ORGANISATIONAL LEARNING: CONCEPTUAL CHALLENGES FROM A PROJECT PERSPECTIVE

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Abstract: Organisational learning has been widely acknowledged as holding the key for companies to survive and prosper and has, in recent years, gained currency in construction management research. Much research centred upon the study of organisational learning as a process, as well as the view and understanding of companies as learning organisations. However, non-construction management researchers have recently begun to recognise the incoherence of the concepts presented in the literature and identified a lack of a solid theoretical and empirical foundation. To further exacerbate the challenge of embracing organisational learning in construction, the industry is largely project based, thus increasing the difficulties for organisational learning to occur. This review paper suggests that past research into organisational learning had also mainly concentrated on an intra-organisational perspective and where construction is specifically concerned, on project partnering. However, we regard such a focus to be myopic as a means of exploring organisational learning at the construction project level. As such, a number of research challenges are recommended including the need to examine organisational learning beyond project partnering; an emphasis on the interorganisational dynamics involved in both the process and outcomes of organisational learning and the investigation of construction projects as learning networks.

(198 words)

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INTRODUCTION

Over the last decade, there has been a blossoming interest shown in the area of organisational learning (e.g. Barlow and Jashapara, 1998; Holt *et. al.*, 2000; Kululanga *et. al.*, 2001) within construction management research. It has been widely recognised that knowledge holds the key to success and that learning is vital for organisational survival and prosperity (e.g. Argyris, 1991; Nonaka, 1991). Matching this rising interest in organisational learning, however, is a growing dissatisfaction with the lack of clarity of the concept of organisational learning and its often-confusing association (and synonymy) with that of learning organisation (e.g. Huysman, 2000; Lähteenmäki *et. al.* 2001; Lipshitz *et. al.*, 2002). Furthermore, as the discussion of this paper unfolds, it is felt that the research effort into organisational learning had hitherto focussed on the study of companies, without paying attention to the project-based nature of the industry. Groák (1994) describes this inherent weakness as a "failure to recognise that the site was the defining locus of production organisation (p. 288)" and argued that analytic frameworks should appreciate that construction is "essentially organised around the project, not the firm", and embrace the legitimately *"ad hoc"* nature of construction projects as "temporary coalitions in a turbulent environment requiring unpredictable (but inventable) configurations of supply industries and technical skills (p. 291)". Yet, by suggesting that "in aggregating projects up to 'the sector' [...] a technology paradigm may emerge, in which concepts of [...] organisational learning take their rightful place in our analyses", Groák (1994) had inadvertently raised the question as to whether organisational learning at the construction project level is applicable. The fundamental aim of this paper, therefore, is to review the salient points of the

literature on organisational learning, identify the gaps and seek to address the relevant issues surrounding the nature of construction projects.

ORGANISATIONAL LEARNING AND/OR LEARNING ORGANISATION

Organisational learning research has been taking two main streams. The first views organisations as anthropomorphic entities that actually integrate individual learning and translate it into action for the organisation's benefit; the second is concerned with the identification of behaviours which inhibit or disable individual learning (Phillips, 2003). Examples of work dealing with the former include Kolb (1984) who developed the oft-quoted experiential learning model; Schön (1983, 1991) who proposed moving from technical rationality to reflection-in-action; Argyris (1991) who examined the way professionals learn as individuals and subsequently distinguished between espoused theory of action and theory-in-use; and Dixon (1994) who charted the five categories of organisational learning, namely information acquisition, information distribution and interpretation, making meaning out of information, organisational memory and retrieval. On the other hand, contributors towards understanding the conditions that influence learning include Senge (1990) whose five disciplines of mental models, team learning, systems thinking, shared vision and personal mastery elevated the field of organisational learning both in the industrial and academic world; and Garvin (1993) who suggested that fostering a conducive learning environment meant that time was needed for reflection and analysis, and that boundaries should be opened up to establish a supportive environment strengthened by core learning skills. According to Lähteenmäki et. al. (2001), therefore, "the emphasis on organisational learning and learning organisation research has clearly been based on either individual process

research or on the organisational conditions for learning (p. 114)". They, however, postulated, "the aim of making a clear-cut separation between an organisational learning process and the elements of a learning organisation (and vice versa), and thus studying them whilst disconnected from each other has not […] furthered the building of a holistic picture. Instead it has only led to the oversimplification of a complex phenomenon (p. 115)". This oversimplication, we believe, represents the underlying assumption that organisational learning should lead to the creation of a learning organisation. Thus, we strive to debate this link so as to put forward a number of conceptual challenges particularly where construction projects are concerned.

Our frustration stems from three areas: the abstract and ambiguous nature of organisational learning, a lack of empirical evidence and the impetus of learning as suggested by the literature.

Nature of the concept

Lipshitz *et. al.* (2002) acknowledged that "literature on organisational learning has not necessarily led to a clearer understanding of what it means to be a learning organisation" and suggested that "as with many issues in the social sciences, the more closely the phenomenon of organisational learning has been observed and studied, the more complex and ambiguous it has become (p. 79)". Indeed, metaphors (e.g. organisational *memory*) and analogies (e.g. Argyris's (1991) use of *a thermostat* to explain the idea of single and double-loop learning) are commonly used in the ever-increasing quest to expand the definition of the concept. While this may be necessary in developing the concept in the abstract sense, Armstrong (2000) feared

that by concentrating on the abstract written language, we take ourselves away from the "sensual collaboration with our world, essentially, and to our detriment, letting the most of it fall out of focus (or 'pincushioned') (p. 355)".

Unsurprisingly, several commentators from the non-construction field have recently called for conceptual clarifications. Huysman (2000), for instance, indicated, "in order to create a learning organisation that is good in organisational learning, we first need to have more conceptual understandings about processes of organisational learning", but accused the literature for being too conceptual and insights "scattered and unordered". She went on to stress that "despite the growing number of process-related publications, it still seems to be difficult to gain a solid understanding of the details of learning processes (p. 134)". Armstrong (2000) supports this view by stating that "before we lobby for such an organisation and begin construction... it would be good to know just what it is we are building (ibid.)". Sun (2003) lamented, "unfortunately, in theory as well as in practice, some people [...] are rather careless in using the concepts of 'organisational learning', 'learning organisations' and 'a learning organisation'". Sun's (2003) interesting methodology used language to seek clarifications as he concluded "organisational learning refers to the learning process of an organisation and by the organisation in a collective (organisational) way". In this sense, Lähteenmäki et. al. (2001) were appropriate in identifying their first conceptual gap by stating "too much emphasis on the learning of individuals instead of on the learning of organisations". Lipshitz et. al. (2002) share this criticism as they recognised that there is still a gap to be reconciled, that of attributing "a human capacity (i.e. learning) to a non-human entity (i.e. an organisation)", for "while individual learning is primarily a cognitive process that occurs 'inside people's

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heads' and can be fairly well understood through cognitive conceptual lenses, organisation learning is a complex interpersonal process occurring through structural mechanisms in a social arena". Put another way, both Lähteenmäki's *et. al.* (2001) and Lipshitz's *et. al.* (2002) concerns indicate the fact that research has not yet achieved Sun's (2003) clarification of organisational learning as a collective learning process.

Sun's (2003) further clarification on 'learning organisation' is to unveil yet a more useful revelation. Accordingly, the term 'learning organisation' can be viewed as either dynamic or static: the former being an organisation that is continually learning and the latter being an organisation that is for learning. This claim is in congruence with Lipshitz's *et. al.* (2002) distinction between learning *by* the organisation and learning *in* the organisation as they propose a multifacet model of organisational learning to marry the two (see Figure 1). Lipshitz *et. al.* (2002) posit that *"learning by* organisations occurs when individual *learning in* occurs within the context of Organisational Learning Mechanisms (OLMs)[1] that ensure that people get the information they need and that the products of their reflections are stored and disseminated throughout an organisation [...] consequently, organisational learning cannot be properly understood without using social, political and cultural lenses in addition to cognitive lenses (p. 93; *emphasis* added)". Through synthesising organisational learning literature, practitioner accounts and past experiences, Lipshitz *et. al.* (2002) came up with the five facets of organisational learning, namely

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[1] Lipshitz *et. al.* (2002) locate Organisational Learning Mechanisms (OLMs) within the structural facet of their model. They believe that both individual and organisational learning involve the processing of information. However, while it is possible to study how individuals process information given the identifiable attributes of the nervous systems in living organisms, OLMs therefore are observable organisational subsystems in which members interact for the purpose of learning. A common OLM cited is the after-action or post-project review.

contextual, policy, psychological, cultural and structural facets, which are briefly explained below:

- Contextual facet – refers to exogenous factors that management either control indirectly or have no control at all. This includes what Lipshitz *et. al.* (2002) term as error criticality (i.e. the immediacy and seriousness of the effects of errors), environmental uncertainty (i.e. the rate of change), task structure that is linked to the feasibility of obtaining valid information and people's motivation to cooperate with colleagues in learning, proximity to the organisation's core mission, and leadership commitment to change resulting from learning.

- Policy facet – distinguishes between formal and informal steps taken by senior management to promote organisational learning, and include such measures as recognition and reward and the installation of OLMs.

- Psychological facet – encompasses psychological safety, without which it would inhibit personnel from taking the risk of learning; and organisational commitment, without which it would lead to reluctance of personnel to share information and knowledge.

- Cultural facet –defined as the norms that are likely to produce valid information and a commitment to corrective action. This includes transparency (i.e. openness of one's thoughts and actions in order to receive feedback), integrity (i.e. collecting and providing information regardless of implications), issue orientation (i.e. focussing on relevance of information regardless of the social standing or

rank of the recipient or the source), inquiry (i.e. persistence of investigation until full understanding is achieved) and accountability (i.e. assuming responsibility of learning and implementation of lessons learnt).

- Structural facet – refers to the organisational learning mechanisms that could either be integrative (i.e. the person learning is also the person performing the task) or non-integrative (i.e. the person learning is not the person performing a particular task).

----- Figure 1 goes here-----

It is worth emphasising that the structural facet has been intentionally placed as the last of the five, not because it is not important, but rather to follow the way Lipshitz *et. al.* (2002) mapped the five facets in their original model, which was presented as a linear path (somewhat similar to a process map) starting with the contextual facet, connected by the policy, psychological and cultural facets and culminating in the structural facet. We have, however abandoned the 'process' approach in favour of the one depicted in Figure 1 above since, in our opinion, it is more useful to use the conceptual framework to understand the attributes that result in the ideals of learning organisation as opposed to defining and proving the causal links between the facets. Moreover, Lipshitz's *et. al.* (2002) conclusions appear to support this point as they qualified that although "the cultural, psychological, policy and contextual facets mapped represent a step toward an integrative theory of organisational learning, they do not denote a set of necessary conditions for learning; that is, we do not hypothesise that all causal links in the map must be realised in order for learning to

occur. Rather, we assume that represents an ideal whereby each positive link increases the likelihood of organisational learning (p. 93)". They went on to suggest "different organisations can manage to learn productively while enacting very different configurations of the facets". We therefore recommend that an understanding of what these configurations might be more useful in analysing organisation learning at the construction project level. This would also be in line with Groák's (1994) remarks that "different sectors of construction use fundamentally distinct resource and skill bases" as he reinforced the need to move away from "the idea of 'one technology, one industry' (p. 291)".

Furthermore, placing the structural facet as the ends as compared to the means is thought to be appropriate since it is noticed that much emphasis has thus far been focussed on the "systems-structured approach" (noted by Holt, 2000). Following Lipshitz's *et. al.* (2002) line of argument, this is deemed to be myopic. We incidentally observe that the academic discourse in knowledge management, which is often associated with organisational learning, tends to accentuate a structured approach. For instance, Stiles and Kulvisaechana (2003), when reviewing the link between human capital and performance, began by stating that organisations have "to leverage the skills and capabilities of its employees by encouraging individual and organisational learning and creating a supportive environment in which *knowledge can be created, shared and applied (emphasis* added)". The distinction between organisational learning and knowledge management is even less clear in a recent skills review by Bloom *et. al.* (2004), where they enmeshed "organisational learning, and *knowledge creation, sharing, retention and management (emphasis* added)" when discussing knowledge management systems. We prefer to take the view that

knowledge management is a subset of the holy grail of organisational learning. By this token, the study of organisational learning should encompass much more than the structural underpinnings of knowledge management. Indeed, we share Wild's (forthcoming) insight that "the diffuseness of construction requires a *significant* tacit order (*emphasis* added)", but questions the assumption of knowledge management that "this is (only) accessible to structured inquiry". Therefore, it is believed the Lipshitz's *et. al.* (2002) Model offers, for the first time, a holistic conceptual framework that could potentially explicate the links between organisational learning and learning organisation beyond the dominance of the structural approach.

Lack of empirical evidence

Huysman (2000) emphasised "despite its popularity, the ideas concerning the learning organisation more often than not lack a solid theoretical as well as empirical foundation (p. 133)". Yet, the shortage of empirical evidence seems only natural. Lähteenmäki *et. al.* (2001: 114) exuded "the feeling that little has been done to develop valid measures for organisational learning" and ascribed this to be "the reason for a striking lack of comprehensive empirical research in this area (see also Huber, 1991)". They suggested that since "the very concept itself still is vague [...] it is of course impossible to measure the phenomenon without knowing what is".

Indeed, much empirical research really represents the conduct of surveys (questionnaires, interviews) that are constructed to confirm a specific aspect of the researcher's chosen terms to understand the real world. For instance, Martin (2001) used results from a series of interviews to show that female-owned/managed firms are better at organisational learning than their male counterparts; Hodgkinson (2002)

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explored the existence of shared strategic vision through focus group discussions with sixty middle managers over three years; and Phillips (2003) utilised a questionnaire survey, administered to four functional employee levels, to investigate his ideal learning organisation model comprising ten key characteristics, and so on. In spite of the value of these results in challenging the frontier of existing knowledge, it can surely be argued that without a grounded conceptual framework, these observations merely contribute to the increased ambiguity and pincushioning mentioned earlier.

Studies that appear to delve deeply into the concept within organisations bear yet another major weakness – the study of organisations as singletons. Sun (2003), in distinguishing between 'learning organisation' and 'a learning organisation', construed the former "as a subject of scientific study and research" and the latter being "a 'living' representative of the image of 'learning organisation' (p. 158)" and established that of the eleven principal definitions available on the concepts, he could not find any that categorically fall into the 'learning organisation' group. He rightly argued that researchers have merely paid attention to 'a learning organisation'. Henderson and McAdam (2003), for example, focussed on the internal communication process through an organisational learning perspective of a large electrical utility company in Northern Ireland. Whilst their research acknowledged the importance of change in the view of the external competitive environment, and consequent need for organisational learning, it is regrettable that the researchers did not observe the effect the external environment had on the learning and communication process. Despite having clearly identified such external stakeholder relationships as the link between power-generating bodies and the company's power

procurement business unit, Henderson and McAdam (2003) went no further than to stick closely to an intra-organisational perspective. This approach, we argue, is not appropriate for the research challenge of looking at construction projects.

It would, however, be naïve to think that project-based organisational learning has never taken a foothold in organisational learning research. Examples abound and include Barlow and Jashapara (1998) who explored the role of partnering in fostering organisational learning on construction projects; while Prencipe and Tell (2001) investigated inter-project learning processes and outcomes in project-based firms. Szymczak and Walker (2003) also focussed on organisational learning from a project perspective by studying the impact and potential of the Boeing Company to better leverage knowledge from their portfolio of projects. However, these studies have largely been based on looking at organisational learning from an intra-organisational perspective. With the exception of Barlow and Jashapara (1998), the other two studies were merely extending the study of an organisation as a singleton to investigate learning at the project level. Again, while the recommendations of Prencipe's and Tell's (2001) learning landscape (or the mix of project-to-project learning mechanisms that a firm can adopt and implement) and Szymczak's and Walker's (2003) call for an enterprise project management culture may be insightful, they do not address the temporary multi-organisational nature of construction projects since the focus was on a particular firm in the design of their studies.

Barlow and Jashapara (1998), on the other hand, identified four key characteristics of construction partnering projects that make organisational learning difficult to occur. They include (i) the inherent tensions and conflicts between clients and suppliers; (ii)

the ability to codify knowledge dependent on how long-term the partnering relationships are; (iii) the way knowledge is retained and distributed; and (iv) internal political and cultural environments that enable or inhibit communication structures. It is, however, disappointing that they did not go beyond this identification to analyse the interorganisational perspective that is most needed in construction projects. Rather, the manner of their reporting seem to place a greater emphasis on the portrayal of the client's role in organisational learning, as they observed "in the case studies, it was clear that most individual interviewees claimed they had learned substantially from their experiences" and noted "arguably, however, this was not always harnessed, especially in the smaller contractors and suppliers (p. 94)". It is noticeable that their analysis has leaned towards the view of clients spearheading organisational learning. However, it is felt that the danger of such conclusions, without necessarily exploring much deeper into the issue of leadership of learning (i.e. who, if any, is responsible?) on construction projects, is to deny construction firms the opportunity to aspire to become learning organisations. As far as it is known, Holmqvist (2003) is the only one who has compared empirically the unique dynamics of interorganisational learning processes, although not specifically directed at a project level that is similar to that of construction.

Thus, having recognised the lack of thorough empirical research into organisational learning, we are convinced that the Lipshitz's *et. al.* (2002) Model is again potentially valuable in providing the necessary solid theoretical underpinning. Moreover, it is crucial that the pursuit of empirical evidence should transcend the current prevalence of the intra-organisational perspective to take into account the

interorganisational dynamics that is highly appropriate in the study of organisational learning at the construction project level.

Impetus for organisational learning

The aspiration of organisational learning originates chiefly from change, particularly on strategic change, as Burnes *et. al.* (2003) illustrate that the four common propositions of organisational learning relate to change and degree of instability of the environment and the need for, and ability of, the organisation to cope with such change. As Burnes *et. al.* (2003) summarise "these propositions are based on arguments put forward by proponents of organisational learning that change is now so fast and so prevalent that if organisations fail to keep pace with it they will not survive, and the speed and prevalence of change is such that it cannot be managed in the traditional manner by a few senior managers, but must become the responsibility of everyone in the organisation (p. 453)". Indeed, we observe the abundance of research aimed at learning to cope with change, so-called adaptive learning. However, several writers, e.g. Bennett (1998) have noted that "learning can be adaptive or generative" and defined the former as "that which enables the organisation to do better what the organisation is currently doing" and the latter as that which "challenges and redefines the basic requirements of the tasks and how they should be undertaken (p. 7)". See also Senge (1990), Argyris (1991) and Huemer and Östergren (2000) among others. Murray (2002) went further to suggest that there is currently an incomplete cycle of organisational learning as he coined the term 'unbounded learning' and demanded that "the culture of the business will need to change from one that is established purely on adaptive learning to one accommodating both adaptive and generative learning (p. 242)". Nonetheless, it is

felt that the focus placed on adaptive learning could lead to two detrimental outcomes.

First, because the perceived cause for the need to learn comes mainly from strategic change, much of the focus has inevitably been targeted on managers with very little studies on employees at the lower levels (Findlay *et. al.*, 2000). This not only contradicts the earlier recommendation by Burnes *et. al.* (2003) that learning should be the responsibility of everyone, but also, if Argyris's (1991) argument that professionals do not necessarily know how to learn well were to hold true, then the integration of lower-level employees, which is currently lacking, would be a worthy cause to pursue. Furthermore, it is interesting to note that whereas much of the literature seem to acknowledge the benefits of organisational learning to ensure an organisation's survival and secure its competitive advantage, few have examined deeply the benefits to the individual employee. Findlay *et. al.* (2000) were one of the few who accepted that the purpose of learning should be for the mutual gains of both the organisation and the individuals within. More recently, Nyhan *et. al.* (2004) presented a European perspective on the concept of organisational learning and blamed modern management for "not paying a great deal of attention to ensuring personal learning benefits for employees and workers" and envisaged a repetition of the "reality for many workers, today, is a reincarnation of Taylorism in the form of neo-Taylorism (p. 69)". In fact, Thursfield (2001) maintained that Taylorism is still very much in existence in today's workplace and observed, through three manufacturing case studies, that while companies accept the need to develop the skills of workers (arguably a personal learning benefit), this is often merely the payment of lip service for the companies observed tend to put off training due to the

pressures of meeting schedules. Indeed, it is felt that construction companies that claim to advocate organisational learning could be labelled as hypocritical given the industry's lacklustre attitude towards training in the first place.

Second, since change is accepted to be fast-paced and uncertain, the spotlight has mainly shone on the process of learning, rather than the outcomes. The resulting abstract notion of knowledge and the claim that organisations should be knowledge-centred, without saying what is that is specifically to be learnt, does little in achieving the aspiration of a learning organisation. It is here that we believe that there should be a link between (generative) organisational learning and skills and competencies (as learning outcomes). Yet, where skills and competencies are concerned, Scarbrough (1998) similarly puts forward another flaw, that the resource-based view of the firm results in a weak link between competencies and performance, as he purports, "little attempt to demonstrate the *mechanical* links, between competencies and performance, other than in the broad terms of the root and branch metaphor propounded by Prahalad and Hamel (1990) (p. 224, original *emphasis*)". Consequently, "theorists attempt only the sketchiest account of the nature of resources and competencies, preferring to identify them inductively from evidence on a firm's functional outputs or competitive advantage (ibid.: 223)". In terms of organisational learning, it has been observed that the link between learning and performance tends to manifest chiefly in the name of continuous improvement (e.g. Kululanga *et. al.*, 2001; Murray and Chapman, 2003). Yet, we share Scarbrough's (1998) comment that the resultant sketchy accounts from the plethora of studies subsequently fails to gain a plausible consensus. We like to use the analogy of school education and argue that while it is important to consider

continuous assessment (continuous improvement in an organisational sense), it is equally important for the student to know what s/he gets out at the end of the course (a school qualification, vocational qualification, degree, a certificate etc.). In the same fashion, to resolve Scarbrough's (1998) mechanical link or lack thereof, it seems reasonable that learning is tied to its outcomes of defining the skills and competencies base of the individual and thereby, the organisation. Sadly, we identify no studies so far that attempt to tackle such definition in the understanding of organisational learning.

Perhaps Garratt (1999) was right to alert us to the fact that in his opinion, "I have never yet met a learning organisation", as he pointed out that many companies want a quick fix, "often by the next month (p. 206)". Armstrong (2000) resigned bluntly to the fact that "we have pincushioned our attention on science and the intellect as that which exclusively will lead to increased performance and productivity, to organisational longevity, to the good life" and accused the learning organisation for being "a pimp, and the employees, the hapless prostitutes (p. 359)", striking a moral argument against organisational learning. It is our intention to provoke further reflection on the impetus for organisational learning and suggest that future research must place more emphasis on the fulfilment that organisational learning might accrue to individual workers. It is our firm belief that the development of individual skills and competencies exemplifies a core learning benefit.

This section has outlined organisational learning as an elusive concept that, we believe, would continue to be fuzzy without a solid theoretical basis. We accept that the Lipshitz's *et. al.* (2002) Model could provide this basis. In using the model to

understand the attributes of the learning organisation and the extent of organisational learning, however, is insufficient to claim the applicability of the concept in construction. We have established that there needs to be more emphasis on projects as the unit of organisational analysis, and consequently, a requirement for more research focus on the interorganisational dynamics involved. Moreover, we call for future research to consider the wider benefits of organisational learning to the individual, which should extend to **all** employees, and not just the current linkages to white-collar professionals or firm performance. We recommend that a connection between learning and the definition of skills and competencies might be a plausible way forward.

CHALLENGES FROM A CONSTRUCTION PROJECT PERSPECTIVE

This section highlights a number of gaps that could potentially serve as drivers for further research, based on the discussion so far; and relates to the issues surrounding construction projects.

The leadership dynamics of interorganisational learning

Given the inherent interorganisational nature of construction projects, embarking on an empirical investigation raises a major issue of leadership and power. Holmqvist (2003) found that intra-organisational learning (i.e. learning within an organisation) at a software company appeared to occur much quicker at the outset than interorganisational learning (i.e. learning across companies, as would be the case in construction projects). This was found to be a direct consequence of the ability and dominance of management to direct employees' working culture within a company, whereas there was a tendency for the same management personnel to avoid imposing

their value system on a project team made up of members from a range of organisations other than their own. Although the study was limited to a single non-construction case study, this finding bears significance for construction companies aspiring to be learning organisations for construction projects are temporary multi-organisations (Cherns and Bryant, 1984). At face value, the issue of leadership of learning in construction projects could have implications on say, the policy facet of the model proposed above. For instance, as unlikely as it may be, would it be the client who takes the lead in laying down the policy for learning as Barlow's and Jashapara's (1998) findings seem to suggest? Or would it be a case of distributed leadership running along the entire design and construction process, which then begs the question of how such distributed leadership is going to be managed smoothly, particularly at the interfaces? Also, if the result of organisational learning were to increase an organisation's competitive advantage, e.g. in terms of cost advantage through leveraging a (presumably) inimitable bundle of skills and expertise as intimated by Walker (2002) and Walker *et. al.* (2002), this raises issues as to which organisation (the client, the contractor, the supply chain etc.) owns this competitive advantage? Or would it be safe to assume equal ownership, and if so, what happens to this advantage during the likely event that organisations might compete against each other for the next project? Empirical studies, therefore, would help shed light on these dynamic interactions.

Organisational learning: a *sine qua non* for partnering or vice versa?

Much of the construction-related studies into organisational learning have been centred on strategic partnering alliances (e.g. Barlow and Jashapara, 1998; Holt *et. al.*, 2000; Kululanga *et. al.*, 2001; Cheng *et. al.*, 2004). Does this mean, therefore,

that for organisational learning to take place at the project level, that partnering should be a pre-requisite? Thence, does this imply that companies that do not partner do not engage in organisational learning? If so, Kululanga's *et. al.* (2001) claim that organisations that "stop learning stop living" seem like a severe outcome, that even their recommendation to move from a state of no organisational learning to one of learning would literally imply a resurrection from the dead. Nonetheless, it is perhaps worthwhile to investigate the different degrees of organisational learning on different project configurations. This, we suggest, is what the proposed model stands to offer as a basis for comparison.

Strategic or operational change?

Earlier discussions on organisational learning research have revealed an emphasis on strategic change. However, at a project level, it is perhaps more accurate and appropriate to talk about operational change rather than strategic change. What therefore, if any, are the unique differences between strategic and operational change and so, what are the implications for learning?

Projects as 'learnt' organisations or 'learning networks'?

Last, but not least, is organisational learning sustainable from a project perspective? Or would the case be that projects become 'learnt' organisations, rather than 'learning organisations'? Also, could projects be set up as 'learning networks', similar to that of Wenger's (2000) community of practice? However, Coughlan *et. al.* (2002) have observed, while reporting on such a network as the National Action Learning Programme (NALP), that to ensure success of these networks, one of the fundamental motivating purpose should be the desire to learn. Simons *et. al.* (2003)

added that one should distinguish between a community of practice and a community of learning. This boils down to the key question raised earlier on the output of learning. We urge practitioners, therefore, to look beyond the current emphasis on organisational performance and continuous improvement and embrace the vision of a community of learning. In so doing, we reiterate our genuine concerns that the benefits of learning to individual workers in the form of the development of skills and competencies as an outcome of learning should be pondered upon.

CONCLUSIONS

In conclusion, this paper has offered a critical review of recent literature within the area of organisational learning and found that the concept remains abstract, vague and incoherent. Further, it was discovered that empirical foundation is lacking, especially in terms of viewing from an organisational learning perspective at a construction project level. It was proposed that Lipshitz's *et. al.* (2002) multifacet model of organisational learning be adapted to seek empirical evidence of organisational learning in construction projects. Finally, the paper puts forward a number of research challenges that is to be addressed in future work. These include the need to emphasise the interorganisational dynamics involved in both the process and outcomes of organisational learning, the consideration of organisational learning beyond partnering and the shift towards viewing projects as learning networks.

(5148 words)

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Contextual facet
- Error criticality
- Environmental uncertainty
- Task structure
- Proximity
- Leadership commitment

Policy facet
- Formal/Informal
  - Commitment to learning
  - Installation of OLMs
  - Culture change
  - Recognition and reward

Psychological facet
- Psychological safety
- Organisational commitment

Structural facet
- OLMs
  - Integrated
  - Non-integrated

ORGANISATIONAL LEARNING

Cultural facet
- Transparency
- Integrity
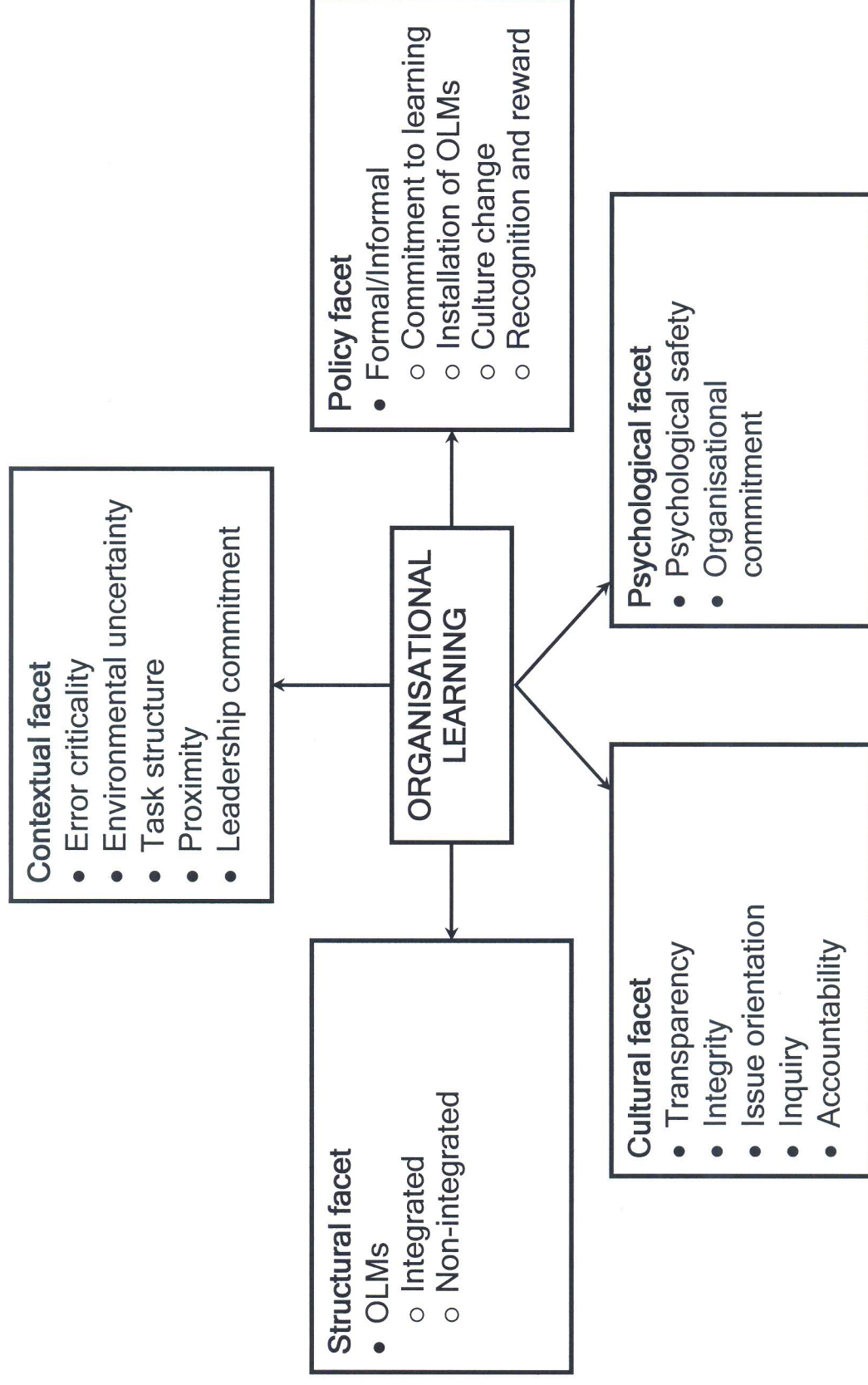- Issue orientation
- Inquiry
- Accountability

Figure 1: Multifacet model of organisational learning (adapted from Lipshitz *et. al.*, 2002)