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THE RELATIONSHIP BETWEEN KNOWLEDGE SHARING AND TRANSFER OF TRAINING

Dr.L.SANKARI PRIYA*
Dr.S.R.EASWARI**

Abstract
Studies on transfer of training generally focus on the training input factors such as trainee characteristics, training design and work environment. The Learning Transfer System Inventory(LTSI) conceptual model, developed by Holton, Bates and Ruona (2000) is a more comprehensive model that accounts for the impact of primary intervening variables such as motivation, environment, ability; and secondary influence factors such as performance self-efficiency and learner Readiness. Nevertheless, this model does not consider the influence of knowledge sharing on transfer of training. This article argues that knowledge sharing could play a key role in understanding the process of transfer of training. The author bases this hypothesis on the principles of the Theory of Planned Behavior (TPB), which predicts trainees' behavioral intentions and actual behavior of sharing the learned knowledge, skills and attitudes at the workplace. Consequently, this article proposes a research strategy to test the importance of knowledge sharing as a factor in predicting transfer of training by combining the LTSI and TPB.
Keywords: System Inventory(LTSI), knowledge management

Introduction

Training and development is an expensive investment for most organizations. Itis fair to say that employers aim to ensure that investments in training provide maximum returns. Unfortunately, the extent to which transfer of skills learned in training are applied to the workplace has been shown to be somewhat limited (Baldwin and Ford 1988; Broad and Newstorm 1992). In a knowledge economy, knowledge sharing is becoming increasingly important. There is also a groundswell of support for the notion for that the return on investment of training expenditure is dependent on transfer of training occurring. Public sector organizations have been criticized for their lack of accountability for these factors but this is now changing. Although a study of government-registered training providers demonstrated the use of formal evaluation techniques, the author nevertheless recommended further improvements (Hashim 2001). The researcher called fora greater focus on transfer of training outcomes in public sector banking. On a wider scale, the concept of transfer of training has attracted the attention of many training researchers and Human Resource

* Professor & Head, Department of Business Administration, S.T.Hindu College(SS), Nagercoil
** Assistant Professor, Dept. Of Commerce, S.T.Hindu College(SS), Nagercoil

Development (HRD) practitioners, particularly in terms of how transfer may be enhanced(Wexley and Latham 1991; Holton 1996; Holton, Bates and Ruona 2000).

Training may be defined as a planned learning experience designed to bring about permanent change in an individual's knowledge, attitudes, or skills (Campbell, Dunnette, Lawyer and Weick 1970). As knowledge has become a key economic resource and a source of competitive advantage, effective training is most important to instil knowledge (Ducker 1995). In particular, organizations rely on learned knowledge and skills being to the job. To a large extent, this behavior constitutes a transfer of training. By definition, then, transfer of training is the degree to which trainees apply the knowledge, skills and attitudes gained in training to their job (Wexley and Latham 1991). It has also been described as the maintenance of those skills, knowledge and attitudes over a certain Period of time (Baldwin and Ford 1988). In an HRD context, transfer of training represents a core element transforming learning into individual performance (Holton 1996).

In order to improve transfer of training, it is important for organizations to not only understand the factors that affect transfer, but also to ensure that the organization's training evaluation model takes account of these factors. Ina contemporary workplace dependent on knowledge management and the optimal application of skills by a learner, more educated workface, organizations need to turn to effective ways to ensure that knowledge generation and transfer are not overlooked. One of those ways is to design a training program that utilizes the benefits of knowledge sharing. This paper outlines a research strategy to measure the elements, which contribute to transfer of training by combining the LTSI, a model used to examine factors affecting transfer of training (Holton, Bates and Ruona 2000) and TPB, a theory which predicts trainees' behavioral intensions and actual behavior of sharing the learned knowledge, skills and attributes in the workplace (Ajzen 1991). BY doing so, this research proposal will extend existing knowledge of transfer of training and provide trainers with an additional mechanism for evaluating successful workplace training programs, initially in the context of the public sector banking, we predict, with generalizable results for wider application.

The Evolution Of The Transfer Of Training Concept

Transfer of training is defined first, as the degree to which trainees apply the knowledge, skills and attitudes gained in training to their job (Wexley and Latham 1991). Second, transfer of training is measured by the maintenance of the skills, knowledge and attitudes over a certain period of time (Baldwin and Ford 1988).Rouiller and Goldstein (1993) expanded the research on transfer of training to include the concept of a 'transfer climate' consisting of situations and consequences that either inhibit or help to facilitate the transfer of what has been learned in training into a job situation. They suggested four types of 'situational' cues: Goal cues, social cues, task cues, and self-control cues. These cues remind trainees of what they have learned, or at least provide an opportunity for them to use what they have learned. In contrast, 'consequence' cues were described as on-the-job outcomes which affect the extent to which training is transferred. The four consequence cues comprise positive feedback, negative feedback, punishment, and no feedback. According to Holton, Bates, Seyler and Carvalho (1997), accurately measuring transfer of training climate is important because it can help HRD move beyond the question of whether training works, i.e., to analyze why training works. Therefore, having a valid and reliable measure of transfer

climate could help identify not only when an organization is ready for a training intervention, but also when individuals, groups and departments are ready for such an intervention.

Another key factor identified by Holton et al. (1997) was the 'opportunity to use' – which described the extent to which trainees learn to obtain resources that enable them to use their new skills on the job. Their study suggested that trainees perceive transfer climate according to referents to the organization (for example, supervisor, peer, or self) rather that according to the psychological cues (goal cues, social cues), as proposed earlier by Rouiller and Golstein (1993). The factor analysis in Holton et al. (1997) study extracted nine transfer climate constructs. These constructs were peer Support, Supervisor Support, Openness to Change, Personal Outcomes Positive, Personal Outcomes Negative, Supervisor Sanctions, Content Validity, Transfer Design and Opportunity to Use. In 2000, Holton et al., expanded their work by introducing the concept of a 'transfer system' which they defined as all factors in the person, training, and organization that influence transfer of learning to job performance. For example, motivation to transfer is one of the factors affecting transfer but is not a transfer climate construct. Therefore, the concept of transfer system is broader than transfer climate used by Rouiler and Goldstein (1993).

Holton et al. (2000) used the earlier HRD Research and Evaluation Model (Holton 1996) as their conceptual framework. IN that framework, three primary training outcomes were defined. These outcomes were learning, individual performance and organizational results, defined respectively, as achievement of the learning outcomes desired in an HRD intervention; change in individual performance as a result of the learning being applied on the job; and results at the organizational level as a consequence of the change in individual performance (Holton 1996, p.9). The term 'individual performance' is used in the model instead of 'behavior' in the Kirkpatrick (1994) model because it is a broader construct and a more appropriate descriptor of HRD objectives. The authors first sought to incorporate the nine transfer climate constructs identified in Holton et al. (1997) study into the framework. They then searched the literature on transfer on training of identify seven other constructs that had not been previously tested in Holton et al. (1997) study but which, they believed, would fit into the model. The seven additional constructs comprised: Performance self-efficacy (Gist 1987), expectancy-related constructs (transfer effort performance and performance outcomes), personal capacity for transfer (Ford, Quinones, Sego and Sorra 1992), feedback – performance coaching, learner, readiness (Knowles, Holton and Swanson 1998), and general motivation to transfer. Table 1 lists these final 16 constructs and Figure 1 shows how the 16 constructs fit in the LTSI model.

Of the 16 constructs, the first 11, (learner readiness, motivation to transfer, peer support, supervisor support, personal outcomes-positive, personal outcomes-negative, supervisor sanctions, content validity, transfer design, personal capacity to transfer and opportunity to use) represent factors affecting a specific training program. Constructs 12-16 (performance self-efficacy, transfer effort-performance expectations, performance-outcomes expectations, feedback and openness to change) were classified as general factors, affecting programs.

In order to measure these 16 constructs, Holton et al. (2000) identified 76 'items' to measure the 11 constructs representing specific training program factors and 36 'items' to measure the five general constructs affecting all training programs. Exploratory factor analysis was used by Holton et al. (2000), which revealed a clean interpretable factor structure of all 16

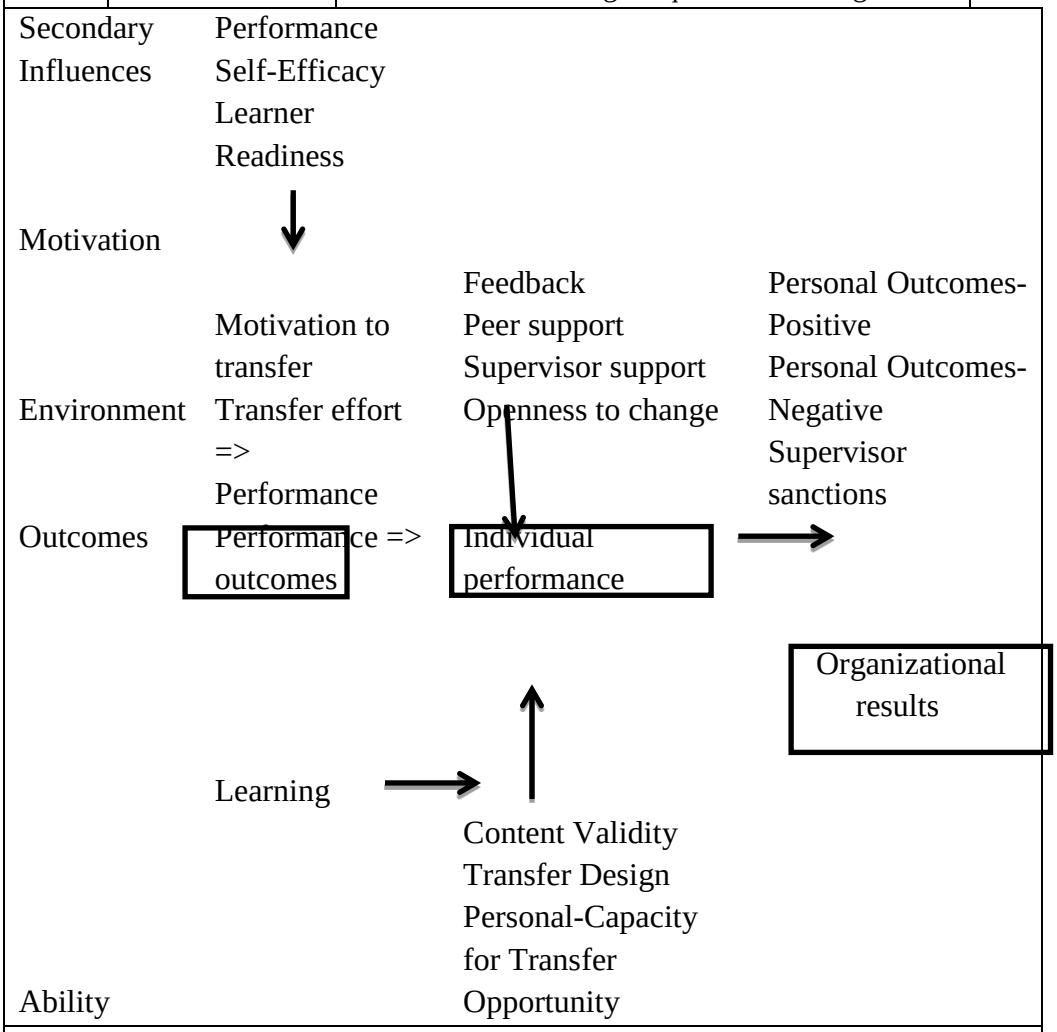
transfer system constructs. The findings from their study are important in HRD, and to the present research strategy, as any effort taken to develop a generalizable instrument to measure factors affecting training transfer must consider all factors as proposed by Holton et al. (2000).

The model has been accepted as one of the most influential ones in measuring training effectiveness (Donovan, Hannigan and Crowe 2001). Further, it is valuable in expanding more traditional training effectiveness models by taking into account factors such as motivation, environmental elements and ability. Nevertheless, we argue that the model fails to consider the role of knowledge sharing as a further indicator of transfer of training. We begin this discussion with a brief exploration of the theory of planned behavior.

Table 1: The 16 Factors of the LTSI which Affect Transfer of Training

No.	Constructs	Definition
1.	Learner Readiness	Extent to which trainees are prepared to enter and participate in training.
2.	Motivation to Transfer	Trainee's desire to use the knowledge and skills mastered in the training program on the job.
3.	Peer Support	Extent to which peers reinforce and support use of learning to the job.
4.	Supervisor Support	Extent to which peers reinforce and support and reinforce use of training on the job.
5.	Personal Outcomes-positive	Degree to which applying training on the job leads to outcomes that are positive for the trainees.
6.	Personal Outcomes-negative	Extent to which individuals believe that not applying skills and knowledge learned in training will lead to negative personal outcomes.
7.	Supervisor Sanctions	Extent to which individuals perceive negative responses freom supervisors/managers when applying skills learned in training.
8.	Content Validity	Extent to which trainees judge training content to accurately reflect job requirements.
9.	Transfer Design	Degree to which (1) training has been designed and delivered to give trainees the ability to transfer learning to the job and (2) training instructions match job requirements.
10.	Personal Capacity to Transfer	Extent to which individuals have the time, energy and mental space in their work lives to make changes required to transfer learning to the job
11.	Opportunity to use	Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.
12.	Performance Self –Efficacy	Trainee's general belief that they are able to change their performance when they want to.

13.	Transfer Effort-Performance Expectations	Expectation that effort devoted to transferring learning will lead to changes in job performance
14.	Performance-Outcomes Expectations	Expectation that changes in job performance will lead to valued outcomes
15.	Feedback	Formal and informal indicators from an organization about an individual's job Performance.
16.	Openness to change	Extent to which prevailing group norms are perceived by trainees to resist or discourage the use of skills and knowledge acquired in training.



Source: Holton, E F III, Bates R A and Ruoma Wendy E A 2000, "The Development of a Generalized Learning Transfer System Inventory, 'Human Resource Development Quaterly, Vol. 11, No.4, pp.333-360.

Figure 1: The LTSI Model

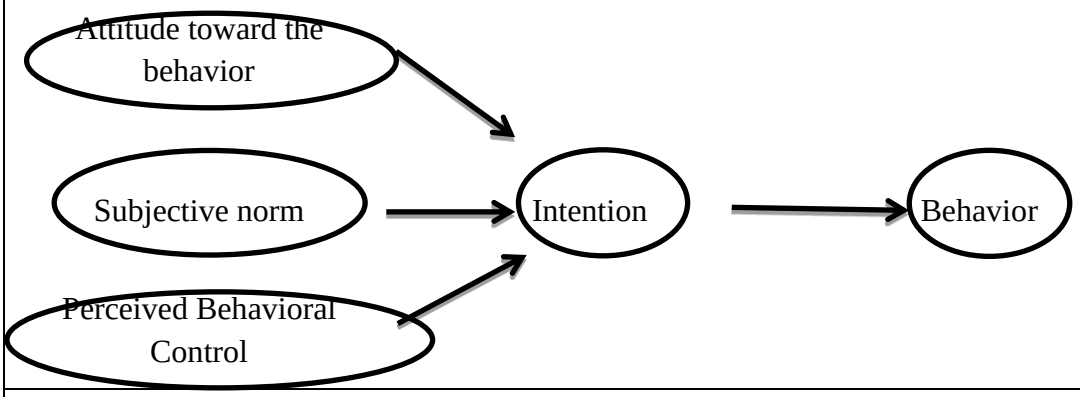
The Theory Of Planned Behavior

The theory of planned behavior originated in the field of social psychology as a predictor for behavior (Ajzen 1991; Ajzen and Fishbein 1980; Fishbein and Ajzen1975). The TPB predicts that the most important determinant of a person's behavior is behavior intent. The individual's intention to perform a behavior is a combination of his or her attitude toward

performing the behavior, the prevailing subjective norms and the perceived behavioral controls on the individual (Ajzen 1991).

Based on TPB, people's attitudes towards their own behavior refer to the degree to which they have made a favorable or unfavorable evaluation of the behavior in question (Ajzen 1991, p.188). Subjective norms are the perceived social pressures to perform or not to perform the behavior and perceived behavioral control refers to the perceived ease or difficulty of performing the behavior. According to Ajzen (1991), the more favorable the attitude and subjective norms with respect to the behavior, and the greater the perceived behavioral control, the stronger should be an individual's intension to perform the behavior under consideration. Figure 2 demonstrates the relationship among attitudes towards behavior, subjective norms and perceived behavioral controls.

Figure 2: The Theory of Planned Behavior



Source: Ajzen 1991, Organized Behavior and Human Decision Processes, Vol. 50, pp. 179-211

The TPB has been widely used in empirical research to predict human behaviors. For example, the theory has been used to predict hunting behaviors (Hrubes and Ajzen 2001) to predict dishonest actions (Beck and Ajzen 1991) and to predict teacher's intention to provide dietary counselling (Asterom and Mwangsi 2000). TPB has also been applied in a workplace context to assess the extent to which senior managers intended to encourage knowledge sharing (Lin and Lee 2004). By using TPB, Lin and Lee (2004) found that the main determinant of enterprise knowledge sharing behavior. Additionally, they also found that senior manager's attitudes, subjective norms, and perceived behavioral controls were found to positively influence their intention to encourage knowledge sharing. Table 2 outlines the five key indicators of knowledge sharing determined by the TPB.

Knowledge Sharing

Knowledge sharing is a set of behaviors that involves the exchange of information or provision of assistance to others (Connelly and Kelloway 2003). Chua (2003)

Table 2: The Key Indicator of Knowledge Sharing		
1.	Attitude toward knowledge sharing	Refers to trainees' positive or negative evaluations on sharing the learned knowledge and skills at the workplace.
2.	Subjective norms toward knowledge	Refers to trainees' beliefs what their friends at the workplace will view about sharing the learned knowledge and skills at the workplace.
3.	Perceived to share knowledge	Refers to how easily trainees' can perform the sharing of learned knowledge and skills at the workplace.
4.	Intention to share knowledge	Refers to the degree to which trainees believed that the learned knowledge and skills would be shared.
5.	Sharing behavior	The degree to which trainees actually share the learned knowledge and skills with others.
Source: Ajzen I, 1991, The Theory of Planned Behavior, Organisational Behavior and Human Decision Processes, Vol.50, pp. 179-211.		

Described the process of knowledge sharing as the manner in which individuals collectively and interactively refine a thought, an idea or suggestion in the light of their experiences. Knowledge sharing has been regarded as an important strategy for developing a competitive advantage for organizations (McEvily, Das and McCabe 2000). This is because shared organizational knowledge can be stored and integrated to form the basis for instilling competence, capability, or routine, and thus it can contribute to creating competitive advantage.

The benefits of knowledge sharing have been reported in studies of firms such as Buckman Laboratories and Texas Instruments, which claimed significant gains in revenue (Chua 2003), while Dow Chemical and Chevron reported savings (Stewart 2001). Other companies such as General Motors and Skandia (a Swedish financial services firm) both recognized the benefits of knowledge sharing and instigated policies requesting their managers to share knowledge by teaching what they know about the business as a way of refining and improving existing organizational knowledge (De Long and Fahey 2000).

Knowledge sharing has been cited a s improving individual performance. A qualitative study by Colison and Cook (2003) determined that knowledge sharinmg by teachers (of what they had learned in a middle school computer technology project) with their colleagues improved their teaching. The authors found that individual teachers learned more when they shared their learned knowledge and this resulted in improved teaching performance. For knowledge sharing to occur, a key criterion is the extent to which people are willing to share their knowledge. It has been argued that the level of trust in the organization is an important factor affecting the willingness to share knowledge (Huemer, Von Krogh and Roos 1998; Sveiby and Simons 2002).

A New Model For Knowledge Sharing And Transfer Of Training

By combining Holton et al. (2000) Learning Transfer System Inventory and the Theory of Planned Behavior (Ajzen 1991), we aim to test affecting transfer of training including trainees' perceptions of sharing the learned knowledge and skills in the workplace context. The inclusion of knowledge - sharing behavior in our proposed research will contribute to

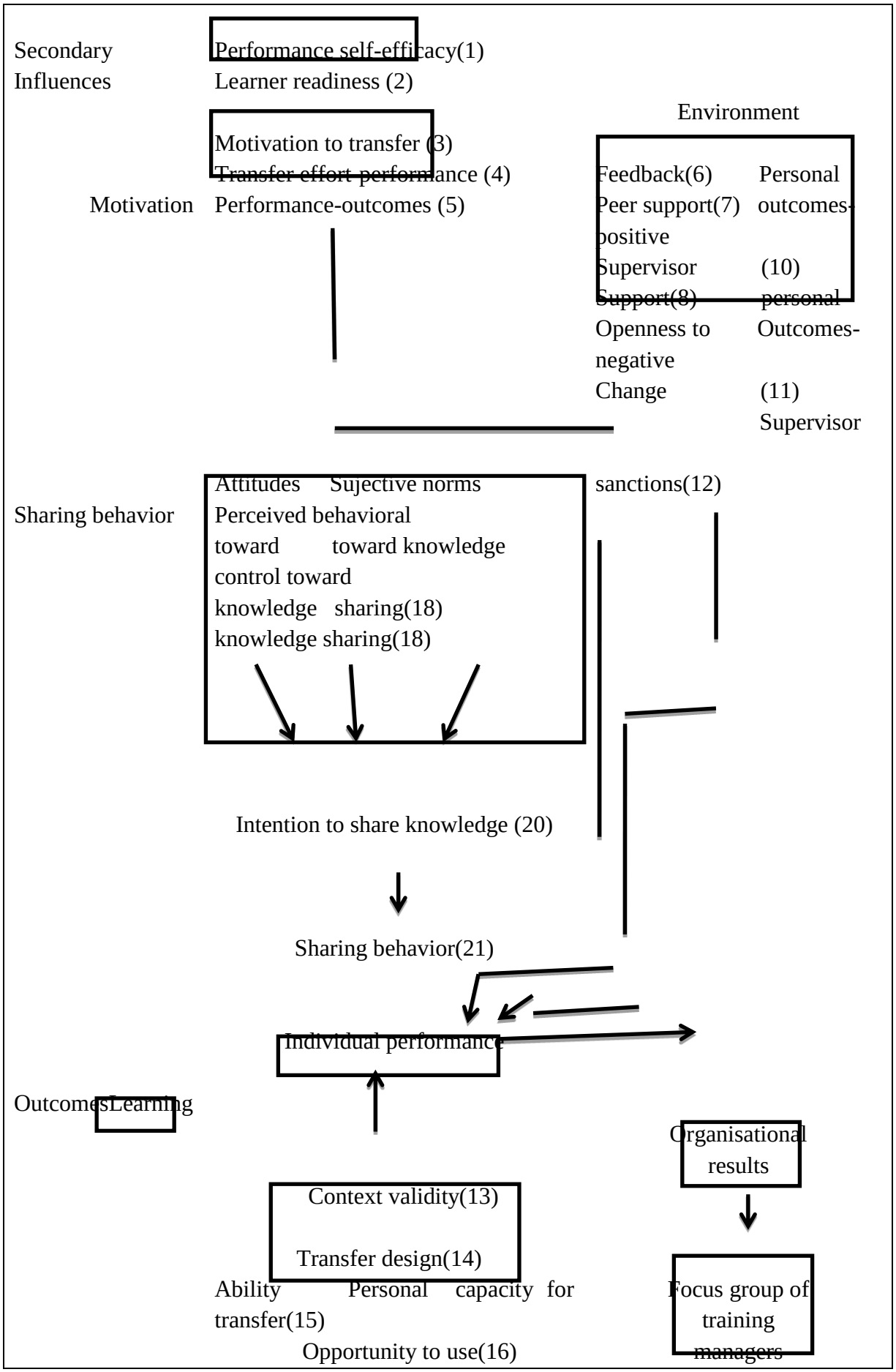
a further understanding of transfer of training in a workplace training context. Figure 3 provides the combined LTSI-TPB model.

Testing The Combined Model : A Proposed Methodology

The authors have received agreements in principle to conduct this analysis in the public sector banking. The model will be tested through a survey of managerial and non – managerial staff from public sector banking who had attended any two types of training (technical or non-technical) not more than three months prior to the survey. Subjects within this time range are assumed to be more likely to avoid obsolescence of the learned training content. A survey questionnaire will be administered and follow-up interviews will be held to focus on key points identified in the analysis of the survey.

The minimum sample size for this study will be based on Hair, Anderson, Tatham and Black (1995) who suggested a ten-to-one ratio of observations to items. In the present study, the items will correspond to the constructs of transfer of training. Assuming that this study has developed a survey instrument of 80 to measure the 16 constructs, the minimum sample size required is 800. Therefore, a total of 1,500 trainees will be targeted, given the difficulty in obtaining 100% response rate.

Figure 3: The Combined Model – LTSI and TPB


Secondary Influences
Performance self-efficacy(1)
Learner readiness (2)
Motivation to transfer (3)
Transfer effort-performance (4)
Performance-outcomes (5)
Motivation
Environment
Feedback(6)
Peer support(7)
Supervisor Support(8)
Openness to Change
Personal outcomes-positive (10)
personal Outcomes-negative (11)
Supervisor sanctions(12)
Sharing behavior
Attitudes toward knowledge sharing(18)
Sujective norms toward knowledge sharing(18)
Perceived behavioral control toward knowledge sharing(18)
Intention to share knowledge (20)
Sharing behavior(21)
Individual performance
Outcomes
Learning
Organisational results
Context validity(13)
Transfer design(14)
Ability transfer(15)
Personal capacity for
Opportunity to use(16)
Focus group of training managers

Adapted from Holton, E F II, Bates R A and Ruoma, Wendy E A, 2000, "The Development of A Generalized Learningb Transfer System Inventory," Human Resource Development Quality, Vol. 11, No. 4, pp. 333-360; and Ajzen 1, 1991, The Theory of planned Behavior. Oranisational Behavior and Human Decision Process, Vol. 50, pp. 179-211.

Following this, semi – structured interviews will be conducted with at least 20 subjects to provide important information regarding the influence of knowledge sharing on transfer of training from their own experience. Subjects will be asked to provide examples or documented evidence during the interview in order to develop case studies.

Research Questions

The project will be driven by the following five research questions:

Research Questions 1

What are the critical factors affecting transfer of training?

Research Questions 2

Is knowledge sharing a key critical factor affecting transfer of training in the public sector banking?

In order to answer these questions, factors analysis will be used as this study involves a large number of variables. Factor analysis is chosen because it is the best method of determining the number and nature of the underlying variable among larger numbers of measures in this study (Kerlinger 1973). According to Holton et al. (2000), exploratory factor analysis is the best method at this stage where there is no strong theory or conceptual framework existing in transfer of training literature. Although a conceptual framework is used in this study to guide the development of instruments, the conceptual framework has not been tested tet. Therefore, exploratory factor analysis is more suitable to apply at this stage.

Research Question 3

If 'Yes' to Q.2, the how does knowledge sharing influence transfer of training in the government agencies in Malaysia?

This question will be answered through the combination of SPSS analysis of the questionnaire and semi-structured interview. Information gathered from the interviews will then be coded into the SPSS system so that they can be analyzed to provide illustrations and examples in order to explain the findings.

Research Question 4

What are trainees' perceptions toward knowledge sharing in the context of transfer of training in the public sector banking?

SPSS analysis of the semi-structured questionnaire will be utilized to gain insight into trainees' own perceptions towards knowledge sharing as a positive indicator of transfer of training. Information gathered from the interview will then be coded into the SPSS system so that they can be analyzed to explain the findings.

Research Question 5

What are trainees' perceptions toward knowledge sharing in the context of transfer of training in the public sector banking?

A total of five training managers in the public sector banking will be targeted. They will be provided with the results of this study. Through an online interview (Web-based), we will seek the opinions of the training managers on knowledge sharing results of the surveys and semi-structured interviews in order to gauge their intention to incorporate knowledge sharing as part of course evaluation.

Conclusions

Whilst both the LTSI and TPB models have been investigated empirically, the link between knowledge sharing and transfer of training has not been specifically tested. This paper has proposed the development of a research design to test whether knowledge sharing can be considered a factor in the transfer of training through the combination of the LTSI and TPB models. The proposed study may have important implications for HRD professionals, as any effort taken to re-organizing, restructuring and re-regulating rewards for labor must take into account the employees' job performance. In terms of understanding the factors affecting transfer of training, this research strategy will contribute to the development of new training evaluation models by adding a new dimension, knowledge sharing.

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