspective, in which collaborative team working and employee empowerment and involvement are presented mechanisms that enable organisations to best utilise knowledge and achieve desired goals (Drew and Smith, 1995).

Finally, when improved performance is pursued as a continuous process rather than a single product, we are in presence of an understanding of organisational learning as iterative engagement of employees to incremental innovation, which entails intentional "devot[ion] to the facilitation of individual learning in order to consciously transform the entire organisation and its context" (Pedler et al., 1991).

In an attempt to synthesise the variety of perspectives, organisational learning is understood here as an inherently complex adaptation process. It requires the conjunction of networks of individuals and groups – often with conflicting views - but also the conjunction

of functions and processes. This resounds with the latent tensions in the organisational learning literature, expressed in a series of dichotomies identified by Peck et al. (2008):

(1) The place of the individual vis a vis the place of the collective, and related contributions to the process of learning and change in the organisation (Lehesvirta, 2004);
(2) The opposition between learning understood as "acquisition" (e.g. Huber, 1991; Honig, 2008) and learning understood as "participation" (e.g. Boreham and Morgan, 2004). The former is interested in the trajectory through which cognitive skills develop in individuals, whereas the latter is interested in cultural practices and socially negotiated processes of change;
(3) The co-existence of normative (prescription-based) and empirical perspectives (descriptive and analytical) to organisational learning.

Being a means of achieving strategic renewal through making adaptations to objectives and routines, organisational learning may additionally entail readjusting goals, governance and operational rules. By engaging academics and managing authorities in appreciative inquiry of the aforementioned conditions, it potentially contributes to the processing of information that changes and aligns the range of behaviours.

Ultimately, the process is geared towards generating plurivocal understanding and harmonised outcomes regarding e-learning. What prevails is therefore an instrumental and output perspective on dialogical practice, the objective being the rationalisation and aggregation of collective views into a coherent whole. What changes as a result of the organisational learning process is academics' behaviour and cognitive system. Trust in e-learning as a desired state or behavioural change goal occurs with negotiated changes to organisational routines and HEIs' standard operating procedures.

This is essentially a reflection strategy that emphasises how academics as change agents make sense and socially construct understandings of the buzzing changes they experience when confronted with e-learning. The organisational learning endeavour is a meaning-making exercise, with a view to changing mindsets through the revision of structures, procedures and behaviours. Getting academics to share and socially construct cross-understandings and shared understandings of e-learning will increase the likelihood of collective learning and help manoeuvring the change journey.

However, strategic renewal as a consequence of e-learning adoption is complicated, as it depends upon individual, jobs and structural characteristics, as well as on existing culture and reward/ recognition systems. The contention here is that HEIs will become more apt at managing the change introduced by e-learning as they adopt practices to promote the dynamic move of knowledge repertoires through a series of evolving stages involving the individual academic, academics as a professional group and the wider HEIs as an organisation.

This is achieved through negating the traditional bureaucratic structure in which individuals had no space for learning and were consequently tied up to a repetitive set of forms, rules, conventions, activities, technologies and procedures that underpinned organisational functioning. An organisational learning dialectic is aimed precisely at developing the knowledge base necessary to question the repetitive set of organisational activities and existing protocols.

Critical aspects of cultural analysis are essential in this questioning. It is especially important to: (1) establish and question which discourses are more visible and accorded most power by groups; (2) understand how academics are represented within HEIs; (3) elucidate what borders define the territories of academic practice, including what identity is

constructed for those within such borders; (4) determine what cultural capital is attributed dominant status. Academics weigh up evidence from these multiple sources in the aggregate to make their decision as to trust or not in e-learning, acting as auditors of the trustworthiness instilled by HEI's decisions, arrangements and organising procedures. This is the main reason why the organisational learning dialectic should seek to identify the larger problems in academics' work lives and environments, with a view to making local productive changes in dysfunctional patterns of e-learning appropriation.

A focus on academics' interests will link cognition at individual, group and institutional levels and help HEIs to find, select and organise both information and expertise needed to achieve organisational vision and integrated action. The approach starts with academics' articulation of their experiences with e-learning. They then move on to problem identification from those experiences, they gradually progress to critical analysis of forces contributing to problems, and finally they collaborate with managing authorities to action responses to address the problems detected.

Conclusion

This study provides valuable insights for those who are confronted with the need to appraise academics' experiences and practices, in the context of e-learning implementation. Due to its interpretive nature, the findings cannot be representative of all academics and all HEIs However, in the qualitative tradition of organisational research, they provide understanding and knowledge into the world of lived experience (Denzin and Lincoln, 2005).

Both academics and the managing authorities of HEIs need to look at the limitations and possibilities for *praxis* introduced by e-learning. This is only possible under an institutional arrangement that respects the capacity for human agency, and the possibility for heteroglossic discourses regarding what it means to be a good academic under the affordances of e-learning.

Additionally, this demands the recognition that material structures and power structures may operate as barriers, hence the need to stimulate collective inquiry, negotiation and consensus building as a means of enabling managers and academics to reflect about e-learning as a common area of concern.

The expectation is that the clash of polarities evidenced in the data collection operates as a trigger for change, bringing heretofore latent forces – either anchored in or contesting historically constructed inconsistencies – and engaging them in the dialectic reconfiguration of organising procedures to accommodate e-learning.

The objective is to spur trust in e-learning through organisational learning, which entails creating and diffusing knowledge across HEIs, and developing satisfactory social exchange mechanisms that act as trust catalysts. To accomplish this end, it is necessary that both academics and managing authorities appreciate and value the current aspects of HEIs (what they are), envision what they might be, dialogue about what they should be, and innovate about what they will be.

Further research should continue to explore the ways in which "trust can be profitably approached in organisation theory through the interaction of organisational forms and managerial philosophies" (Creed and Miles, 1996:34). It should pursue the conceptualisation of e-learning adoption as a mixed-motive process - posing dilemmas to academics' individual self-interests and institutional structural interventions and solutions - focusing more specifically on understanding how can organisational and psycho-social factors converge to jointly shape positive sentiments and a sense of professional accomplishment.

At a deeper level of analysis, the interactive relationship between the steps and processes of e-learning adoption on the one hand and the persistence of typified and symbolised spaces of action within and around HEIs Institutions on the other could be expanded in the light of Strauss's (1993) Social Arenas theory, in an attempt to grasp and represent "the perspectives and properties of all major actors (including collective social worlds and nonhuman actors) in a particular arena of mutual concern in which certain actors are implicated" (Clarke and Casper, 1996:602). In the case of e-learning adoption this would imply extending the scope of the study to capture and understand the perspectives and properties of HEIs' management structures, the sentiment of students' towards the role of educational technologies, and the dimension of educational policy.

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Figure 1 - The conditional/ consequential matrix

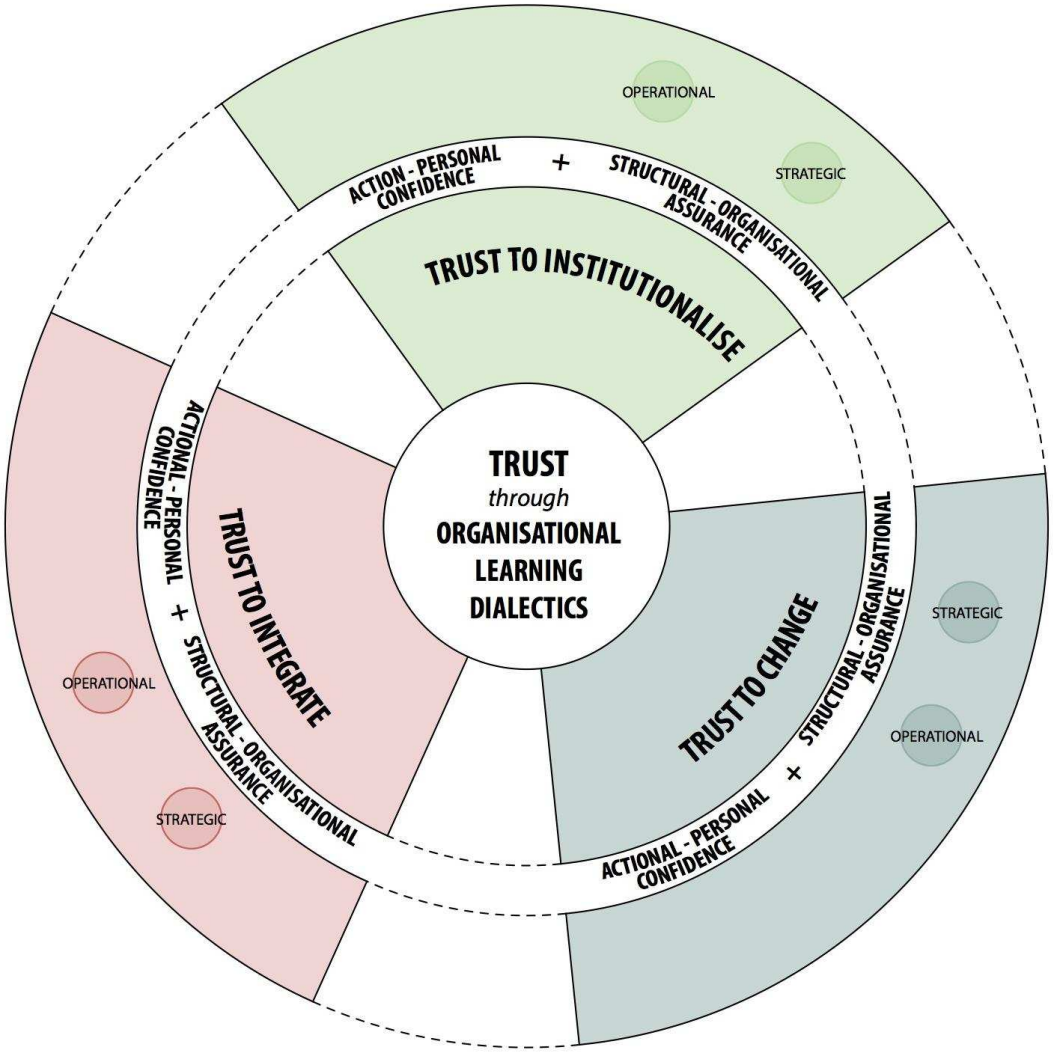

Table 1 - The presentation of emerging main theme, barriers and representative quotations (Trust to change)

Categories			Barriers	Representative statements
Trust to change	Actional-personal confidence		Perceived lack of relative advantage	"They were unable to perceive any usefulness in its existence and found it extremely complex and time-consuming to use" (Q21:2:2).
			Student-centred learning paradigm	"This entire buzz about student-centred learning sounds fabulous but to me it is all too idealist and it does not fit day to day teaching" (Q15:11:20).
			Unrealised pedagogical value	"The willingness to adopt e-learning is, in my opinion, dependent on how much teachers understand why it is worth doing it" (Q19:16:26).
			Unrealised managerial and delivery efficiency	"I would say the problem lies with a perception of value, it takes personal conviction that e-learning brings about more gain than pain" (Q30:29:56).
			Insufficient intrinsic motivation	"It is absolutely fundamental to have an intrinsic, genuine belief in the potential of technology or in the ability of new technology and services to generate benefits" (Q48:5:8).
			Epistemological disagreement	"One of my concerns is that e-learning platforms typify and reproduce traditional delivery models that resemble programmed instruction, which I have always avoided in my practice as a teacher" (Q1:15:19).
			Technological determinism	"My fundamental issue with e-learning is the systematic fascination and the irrational allure that new technology exerts over people" (Q9:7:8).
			Risk avoidance culture	"Fear and distrust are the most general feelings I can sense in academia regarding e-learning" (47:48:102).
			Defensive routines	"A poor teacher can easily get away simply with spending their time reading notes loud in a lecture theatre" (Q15:23:42).
			Diverse knowledge bases	"Disciplinary differences are an obstacle to a smooth mainstreaming of e-learning" (Q18:21:44).
			Ownership and control of knowledge	"They are not willing to give up control and property without expecting some sort of benefit" (Q3:25:50).
			Occupational mindsets	"The objective of e-learning policies is to erode the professional standing of academics, to undermine their credibility, which was solidly established in societies as the creators of knowledge" (Q1:19:24).
			Definitional profusion	"E-learning is a very complex entity, not easily definable. It's not possible to encapsulate all that it means in a simple sentence" (Q29:2).
			Resistance to innovation	"There is a resistance against technology and there is resistance against the status of knowledge or the representation of knowledge status" (Q3:7:11).
			Erosion of high status professional identity	"The erosion of professional status is one of academics' main concerns. I would dare to say that these are political and ideological matters" (Q7:30:50).
			Prejudice	"The simple suspicion that e-learning may cause breaches in reputation or prestige is enough to dissuade take-up" (Q32:41:70).
	Structural-organisational assurance	Strategic	Monolithic academic culture	"Ideas and processes remain unchangeable and people are so comfortably accommodated to their habits that they claim for continuity" (Q2:16:23).
			Cost-cutting driven policy	"It may be very risky to develop e-learning in Higher Education if the strategy is purely economically-driven" (Q42.29.57).
			Governmental patronage	"The government's vision does not translate into a clear strategy. I would dare to say that it seems that a coherent vision for the Higher Education sector is actually missing" (Q14:43:70).
			Market-driven adoption	"There are good expansion opportunities for our traditional student base. These opportunities are afforded by e-learning. There is clearly an e-learning market" (Q24:40:207).
			Outdated management-held core values	"Most of the e-learning systems that are now being implemented are outdated, square, old-fashioned and useless" (Q1:40:51).
		Operational	Bureaucratic overload and internal fragmentation	"The administrative demands are so extenuating that our relational and social identities as academics are obliterated" (Q34:30:32).
			Measurable goals and performance feedback	"I welcome any change to current performance appraisal procedures, which I consider to be amoral and decredibilising for the academics' profession" (Q29:15:26).

Table 2 - The presentation of emerging main theme, barriers and representative quotations (Trust to integrate)

Categories			Barriers	Representative statements
Trust to integrate	Actional-personal confidence		Extended teaching presence	"We are busy day and night, all the time, even during weekends. Working rhythms and patterns are intensified are very distinct to traditional teaching (…)" (Q3:35:70).
			Temporal frames of work	"E-learning changes the temporal dimension; it imposes a new temporal regime and imprints new rhythms to the teaching practice" (Q11:43:79).
			Lack of functional and technical expertise	"(…) Over and over I hear the same excuse: academics don't react positively towards educational technology; they barely used the systems that were being tested (…)" (Q7:3:3).
			Unprepared students	"Students are generally unprepared to deal with the degree of self-regulation imposed by e-learning. E-learning emphasises emerging autonomy and responsibility of students to take charge of their own learning" (Q16:29:108).
			Self-interest and opportunistic behaviour	"The issue of self-interest is related to the personality characteristics of each individual. Some individuals are naturally competitive and all they worry about is the speedily advancement of their careers. It's legitimate" (Q4:27:32).
	Structural-organisational assurance	Strategic	Low learning and teaching-oriented values	"(…) Anyone who favours excellence in teaching will end up being penalised in terms of career advancement" (Q44:37:53).
			Pervasive research culture	"It is undeniable that academics' career is geared towards scientific output. All aspects related to the scholarship of scientific research are documented in institutional regulations" (…) (Q15:15:31).
			Lack of recognition	"I am actually perceived as a threat or an aggressive agent that undermines the status quo. It exposes my peers' debilities if I use online learning environments and my colleagues do not. So internally there is not a shred of recognition or appreciation" (Q3:36:74).
			Low levels of participation and communication	"There is no public, open policy, there is no discussion. There seems to be a closed private script, and we should be a community that works collaboratively around shared objectives (…) (Q11:60:113).
			Power structures and relations	"The Pedagogical Council is blocked and unable to advance because its mandate and standing is not at the decision-making level. It is the ideal place to make e-learning actionable but the power structured block decisions from this body. It has a consultative status" (Q10:35:62).
		Operational	Insufficient incrementalism	"(…) It is an incremental process in which academics adapt to new functions, gradually learning how to respond to demands from students and how to monitor students' work (…) (Q10:48:98).
			Perceived incompatibility with work rules and regulations	"Formally, there is no administrative instrument to count my teaching contribution online. Nothing is regulated, and consequently there is very little accountability (…)" (Q8:5:6).
			Forced top-down change	"Vertical imposition of e-learning will only lead to wealth of superficial and dissatisfied users" (Q20:10:19)

Table 3 - The presentation of emerging main theme, barriers and representative quotations (Trust to institutionalise)

Trust to institutionalise	Actional-personal confidence		Bounded rationality	"I don't want anything too complicated. I want a system that makes my life easier. And everyone thinks in these rational terms. If e-learning makes my life harder and if because of it I take longer to complete my tasks, the I say no to it (…)" (Q6:28:51)
			Past experiences of failure and conflict	"I witness incredible situations such as colleagues of mine being desperate because they had lost their contents online due to system failures (…)" (Q9:35:42).
			Increased visibility	"To some teachers the idea of greater openness and increased visibility introduced by e-learning works as mental barriers to adoption" (Q39:12:39)
			Reputation risk	"(...) Students' pressure on academics to adopt e-learning will lead to widespread adoption, even amongst resistant staff" (Q19:24:37).
			Leakage of confidential information	"There was no way I could rest assured the learning management system operated in strict conformity with my data safety and confidentiality expectations" (Q9:9:10).
			Unfulfilled autonomy to design learning experiences	"Academics need to be empowered agents, enjoy creative freedom and take responsibility for their learning designs with e-learning systems" (Q40:24:68)
			Misconceptions of successful adoption	"Technology can propagate the continuation of erroneous teaching and learning models, hundreds of static boring pages and no interaction" (Q22:28:47)
	Structural-organisational assurance	Strategic	Lack of clear mandate for implementation	"The implementation of e-learning cannot be approached carelessly or left to the personal will of agents. A clear political commitment from management is necessary (...)" (Q3:14:25).
			Lack of organisational homophily	"E-learning implementation strategy needs to be responsive to a collegial dialectic. Otherwise, it will face individual resistances and barriers. And it's undeniable that universities revolve around the individuality of the academic" (Q5:9:6).
			Turfism	"Universities are balkanised and departments operate as barricades. People think according to affiliations (…) It's difficult to get academics to think laterally about pedagogical problems that are common to us all" (Q45:59:87).
			Fear of administrative control and disciplining	"I believe that e-learning instils fear of an increased control over what is taught and how it is taught. Some teachers did very little and with e-learning there is no possible escape because there is a record of every activity" (Q19:35:60)
			Inconsistent organisational strategy	"There is duplication of processes and a general lack of articulation. Rules are not clearly defined and no one really knows about e-learning terms and conditions. The result is chaos (...)" (Q16:1:3).
			Misalignment with educational strategy	"There are no attempts to establish a vision for teaching and learning or a concern to align this with an e-learning strategy" (Q8:38:57)
		Operational	Lack of a responsive normative system	"It is essential to make normative principles explicit to foster academics' trust in e-learning. I t is a principle of transparency, of knowing what they are committing to (…)" (Q36:40:88)
			Intellectual property rights	"Many academics are sceptical about the initial investment associated with the production of online content, and concerned with the property of that content" (Q5:18:16).
			Insufficient reward	If an institution's intention to mainstream e-learning is to be taken seriously, it is essential to implement responsive reward systems (…)" (Q5:12:7)
			Inadequate specialised services	"Specialised services dedicated to support the development of technology mediated learning objects are absolutely necessary" (Q9:23:27).
			Underestimated organic development	"(...) an organic model of development would work well and contribute to a practical implementation of e-learning at local level more rapidly, operating by cross-fertilisation" (Q15:34:60).
			Inconsistency between adoption goals and success criteria to evaluate them	"There is no coherent sense of direction or policy or agency empowered to regulate e-learning and critical aspects such as online teaching times" (Q5:14:10

Appendix 1 – Interview guide

Stage 1 Interview Guide

1 – Can you describe your personal experience as a user of e-learning?

2 – As a teacher, what would you define as the major benefits associated with the implementation of e-learning systems in Higher Education Institutions?

3 – Which factors determined your decision to adopt e-learning systems?

4 – Do you feel your institution encouraged you and supported you in the decision to adopt e-learning? How?

5 – Have you felt any resistance or do you sense any barriers to e-learning adoption? What in your opinion are the most significant barriers to a more generalised mainstreaming of e-learning at institutional level?

6 - Do you feel you had to adapt or change your teaching style and teaching philosophy as a consequence of adopting e-learning? How would you describe this process?

7 – How do you describe the level of support available at your institution? Is there adequate technological support, training, and content development support?

8 – How do you think universities can stimulate the adoption of e-learning by academics?

Questions introduced in Stage 2 Interview Guide

1 – Reflecting on your personal and professional practice, and also in your identity as an academic, what do you think are the most fundamental barriers and enablers to successful e-learning adoption?

2 – Why do you think e-learning was adopted in this university?

3 – Can you describe any institutional initiative that you feel has influenced your decision to adopt e-learning?

4 – Were there any changes in your institution with a view to preparing the implementation of e-learning?

5 – From the point of view of academics, what do you think are the greatest challenges and opportunities related to an effective use of e-learning in universities?

6 – In your opinion, should e-learning be considered as an indicator or as requirement in the recruitment, performance appraisal and promotion of academics?

7 – Do you feel personally and professionally fulfilled and adequately rewarded for your choice to adopt e-learning? Do you feel your investment is adequately acknowledged and compensated?

Appendix 2 - Coding stages and the emergence of codes, categories, near-core categories and core category

SELECTIVE CODING		AXIAL CODING		OPEN CODING
TRUST THROUGH ORGANISATIONAL LEARNING DIALECTICS	Trust to change	Actional-personal confidence		Insufficient intrinsic motivation Definitional profusion Perceived lack of relative advantage Unrealised managerial and delivery efficiency Unrealised pedagogical value Epistemological disagreement Technological determinism Occupational mindsets Student-centred learning paradigm Diverse knowledge bases Ownership and control of knowledge Defensive routines Risk avoidance culture Resistance to innovation Prejudice Erosion of high status professional identity
		Structural-organisational assurance	Strategic	Monolithic academic culture Outdated management-held core values Cost-cutting driven policy Governmental patronage Market-driven adoption
			Operational	Bureaucratic overload and internal fragmentation Measurable goals and performance feedback
	Trust to integrate	Actional-personal confidence		Lack of functional and technical expertise Extended teaching presence Temporal frames of work Unprepared students Self-interest and opportunistic behaviour
		Structural-organisational assurance	Strategic	Pervasive research culture Low learning and teaching-oriented values Lack of recognition Low levels of participation and communication Power structures and relations
			Operational	Perceived incompatibility with work rules and regulations Forced top-down change Insufficient incrementalism
	Trust to institutionalise	Actional-personal confidence		Unfulfilled autonomy to design learning experiences Misconceptions of successful adoption Past experiences of failure and conflict Bounded rationality Reputation risk Increased visibility Leakage of confidential information
		Structural-organisational assurance	Strategic	Fear of administrative control and disciplining Lack of clear mandate for implementation Inconsistent organisational strategy Misalignment with educational strategy Turfism Lack of organisational homophily
			Operational	Lack of a responsive normative system Insufficient reward Intellectual property rights Inconsistency between adoption goals and success criteria to evaluate them Inadequate specialised services Underestimated organic development

Appendix 3 – The three-layered model of trust, integrating codes, categories, near core categories, and core category.