Can transfer of learning be enriched by valuing knowledge transformation and co-creation? Exploring new ways to improve training design

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ABSTRACT

This paper argues that a possible cause of issues with management education outcomes is the fact that most training models operate from a limited ‘transfer’ metaphor. This theoretical paper contends that by reconceptualising existing models, specifically Holton’s transfer of learning model, to incorporate multiple processes and acknowledge the importance of educator- or trainer-student interaction in co-creating knowledge, there is potential to improve training design and ultimately achieve more satisfactory training outcomes.

Keywords: learning transfer, knowledge movement, boundaries, management education

INTRODUCTION

The value of university programs of management education has been a hot topic ever since Mintzberg’s 2004 critique of MBA programs started a flurry of angst about the role and appropriate direction of business education (Hatcher and O’Connor, 2009; see Kuchinke, 2007 for an overview of the critique). In particular, the multi-million dollar management education industry has come under scrutiny for its apparent inability to equip learners with skills for effective decision-making and behavioural effectiveness in volatile business environments. Universities, and particularly MBA programs, are being challenged to deliver education and training that makes a genuine difference in the workplace. Thus, while, for most of the twentieth century, universities have measured success in terms of academic output when graduates exited their courses, now they are being asked to rate their outcomes in terms of relevance and usefulness (Ghoshal, 2005; Kuchinke, 2007; Van de Ven, 2007).

Traditionally, those involved in the ‘learning’ industry have operated using the binary opposition between ‘training’ – a practical skill based approach to achieving effective practice – and ‘education’ with its higher aspirational goals for learners to acquire general knowledge, develop powers of reasoning and critical thinking, and be readied for an intellectually mature life. This somewhat false and antiquated view of the separation of these two domains can be best exemplified by the commonly held notion that while education may be achieved by training or instruction, universities maintain status as a higher order delivery mechanism that achieves the ‘educated’ professional.
The challenge to demonstrate outcomes, particularly in the organisational context, requires a new set of responses from both universities and trainers. One set of responses is to reconsider what education for the workplace should look like, the ways in which education and training knowledge could be applied in the everyday workplace, and the usefulness of perpetuating the ‘cult of the expert’ in delivery - where the educator is positioned as the holder of useful knowledge and the learners’ role relegated to that of knowledge sponge. This paper proposes a reconceptualisation of education and training that puts these three dimensions under the microscope. The paper is structured as follows: a literature review provides an overview of current thinking in transfer of learning. Then, drawing on work from the knowledge transfer and innovation literatures - in particular Carlile’s 3T framework (2002, 2004) - a reconceptualisation of the training transfer model is proposed. The paper concludes with a discussion of potential directions in research to support the reconceptualised model.

**The challenges of the ‘transfer’ approach**

While techniques to measure transfer of learning have developed significantly over the last few decades, issues remain with assessing the usefulness of training to learners in their everyday workplace (Hatcher and O’Connor, 2009). Holton’s Learning Transfer System Inventory (LTSI) (Holton, Bates and Ruona, 2000) is one of the most widely used instruments to measure transfer of learning and well regarded for capturing direct transfer of knowledge, suitable for instance to measure new procedural knowledge. However, the LTSI does not adequately capture instances where learners have to transform the knowledge acquired during training to a new context, which is more representative of managerial level knowledge application.

This theoretical paper contends that the use of the framing and naming of the ‘transfer of training’ metaphor lies at the heart of several of these issues. According to Morgan (1997), metaphor has ‘... a formative impact on language, on the construction and embellishment of meanings, and on the development of theory and knowledge of all kinds’ (p.277). Metaphor offers effective ‘interpretive schemes’ to aid in the reduction of uncertainty and ambiguity (Hill and Leenhagen, 1995, p.1058). The naming of the objects constituted as ‘knowledge’, how this knowledge would be used in transfer...
design, and the facility of the knowledge to be transferred or moved, reifies their existence and thus distorts what is going on in the learning process.

This consideration is central to the notion of training, with its dominant metaphor of ‘transfer’ to learners and organisations. According to Carlile (2004), ‘transfer is ... the most common label used to describe the movement of knowledge in organizations’ (p.558), but recent critiques in the knowledge transfer and communication literature have shown it is an ‘impoverished metaphor’ (Bechky, 2003, p313; Fairhurst, 2001, p.385-7) that does not fully explain or capture the application of knowledge in different contexts. As Fairhurst further argues, the language of ‘transfer’ and ‘transmission’ are wedded to the notion of the possibility of an objective reality out there and consequently linked to cognitive output conceptualised in the notion of individual meaning systems. Knowledge is far more complex than that, and a meaning centred systemic orientation is likely to lead to a focus on conversational practices that attend to the ‘interpenetration of cultural and personal meaning systems’ (p. 386). Thus, rather than to cast educators and trainers as the ‘primary architects of meaning’ (Fairhurst, 2001, p.387), we argue that knowledge is co-constructed during a training encounter.

Thus, this paper calls for a re-conceptualisation of one element of the conventional transfer of training model, namely transfer design, to incorporate an acknowledgement of the multiple processes of knowledge co-creation and the interactions between instructors and learners. The paper takes specific interest in the role of language in doing this. Carlile’s (2004) 3T framework for managing knowledge across boundaries is used as an example of synthesising knowledge movement processes and is incorporated into a training transfer model to propose a model of ‘integrative learning’, the term used in this paper to describe sharing and shaping of knowledge that occurs in education and training. By drawing attention to the importance of interaction in learning transfer, the authors also hope to move the debate from the traditional notion of ‘educator as expert’ to one that acknowledges the co-creation of knowledge during training. This attention to the linguistic turn may enable training and education design that encourages the existing expertise of practitioners to be valued more overtly in the delivery of training, resulting in more satisfactory and useful training outcomes.
LITERATURE REVIEW

The literature review considers current issues related to transfer of learning by drawing on discussion from both knowledge transfer and transfer of learning/ training literature.

‘Transfer’ as an impoverished metaphor

The usage of the term transfer itself has proven problematic. Bechky (2003) describes ‘transfer’ as an ‘impoverished metaphor’ (p.313), suggesting that it simplifies conceptualisations of knowledge and overlooks the array of potential meanings about particular knowledge that exists in an organisation or situation: ‘Understanding is situational, cultural, and contextual. ….While theorists realize that the mechanical notion of knowledge transfer is a limited one, it persists in our thinking about knowledge in organizations, implying that communication of knowledge is a simple process.’ (p.313)

This view is supported by Attewell (1992), who points out that the term ‘transfer’, as generally applied in most transmission or conduit models of knowledge movement, does not adequately capture the uptake of knowledge since the recipient still has to learn by doing / learn by using the knowledge. Ringberg and Reihlen (2008) add that most models of knowledge transfer regard knowledge as a static and a discreet object that can be transferred. Instead, there is a growing consensus in the knowledge transfer literature that knowledge should be considered as socially constructed and therefore open to multiple interpretations (Puutio, Kykyri and Wahlstrom, 2008). This reinforces the need to revisit assumptions about knowledge underlying transfer of training models.

The outcomes of knowledge transfer are most often assessed primarily at the individual level, for instance the extent and accuracy of recall or the amount of time it takes an individual to learn new tasks (Argote and Ingram, 2000). A drawback of this measurement (quantitative) approach is that it does not provide scope to capture the richness of contextual impact factors or consider the application value of the transferred knowledge. It also assumes that knowledge transfer occurs unproblematically
and with little or no cost. The work of researchers such as Szulanski (2000) has however shown that there can be difficulties in transfer (for instance stickiness) and that ‘moving’ or co-construction of knowledge within an organisation can pose a challenge as it involves many interactional dynamics (Brown and Duguid, 2001).

Transfer of Learning System

While transfer of learning is regarded as a critical outcome within the field of Human Resources Development (HRD) (Holton et al. 2000), research shows that transfer of training is complex and involves multiple factors and influences (see for instance Ford and Weissbein, 1997; Holton, Bates, Ruona, and Leimbach, 1998; and Noe and Schmitt, 1986). Literature on the transfer of learning has concentrated on two main areas (Holton et al., 2000, p334): firstly, trying to understand what transfer of learning is and what affects it; and secondly, work involving the measurement of transfer factors.

In terms of measurement, Kirkpatrick’s four level evaluation model (reaction, learning, behaviour, results) - developed in the 1950’s - is still regarded as an easily accessible way to measure transfer (Holton, 2005). Holton (2005), however, identified as one of the biggest risks of Kirkpatrick’s model the assumption that any failure to achieve the outcomes from a training intervention would be attributed to the intervention itself, when it could have been due to moderating variables. Holton therefore expanded Kirkpatrick’s model by proposing the HRD Evaluation and Research model and identifying three outcome levels: learning, individual performance and organisational performance. Holton subsequently developed the Learning Transfer System Inventory (LTSI) (figure 1) to measure the factors in the system affecting the transfer of training.

[Insert Figure 1 here]

‘Near’ vs. ‘far’ transfer

In assessing transfer of learning success, there is also a need to distinguish between ‘near’ and ‘far transfer (Hatcher and O’Connor, 2009; Laker, 1990; Noe, 1986). ‘Near’ transfer refers to specific behaviours and skills and is most useful for assessing technical and procedural training (Hatcher and O’Connor, 2009). ‘Far’ transfer refers to situations when knowledge is abstracted and connected to
new problems (Laker, 1990). ‘Far’ transfer is essential for management development and creative problem solving. Yamnill and McLean (2001), in their summary of the significance of ‘far transfer’, identify four factors that could influence the acquisition of far transfer:

- the better the trainees understand the principles, concepts and assumptions of the skills and behaviours
- the more trainees practice in different contexts and the novelty of practice exercises
- the more choice in choosing application opportunities
- the more opportunities trainees are given to apply knowledge to situations other than to those for which they were trained (p. 202).

Aspects related to ‘near’ transfer are readily identifiable and therefore measurable. These factors are easily linked to training outcomes, for instance increases in knowledge related to operational procedures. It is more difficult to assess the success of ‘far’ transfer, as this calls for an analysis of how (in other words, the process) knowledge is transformed and connected to new problems. Assessing ‘far’ transfer entails an understanding of how knowledge is abstracted, transformed and applied to a new context - something not readily captured by existing transfer assessment instruments.

While Holton’s LTSI refers to ‘transfer’, the addition of the Motivation to Improve Work through Learning (MTIWL) construct by Naquin and Holton (2003) acknowledges the fact that training knowledge need not only be transferred, but also transformed. Holton (2005, p.44) describes this change as ‘one of the most important developments’ in the LTSI model. The MTIWL construct acknowledges that the work improvement process in HRD is not just a function of training. Instead, learners need to transfer their new (acquired) knowledge into improved work outcomes: ‘What employees are really engaged in is the process of improving work through the learning process that necessarily entails transferring learning into job application’ (Holton, 2005, p.48).

**Usefulness of training to everyday work**

While models such as Kirkpatrick’s and Holton’s are beneficial in informing and assisting training design and delivery, there is still a need to capture the extent to which training has been useful to the
learner once back in his/her everyday workplace (Hatcher and O’Connor, 2009). Typical assessment of training which occurs directly after the event does not meet this requirement. Instead, a need remains to consider whether the learning has resulted in ‘knowing’ (Orlikowski, 2002) - that is, the practical use of the new knowledge.

Research into learning transfer back into the organisation often focuses on the transfer climate. Holton et al (2000) describe transfer climate as a ‘... mediating variable in the relationship between the organizational context and an individual’s job attitudes and work behaviour.’ (p.335). However, there is no clear understanding of what constitutes a transfer climate (Tannenbaum and Yukl, 1992) and while Holton for instance has changed the reference from ‘climate’ to ‘system’ over time, there is still a need to better understand how this transfer system operates.

**Importance of interaction**

Thus, traditional transfer of learning models for organisational members do not sufficiently capture the influence of trainer-learner interaction or the dynamic interactions of organisational memberships and engagement in the learning process once individuals return to their organisations post training and education. Most older models view transfer as a unidirectional process from trainers to learners, drawing strongly on the conduit communication model of Shannon and Weaver (1949) and the signalling metaphor in communication studies, and conceptualise knowledge as objective facts and knowledge transfer therefore as a mechanistic process (Szulanski, 2000). Since training outcomes are typically assessed at an individual level (Argote and Ingram, 2000), complex social processes occurring during knowledge movement could potentially be overlooked. Considering knowledge transfer at levels of analysis higher than the individual involve important social processes such as ‘... sharing, interpreting and combining information so that it can persist in the face of individual turnover.’ (Argote and Ingram, 2000, p. 5).
Newer models, such as Kraiger’s (2008) 3rd generation instructional design model, have started emphasising the importance of social interaction in the transfer process (Noe, Tewis and Mcconnell Dachner, 2010, p.284): ‘Inherent in the third-generation model is the assumption that knowledge is socially constructed with shared meaning based on instructor-learner and learner-learner interactions.’ Kraiger does however argue that 3rd generation models are best exemplified by online learning environments as opposed to classroom based delivery.

From knowledge transfer literature, studies such as that of Berends, Garud, Debackere and Weggeman (2011) describe an approach of tapping into knowledge co-creation and movement processes through focusing on interaction. Based on studies of two industrial research organisations, Berends et al. coin the term ‘thinking along’ to describe the interactive process that allows ‘... a person with a problem to tap into someone else’s knowledge base without them having to get involved in each others’ ways of knowing.’ (p.69). One of the strengths of the ‘thinking along’ concept is that it circumvents the interpretive barriers that can exist when investigating ‘transfer’ and ‘transformation’ processes. The relationships in the studies were described as professionals from different knowledge domains working together to facilitate new knowledge co-production and new possibilities for decision-making and behaviour. To incorporate the full range of types of co-creation, including the ‘thinking through’ strategies as described by Berends et al (2011), opens up the notion of ‘transfer design’ for educators and trainers.

**PROPOSITIONS**

Based on the above discussion of issues related to transfer of learning, the main proposition is to consider reconceptualising the traditional notion of ‘transfer’ to acknowledge other ways in which knowledge is integrated. This involves revising Holton’s training transfer model to incorporate aspects from synthesised perspectives, such as Carlile’s 3T framework or Behrends et al.’s (2011) notion of ‘thinking along’.
The concept of ‘transfer’ must be revisited to incorporate the notion that there are different ways of integrating knowledge. This is particularly important in light of the challenges that the management education industry faces as corporations and governments tighten their belts and demand accountability for the training dollar spent. Carlile’s 3T model (2002, 2004), (figure 2) while originating from an innovation context, can be useful in informing this rethinking. Carlile situates the transfer problem within boundary theory and examines the movement of knowledge across boundaries where innovation is required. A boundary in this sense is not seen as dysfunctional, but instead as essential for learning to occur. One of Carlile’s most enduring contributions to the transfer debate has been the awareness that knowledge is at stake during situations of transfer. This implies that the acquisition of knowledge comes at a cost (for instance, having to abandon old knowledge). If this process is not properly addressed, learning will suffer. Carlile describes three progressively complex knowledge boundaries (syntactic, semantic, pragmatic) requiring three progressively complex processes (transfer, translate, transform) for successful knowledge movement.

The syntactic boundary exists when there is a common knowledge and lexicon between the actors, so there is limited novelty in the knowledge. The movement of knowledge across the syntactic boundary is akin to information processing and occurs through the unidirectional and straightforward process of transfer, similar to instances of ‘near’ transfer. It could be argued that most training interactions involve some degree of novelty, and therefore ‘transfer’ as described by Carlile is the least appropriate process (but ironically the most frequently used).

However, a transfer process becomes problematic when novelty arises (new knowledge is added – which is typical of training situations such as business contexts where experienced business leaders bring new practices to the table that theoretically have not been tested but nevertheless have been used successfully in practice within the organisation). In this context, a semantic or interpretive boundary is faced. The semantic boundary requires a process of ‘translating’, namely establishing common
meanings and reconciling discrepancies in meaning. When the translation boundary is crossed, conversation becomes the essence of the learning moment: participants must engage in conversations and discourse to mutually share, interpret and construct their meanings, becoming co-authors in making sense of their interactions (Van de Ven, 2007, p.26).

Under certain circumstances, it is not only a matter of translating different meanings, but of negotiating interests and making trade-offs between actors. This is when the pragmatic (or political) boundary is faced. The required process then is ‘transforming’, which focuses on the development of common interests. At this boundary, which equates to situations of ‘far’ transfer, all participants must find ways of transforming their domain-specific knowledge to apply in a new context. For business educators, failure to negotiate interests and to recognise power relations in the room, leads to charges of theory being useless for the experienced business practitioner.

The proposition therefore is to extend the domain of ‘transfer design’ in Holton’s model to include multiple processes and the co-creation of meaning between educators and learners, and learners and their organisational environments as they apply their learning. Another outcome of this change could be to alter the assumptions about what experts do - specifically around what their role is in engaging in knowledge production with learners – thereby moving away from the ‘cult of the expert’. This could contribute to the broader discussion around alternative ways of learning, particularly for experienced business practitioners who bring so much knowledge to the table. A further challenge then is to find ways to facilitate on-going support of learners returning to their organisations.

**CONCLUSION / RESEARCH NEEDED**

Based on the propositions, the following avenues for new research are proposed:

i. Consider models of learning in the business context for experienced practitioners that are not limited to ‘transfer’, but incorporate other processes such as transform and translate. In these
models, the domain of training design would be extended to include co-construction of meaning. One such model is proposed in figure 3.

ii. Provide support to organisations by post-learning executive coaching conversations to track how the learning is being applied, shared and shaped within the learner’s organisation.

iii. Move beyond assessment directly after training, and focus on application of knowledge back in workplace. Employ methods such as work diaries, where trainees can describe over time how they transform and use the knowledge acquired at training.

iv. Gain a better understanding of the role of the employer in facilitating transfer of learning to the workplace and creating an environment that supports the sharing and shaping of knowledge.

Being open to a range of these strategies is certainly more challenging than simple exit or evaluation surveys and needs resource allocation and collaborative arrangements with organisational partners. Approaches such as avenues i and iii may not be practical for large mass business education where the organisational recipients of those ‘educated’ cannot be easily identified, but corporate educators, MBA program leaders and trainers usually have more targeted organisational focus and, with careful planning, can follow learners back to the workplace. Nonetheless, this form of ‘engaged’ scholarship is a long time coming but perhaps will resolve some of the tensions educators and trainers experience as outsiders and simultaneously respond to the demands for better outcomes.

This reconceptualised model thus acknowledges the complex nature of knowledge production, and rejects the simplistic conceptualisation of educator or trainer positioned as the holder of ‘expert’ knowledge, the role of learners as that of knowledge sponge, and the container metaphor of knowledge. By incorporating multiple possible ways of producing knowledge, the model in Figure 3 below goes some way to rethink, at a theoretical level, the requirements for understanding how ‘integrative learning’ takes place, acknowledges collective meaning-making as an integral part of knowledge production in the educational and organisational environment, and points to the challenges that must be faced in measuring successful education and training.

[Insert figure 3 here]
References


LIST OF FIGURES:

Figure 1: Holton’s Transfer of Learning System (Yamnill & Mclean, 2001)

Figure 2: Carlile’s 3T integrated framework for managing knowledge across boundaries (2002; 2004)
Figure 3: A model of integrative learning