



**Universidade do Minho**

Escola de Psicologia

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## **The Role of Supervisor in Transfer of Learning to the Workplace**

Junho 2013





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Dissertação de Mestrado  
Mestrado Integrado em Psicologia  
Área de Especialização em Psicologia do Trabalho,  
das Organizações e dos Recursos Humanos

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**Professora Doutora Ana Luísa Marques Veloso**

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## **O Papel do Supervisor na Transferência da Aprendizagem para o Posto de Trabalho.**

**Resumo:** A crescente preocupação com a avaliação da formação, nos últimos anos, fez com que o número de modelos para a avaliar aumentasse (Tzeng, Chiang, & Li, 2007). Este aumento deve-se ao facto de existirem evidências de que a formação confere vantagem competitiva às organizações (Brum, 2007), sendo deste modo importante avaliar esta prática de recursos humanos (Holton, 1996).

Os objectivos desta investigação, passaram não só por identificar e analisar os factores que afectam a transferência da aprendizagem, mas também compreender o papel do supervisor neste processo. De modo a atingir os nossos objectivos, a metodologia utilizada contempla um questionário – PLTSI (Velada, Caetano, Bates, & Holton, 2009) e entrevistas exploratórias realizadas aos supervisores.

De um modo geral, o modelo de Holton (1996, 2005) é suportado pelos resultados desta investigação. A consistência interna das escalas é boa e nas entrevistas quase todos os factores do modelo são identificados como possíveis facilitadores ou inibidores da transferência da aprendizagem.

Um resultado interessante foi o facto dos supervisores identificarem associações indirectas entre o seu papel e outros factores que influenciam a transferência da aprendizagem, o que é suportado pela literatura (Antos, & Bruening, 2006).

**Palavras-chave:** Avaliação da formação; Transferência da aprendizagem; Modelo de Holton; PLTSI; Papel do supervisor.

## **The Role of Supervisor in Transfer of Learning to the Workplace.**

**Abstract:** The concern regarding training evaluation has been rising in the past several years, which increased the number of models developed to evaluate training (Tzeng, Chiang, & Li, 2007). This raise is justified by findings stating that training can give competitive advantage to organizations (Brum, 2007), so it is very important to evaluate this human resources (HR) practice (Holton, 1996).

The aims of this research were not only identify and analyze the factors affecting transfer of learning to the workplace, but also to understand supervisors' role in this process. To achieve our objectives the methodology used included a quantitative and qualitative research, using PLTSI (Velada, Caetano, Bates, & Holton, 2009) and exploratory interviews conducted to managers.

Generally speaking, Holton's model (1996, 2005) is supported by this research. The reliability of the scales was good and in the interviews almost every factor of the model was mentioned as a possible facilitator or inhibitor of transfer of learning.

A very interesting result is the fact that, as expected by the literature review (Antos, & Bruening, 2006), managers identified indirect relationships between their roles and other factors influencing transfer of learning.

**Keywords:** Training Evaluation; Transfer of learning; Holton's Model; PLTSI; Supervisor Role.



## **I. Introduction**

Training is a common Human Resources' (HR) practice. It is a practice that can provide competitive advantage to companies (Brum, 2007), and help decrease the gap between desired competencies / performance and the actual competencies / performance at any specific time (Afzal, Rehman, & Mehboob, 2010). Nevertheless, due to the well-known world crisis, training budgets are one of the first to suffer cuts, as the UK Chartered Institute for Personnel Development (Annual Survey Report, 2009) study found out. According to this study, the economic recession made the majority of organizations, cut their budgets on workplace training. However, the study also found that the recession had not changed organizations' awareness of the importance of training, and that some still invest on it, although the average money spent on each employee has diminished (Annual Survey Report, 2009).

There has been an effort to evaluate training outcomes, due to training costs, the possible competitive advantage obtained by it and the rising concern with efficacy and efficiency. Tzeng, Chiang, and Li (2007), reported that over the past years, the number of models that evaluate training has been rising. There are several approaches to evaluate training, their scope ranges from evaluating the benefits for the individual, for the organization or evaluating training returns measuring its costs and benefits.

The theoretical framework used in this research is Holton's model and inventory (Holton, 1996, 2005; Holton *et al*, 2000). The aim of Holton's model goes behind learners' knowledge acquisition, and emphasizes the transfer of that knowledge to the workplace to improve individual and organizational performance (Naquin & Holton, 2003).

Holton lays the foundation of his model in 1996, when he criticized one of the most commonly used models to evaluate training, Kirkpatrick's Four Level Model (Holton, 1996). He states that Kirkpatrick's model is more "a taxonomy of outcomes than a training evaluation model" (Holton, 1996, p. 5). In his opinion, if on-the-job behavior doesn't change after training (transfer of learning), it doesn't necessarily mean that training content or design needs to be changed, this can be explained by other factors such as opportunity to use training or peer/supervisor support (Holton, 2005).

### **Holton's Model**

Holton's model contemplates four macrostructure which are the types of influences transfer of learning is subject to. These four macro-structures are: secondary influences, motivational elements, environmental elements and enhancing/enabling elements. Holton's model received

inspiration of the idea that trainees' behavior is dependent on motivation, ability and environment/context (Noe's, 1986).

The figure below provides some insight of the fact that these structures are not static, but rather connected and any of them is able to influence the outcomes, having the power to potentiate or inhibit transfer of learning.

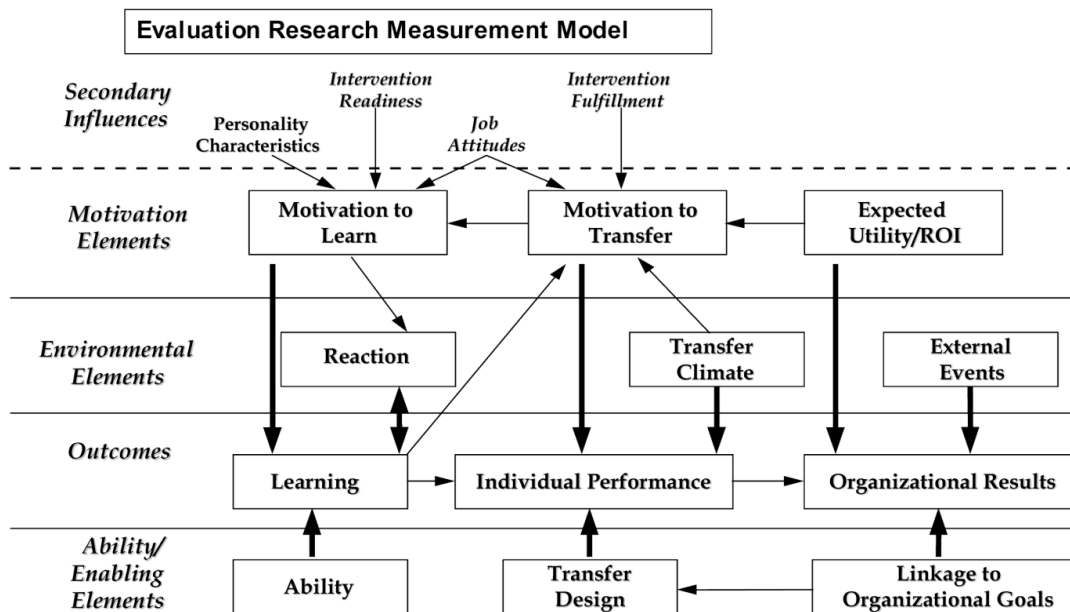


Figure 1. HRD Evaluation Research and Measurement Model. Source: Holton, 1996.

Within these four structures, you can find primary and secondary influences. The difference between them is that primary variables are the ones that have a direct linkage with training outcomes (learning, individual performance and organizational outcomes), while secondary influences can be spotted due to their linkage with primary influences and not with outcomes. For instance, “job attitudes” is a secondary influence, while “transfer climate” is a primary one.

In 2005, Holton revises his model due to recent investigations and theories, especially in the field of motivation, and changed the factor “Organizational Results” to “Organizational Performance”, maintaining its four macrostructures and all other factors.

The factors influencing each outcome can be seen in figure 2 bellow.

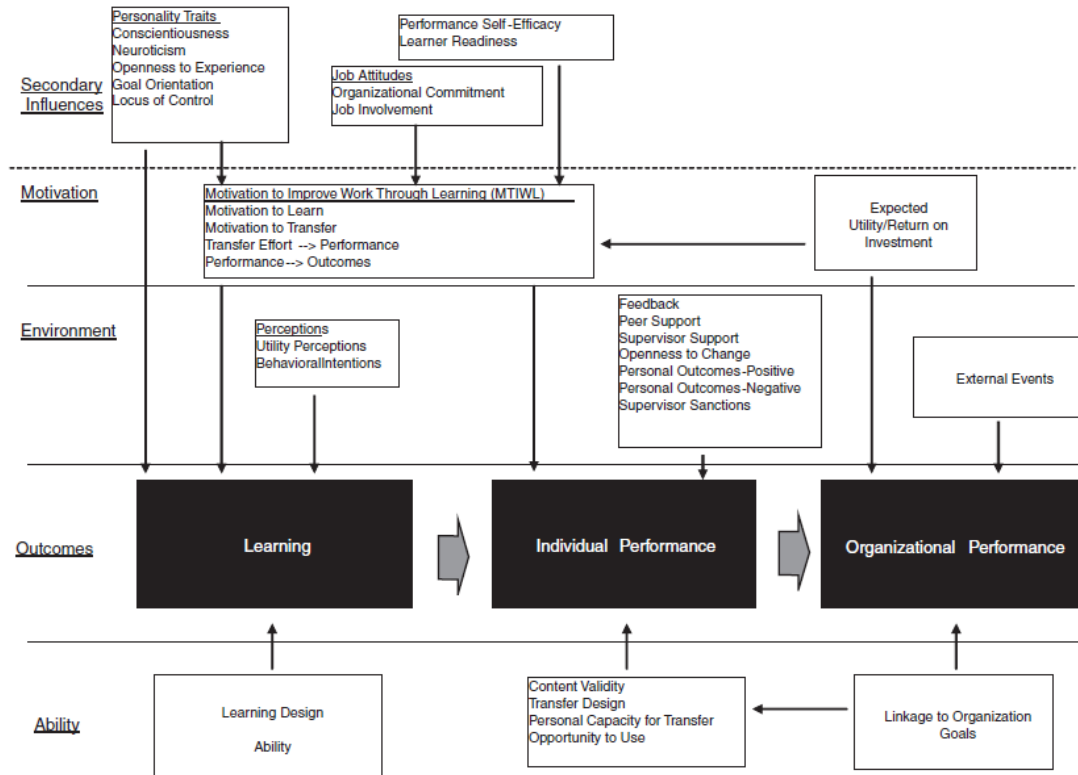


Figure 2. Revised HRD Evaluation and Research Model. Source: Holton, 2005.

### **Learning Transfer System Inventory (LTSI)**

Holton sees his model as a comprehensive framework of training outcomes and influences on performance. As a consequence, in 2000, Holton, Bates and Ruona developed the Learning Transfer System Inventory (LTSI). LTSI provided a good response to the lack instruments measuring transfer and its constructs (Holton, 2005).

The Portuguese validation of the LTSI was responsibility of Velada, Caetano, Bates and Holton (2009), and is called the PLTSI.

The use of LTSI prior and post training can provide several interesting options. It can be a diagnostic tool (used in pre-training); a way to investigate and solve transfer problems; as a follow-up evaluation and can also identify training needs (Holton, *et al*, 2000).

The conceptual map behind LTSI can be checked in Figure 2, it congregates the 16 factors of the original instrument, that then condensate into four macrostructures.

PLTSI has 17 factors (one more that in LTSI), its factors definition, sample items, items number and Cronbach's Alpha can be seen in table 1 (Velada, 2007).

### **Critics to Holton's Model**

Holton, in 2000, was one of the first to criticize its own model. Although it was presented as an instrument able to diagnose and understand HRD outcomes, Holton admits that fully testing his model has been impossible due to the lack of instruments to measure the constructs in it (Holton, *et al*, 2000).

Kirwan and Birchall, in 2006, also decided to test Holton's model. In general terms, their results point to a well fitted model that works as a good diagnostic tool, identifying development opportunities and helping training evaluation, as it sets the roots to what is important for transfer of learning. On the other hand, Kirwan and Birchall (2006) state that the model does not contemplate any interaction between factors of the same type and "describes a sequence of influences on outcomes occurring in a single learning experience and does not demonstrate any feedback loops" (p. 257).

### **Supervisor role in training transfer**

Managers impact on transfer of learning has been widely studied by several researchers (Knyphausen-Aufseß, Smukallam, & Abt, 2009). Managers have a crucial role in helping trainees transfer new knowledge to the workplace (Baldwin & Ford, 1988; Goleman, 2000; Velada, *et al.*, 2007; Afzal, *et al.*, 2010).

A supervisor has many roles and responsibilities as far as training is concerned. Some of them are: identifying training needs; defining objectives, select the most suitable training programs; ensuring its correct design, implementation and allocating the necessary resources to it, etc. (Goleman, 2000; Goldstein, & Ford, 2002; Nijman, 2004). Besides this technical approach, there is also a very important psychological impact that managers can have on their subordinates concerning training. This impact is more associated with the climate and training culture that trainees perceive in the organization. Several of these variables are integrated in Holton's revised model, such as "Supervisor Support", "Supervisor Sanctions", "Opportunity to use" and "Feedback" (Noe, 1986, 2008; Holton, 1996, 2005). In the same logic, Facticeau, Dobbins, Russel, Ladd, & Kudisch (1995) and Short (1997) see supervisor support as a more generic concept which includes setting performance goals, allowing subordinates to use new knowledge or change their behaviors, giving positive feedback (recognition and rewards), avoiding negative feedback, tolerating mistakes and reinforcing transfer of learning. Nevertheless, several other researchers (Goleman, 2000; Antos & Bruening, 2006; Noe, 2008; Young, 2011), refer to the impact of other variables. Supervisors have the power to influence trainees' expectations towards training, stimulate subordinates to participate in training;

develop new competences and improve job performance, which modulates their motivation to learn and transfer knowledge, improving as well the utility and return trainees' expect from training.

This suggests a more complex model where leadership plays a very important role, especially through support and communication (Azfal *et al*, 2010). Leaders might have a significant impact on factors correlated with outcomes. These factors have the ability to influence transfer in a positive or negative manner, for instance through motivation or peer support. A scheme of one of these models can be seen in figure 3, below.

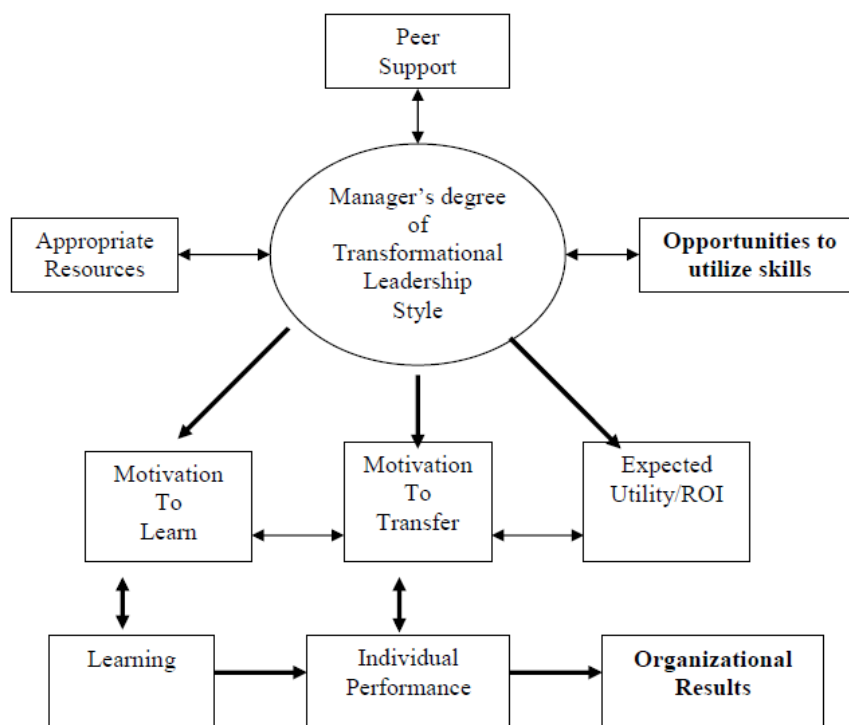


Figure 3. Manager Impact on Trainee Motivation Characteristics Evaluation Model. Source: Antos & Bruening, 2006.

## II. Methodology

### Research Questions and Objectives

The main goal of this research is to study and analyze the factors that affect transfer of learning to the workplace, giving special attention to the role of supervisors (also called managers or leaders). To do so, we explore the leaders' perception of their own role and impact in training transfer.

We intend to understand which factors are working as enablers or inhibitors in this process and use this information as an improvement guideline to maximize transfer of learning to the workplace.

## **Procedures**

After approval and authorization from the organization to conduct the research, the survey (PLTSI) was sent to employees who attended training in the previous 6 months. Surveys were sent by mail and included a brief introduction with the aims of the study and explaining its relevance, the possibilities of improvement it could provide, as well as the importance of honest and serious answers. Anonymity was also addressed by stating that the data collected could not be traced back to participants. The practical measure taken to ensure this ethical procedure was to provide a mail box where participants returned their survey, and a white envelope, so that answers could not be spotted by other people.

The data from the survey was analyzed using SPSS (version 20), and the interviews data was interpreted using template analysis (King, 1998).

After obtaining the results from the PLTSI, semi-structured interviews were conducted, to understand managers' perception of their own role in transfer of learning.

The first step in data analysis was measuring its internal consistency, obtaining a Cronbach's alpha of .94, being the cut point .70 (Martins, 2011). Subscales of this instrument also found good indicators of internal consistency (see Table 2). Nonetheless, on the subscale "Opportunity to use training" (see Table 1), item 61 ("Budgetary constraints of my organization will prevent me from using the skills acquired on the job training.") was removed as it was causing a gap in the subscale consistency and did not suit organizational context. After removal Cronbach's alpha from this subscale increased from .37 to .72. The final stage was to develop a report identifying facilitators and inhibitors of transfer of learning in the organization and to provide possibilities of improvement from this research.

## **Sample**

### **LTSI**

The participants on this research were employees from an education and research organization in Portugal. The number of surveys initially sent was 289 (total of workers who attended training on the previous six months), from this 141 were returned completed, providing a response rate of 48.8%. However, 7 surveys were additionally deleted due to their percentage of missing values, which was superior to 10% (Martins, 2011). Regarding the social-

demographic characterization of the sample, 89 (66.4%) individuals were females and 2 (1.5%) participants did not answer this question.

The mean age for participants was 42.58 years old (SD=7.46), ranging from 28 to 67 years old. The average length of service in the company had a mean of 14.48 years (SD=8.35), being the minimum and maximum values 1 and 40 years, respectively. In terms of academic qualifications, 11 (8.3%) participants did not reach high school, 46 (34.6%) had high school diploma, 14 (10.5%) were attending university, 43 (32.3%) had a bachelor degree and 19 (14.3%) had concluded a master’s degree.

Concerning participants position in the organization, the sample was divided into 3 (2.4%) managers, 8 (6.4%) information and technology (IT) specialists, 11 (8.8%) IT technicians, 12 (9.6%) operational assistants, being the category with most participants technical assistants, with 61 (48.8%) individuals.

The annual average hours spent in training was 18.44 (SD=15.98), with a range of 1 to 70.

### Interviews

The interviews were conducted only with managers. The number of participants in the interviews were 5 individuals, to make sure theoretical saturation was achieved (Glaser and Strauss, 1967).

### Measures

The instrument used to measure the variables associated with transfer of learning was PLTSI (Velada *et al*, 2009).The inventory has 89 items, aggregated into 17 factors (see table 1). The answers are given in a 5 points Likert scale that ranges from 1 (Strongly disagree) to 5 (Strongly agree). The questionnaire has 11 inverted items (11, 12, 20, 27, 61, 63, 64, 73, 74, 76, 77) and is divided into two domains, training specific scales and general scales.

Table 1 shows PLTSI factors, definitions, sample items and items numbers.

<b>Factor</b>	<b>Definition</b>	<b>Sample Item</b>	<b>Items</b>	<b><math>\alpha</math></b>
<b>General Scales</b>				
<u>Transfer effort-performance expectations</u>	Expectation that effort to transfer learning will lead to changes in job performance.	“My job performance improves when I use new things that I have learned.”	65, 66, 69, 71, 82*	.80

<u>Performance-outcomes expectations</u>	Expectation that changes in job performance will lead to valued outcomes.	“When I do things to improve my performance, good things happen to me.”	64, 67, 68, 70, 72	.79
<u>Resistance / openness to change</u>	Degree to which group norms are perceived by individuals as an obstacle to use skills and knowledge acquired in training.	“People in my group are open to changing the way they do things.”	73, 74, 75, 76, 77, 78	.82
<u>Performance self-efficacy</u>	An individual’s beliefs that they are able to change their performance.	“I am confident in my ability to use newly learned skills on the job.”	83, 84, 85	.65
<u>Performance coaching</u>	Formal and informal indicators from an organization about an individual’s job performance.	“After training, I get feedback from people about how well I am applying what I learned.”	79, 80, 81, 86, 87, 88, 89	.84
<b>Training Specific Scales</b>				
<u>Learner Readiness</u>	Extent to which individuals are prepared for training.	“Before the training, I had a good understanding of how it would fit my job related development.”	9, 10, 13	.57
<u>Motivation to Transfer</u>	Direction, intensity, and persistence of effort to transfer skills and knowledge from training to the job.	“I get excited when I think about trying to use my new learning on my job.”	1*, 2, 3, 4, 5	.78
<u>Positive Personal Outcomes</u>	Extent to which applying training on the job leads to positive outcomes for	“Employees in this organization receive various “perks” when	6, 7, 8, 15, 16, 18, 22	.82



	the individual.	they use newly learned skills on the job.”		
<u>Negative Personal Outcomes</u>	Degree to which individuals believe that not applying skills and knowledge learned in training will lead to negative outcomes.	“If I do not use my training, I will be cautioned about it.”	14, 17*, 21, 23, 24	.80
<u>Personal Capacity for Transfer</u>	Time, energy, and mental space that individuals have to make changes required to transfer learning to the job.	“My workload allows me time to try the new things I have learned.”	11, 12, 19, 20, 26	.71
<u>Peer support</u>	Extent to which peers reinforce and support use of learning on the job.	“My colleagues encourage me to use the skills I have learned in training.”	28, 29, 30, 31	.83
<u>Supervisor Support</u>	Extent to which supervisors support and reinforce use of training on the job.	“My supervisor sets goals for me that encourage me to apply my training on the job.”	32, 33, 37, 39, 40, 43	.87
<u>Supervisor Sanctions</u>	Degree to which individuals perceive negative responses from supervisors/managers when applying skills learned in training. PLTSI divides sanctions into two groups, behavioral and cognitive.	“My supervisor opposes the use of the techniques I learned in training.”	Behavioral 34, 35, 36, 38, 41  Cognitive 42, 44, 45, 46	.87  .76
<u>Perceived Content Validity</u>	Extent to which trainees’ judge training content to accurately reflect job	“What is taught in training closely matches my job requirements.”	47, 48, 49	.78

	requirements.			
<u>Transfer Design</u>	Degree to which (a) training has been designed and delivered to give trainees the ability to transfer learning to the job, and (b) training instructions match job requirements.	“The activities and exercises the trainers used helped me know how to apply my learning on the job.”	53, 54, 55	.77
<u>Opportunity to use</u>	Extent to which trainees are provided with or obtain resources and tasks on the job enabling them to use training on the job.	“The resources I need to use what I learned will be available to me after training.”	50, 56, 60, 63	.77
Transferability	Degree to which trainees foresee that training and the work context prepare them to transfer learning.	“The situations used in training are very similar to the ones I find in my workplace.”	51, 52, 57, 58, 59	.84

Table 1. Factors, definitions, sample items and items numbers in PLTSI, adapted from Velada (2007).

\*Items marked with an asterisk aggregated in different factors in PLTSI than they did in the original LTSI.

### III. Results

Having in mind the goals set for this research several data analysis procedures (statistical and content analysis) were performed to obtain the answers to the questions developed.

#### PLTSI

Concerning PLTSI, the factors perceived by employees as facilitators of transfer of learning to the workplace were: Learner Readiness ( $\bar{X} = 3.63$ ,  $SD = .54$ ); Motivation to Transfer ( $\bar{X} = 3.73$ ,  $SD = .63$ ); Transfer Design ( $\bar{X} = 3.68$ ,  $SD = .67$ ) and Transferability ( $\bar{X} = 3.74$ ,  $SD =$

.52), within training specific scales. Still in this category and related to supervisor's role, Supervisor Support was the factor with the highest score ( $\bar{X} = 4.68$ ,  $SD = 1.07$ ), making employees feel they were encouraged and motivated by their managers to apply learning. A similar perception was that managers did not create obstacles or disapproved attempts to apply knowledge developed in training, resulting in a low score in the sanction factors (Behavioral Supervisor Sanctions: ( $\bar{X} = 1.92$ ,  $SD = .63$ ) and Cognitive Supervisor Sanctions ( $\bar{X} = 2.10$ ,  $SD = .59$ )). Employees' expectation that if they apply training in the workplace, their performance would improve was also recognized as a facilitator of transfer of learning, from general scales (Transfer of Effort - Performance Expectations:  $\bar{X} = 3.97$ ,  $SD = .48$ ), to same happened to Performance Self-Efficacy ( $\bar{X} = 3.96$ ,  $SD = .55$ ), which is employees' perception of their ability to change their own performance.

With low scores we can emphasize both Positive and Negative Personal Outcomes, being their respective averages 2.63 ( $SD = .73$ ) and 2.44 ( $SD = .68$ ), this means that employees don't expect any positive or negative consequences when they transfer or not learning, respectively. Another factor that works as an inhibitor is Resistance / Openness to Change ( $\bar{X} = 2.84$ ,  $SD = .37$ ).

All remaining factors are seen as neutral factors in the process of improving individual and organizational performance through training. Table 2 summarizes the data disclosed above and displays the internal consistency of each factor in this research, even though it has been studied when the LTSI was validated to Portugal.

<b>Factor</b>	<b>N</b>	<b>Min</b>	<b>Max</b>	<b><math>\bar{X}</math></b>	<b>SD</b>	<b><math>\alpha</math></b>
<u>General Scales</u>						
Transfer effort-performance expectations	134	2.20	5.00	3.91	.48	.78
Performance-outcomes expectations	134	1.00	5.00	3.02	.59	.77
Resistance / openness to change	134	2.33	5.00	2.84	.37	.88
Performance self-efficacy	134	1.67	5.00	3.97	.55	.81
Performance coaching	134	1.00	5.00	3.22	.68	.89
<u>Training Specific Scales</u>						
Learner Readiness	134	1.67	5.00	3.63	.54	.66
Motivation to Transfer	134	1.40	5.00	3.73	.63	.78
Positive Personal Outcomes	134	1.00	5.00	2.63	.73	.89

Negative Personal Outcomes	134	1.00	4.00	2.44	.68	.74
Personal Capacity to Transfer	134	1.40	5.00	3.21	.47	.72
Peer support	134	1.25	5.00	3.37	.65	.85
Supervisor Support	134	1.17	5.00	4.68	1.07	.87
Behavioral Supervisor Sanctions	134	1.00	3.80	1.93	.63	.91
Cognitive Supervisor Sanctions	134	1.00	4.00	2.10	.59	.80
Perceived Content Validity	134	1.00	4.33	3.14	.71	.77
Transfer Design	133	1.33	5.00	3.68	.67	.84
Opportunity to use	134	2.20	5.00	3.20	.43	.72*
Transferability	134	2.00	5.00	3.74	.52	.81

Table 2. N, minimum, maximum, average, standard deviation and Cronbach's alpha in PLTSI data analysis.

### **Interviews**

The aim of the interviews was divided into 3 sections. First, we wanted to understand how supervisors perceive training and what outcomes and changes occur because of it. Another aim was to identify the facilitators and inhibitors of transfer of learning, and last but not least, the idea was to capture supervisors understanding of their own role and impact in this process. The sample of these interviews consisted of 5 managers (some of those referred to have participated in the PLTSI phase), however the sampling method used was a sample of opportunity (Martins, 2011). The interviews took place between April 15<sup>th</sup> and April 23<sup>rd</sup>. It was guaranteed to participants the safeguarding of their confidentiality. The interviews length was between 20 and 45 minutes.

The first step was to define our objectives for the interviews; afterwards an interview script was developed in a way that allowed us to retain the relevant information for the goals we wanted to achieve.

Interviews were conducted addressing all ethical issues; and were administered using Skype. The conversation was not recorded due to the possible inhibitory effect this could have on participants' willingness to answer questions in an honest and open manner. The data was registered by taking notes throughout the interview. Even so, it was pointed out by the subjects the concern of how some statements might sound when taken out of context.

From the data obtained, only suitable and relevant information was used to develop the template analysis, some information, like "I'm sorry for the delay, but my microphone wasn't

working.” was ruled out from the data. After this, the data collected, was analyzed using a template analysis.

The analysis started after interviewing the five participants, as theoretical saturation was achieved, i. e. no new data has been added to the existing template of analysis (Glaser and Strauss, 1967).

The interview’s script was developed using Holton’s model and PLTSI structure (Velada *et al*, 2009). Results were codified into five main themes: impact of training; general facilitators/inhibitors of transfer of learning; and supervisor related facilitators and inhibitors. A synopsis of the template analysis main structure can be found in table 3 (below.)

<b>Impact of training</b>	Change occurred	Knowledge developed/recycled Behaviors changed Procedures changed Individual/Group Performance improved
	Change did not occur	Time wasted Resources wasted
<b>General facilitators of transfer of learning</b>	Learner Readiness	Expectations towards training Knowledge of training course
	Motivation to Transfer	Desire to use training
	Personal Capacity to Transfer	Time Energy
	Openness to change	Personal Openness to Change
	Similarity between Training and Work	Perceived content validity Transfer design Transferability
	Training Culture	Promotion of Training Support of Training Importance of Training
<b>General inhibitors of transfer of learning</b>	Learner Readiness	Expectations towards training Knowledge of training course
	Motivation to Transfer	Lack of interest in training

	Personal Capacity to Transfer	Time Energy
	Lack of Similarity between Training and Work	Perceived Content Validity Transfer Design
	Resistance to change	Individuals resistance to change
	Training Culture	Training as a reward
<b>Supervisor related facilitators of transfer of learning</b>	Influence on Learner Readiness	Influence on Expectations
	Influence on Motivation	Transfer effort-performance expectations Performance-outcomes expectations
	Support	Supervisor Support Peer Support
	Openness to Change	Supervisor Openness to Change
	Learning Culture	Training as a Vital Practice
	Opportunity to Use	Physical Resources Human Resources
	Performance Coaching	Suggestions Help
<b>Supervisor related inhibitors of transfer of learning</b>	Trainees Selection Criteria	Reward Needs of Development Minimum required hours
	Training Needs Analysis	No Needs Analysis Performed
	Training Knowledge	Lack of Knowledge about Training Courses
	Influence on Learner Readiness	Influence on Expectations
	Influence on Motivation	Lack of Motivation

Supervisor's support	Lack of Availability Criticism
Opportunity to Use Training	Non Verbalization of the Opportunity
Performance Coaching	Non Verbalization of Positive Aspects and Things to Improve
Resistance to change	Supervisor Resistance to Change
Training Culture	Training as an Irrelevant Practice

Table 3. Main themes and subthemes of template analysis.

**Impact of training** - *“Do you identify changes after your subordinates attend training? What are the positive and negative outcomes of training?”*

From the question above, results were divided into two distinct subthemes: 1. managers who report changes after training and 2. managers who don't acknowledge any changes, identifying negative consequences due to training. The four categories of changes were: 1. Knowledge developed/recycled; 2. Behaviors changed; 3. Procedures changed; 4. Individual / Group Performance Improved. On the other hand, the negative consequences of training attendance were: 1. Time wasted and 2. Resources wasted.

Subthemes		Data from the interviews
Change occurred	Knowledge developed / recycled	“Training helps you recycle your knowledge...” “... to keep your knowledge updated you need to attend training.”
	Behaviors changed	“... training is very important to teach employees how to behave and interact with customers.”
	Procedures changed	“Training allows us to simplify processes and procedures in our department”. “Employees usually come up with ideas to change procedures after training.”
	Individual/Group Performance	“New changes and ideas can improve performance...” “You perform tasks and procedures quicker and simpler so

	improved	you are more efficient.”
Change did not occur	Time wasted	“When nothing changes they [managers] see training as a time waste.” “Tasks pile up when you go to training so improvement must be made; otherwise you are just wasting time.”
	Resources wasted	“If nothing changes and improves with training, then a lot of resources were wasted, human and monetary”

Table 4. Subthemes and data from interviews regarding “Impact of training”.

**General facilitators of transfer of learning** - *“On your opinion what can influence the application of knowledge developed in training to the workplace? Think of a situation when changes occurred. What do you think that might have contributed to that?”*

Managers identified facilitators for transfer of learning. From the answers obtained, six subthemes were formed: “Learner Readiness”; “Motivation to Transfer”; “Personal Capacity to Transfer”; “Openness to Change”; “Similarity between Training and Work” and “Training Culture”.

Subthemes		Data from the interviews
Learner Readiness	Expectations towards training	“Employees need to know how this training course can improve their work.”
	Knowledge of training course	“...they have to know what the training will be about.” “Everyone should be aware of the topics and level taught...”
Motivation to Transfer	Desire to use training	“My subordinates are motivated to learn and to improve their work, using training knowledge.”
Personal Capacity to Transfer	Time	“Employees need to have the time to try new things, to get it wrong and to try again.”
	Energy	“When they want to change something you can see them dedicating time and energy to it.”
Openness to change	Personal	“... people have to attend it [training] with an open mind.”
	Openness to Change	“Personal interest to know, improve and develop is what



		makes the difference”
Similarity between Training and Work	Perceived Content Validity	“It’s very important that people understand from the training how they can apply knowledge to their work.” “The examples and situations presented should be as close as possible to the work itself.”
	Transfer Design	“Trainers have to provide a practical knowledge.” “...they should ask for practical questions of trainees’ workplace.”
	Transferability	“...has to be more similar with the jobs performed.” “There is the expectation that the new information can be connected to the job.”
Training Culture	Importance of Training	“The whole organization has to show and act as if training is an important part of the job...” “Verbalization of the benefits of training is important ...” “Everyone should stimulate knowledge recirculation.”

Table 5. Subthemes and data from interviews on “General facilitators of transfer of learning”.

**General inhibitors of transfer of learning** - *“On your opinion what can influence the application of knowledge developed in training to the workplace? If changes do not occur, what factors do you think that contribute to this situation?”*

Several factors identified as inhibitors were related with the individual, so there seems to exist the perception that if transfer doesn’t occur it might be related to individual characteristics. Some of the subthemes mentioned above can also work as an inhibitor. There are six subthemes, “Learner readiness”, “Motivation to transfer”, “Personal capacity to transfer”, “Lack of Similarity between Training and Work”, “Resistance to Change” and “Training culture”.

Learner Readiness	Expectations towards training	“It is important to have an idea of how it can improve your work; otherwise it will be for nothing.”
	Knowledge of training course	“If people have no idea what the training is about they probably will not use its content.” “Choosing a training course by its name can be very misleading.”

Motivation to Transfer	Lack of interest in training	<p>“Some individuals are motivated to attend training just so they can be out of the office for a couple of hours. They have no real intention of using the knowledge.”</p> <p>“Training can be a fantastic tool or a waste of time, depending on how interested you are.”</p>
Personal Capacity to Transfer	Time Energy	<p>“... people don’t have time to try new things.”</p> <p>“You need some time to understand how you can use and apply the training, it is not automatic.”</p>
Lack of Similarity between Training and Work	Perceived Content Validity	<p>“... [training] can be very different from your work context.”</p> <p>“People might not always understand how to use the abstract things they learnt.”</p>
	Transfer Design	<p>“Develop training in a way that is very similar with real life situations doesn’t happen as much as we would like.”</p> <p>“Sometimes training is too focused for one professional group.”</p> <p>“Training is seldom connected to the context or competencies required.”</p>
Resistance to change	Individuals resistance to change	<p>“I know people that do not want to change the way they work.”</p> <p>“Not everyone likes to try new things and to constantly improve procedures.”</p>
Training Culture	Training as a reward	<p>“When training works as a reward, people go there just to relax and enjoy.”</p> <p>“When training is a reward and you don’t expect any changes, nothing will improve.”</p>

Table 6. Subthemes and data from interviews on “General inhibitors of transfer of learning”.

**Supervisor related facilitators** - *“In your opinion, which supervisor behaviors/attitudes have the potential to enhance transfer of learning?”*

Managers identified several aspects in their role they foresee as facilitators of transfer of learning. Several of the variables identified are related to the influence they can exert on

others, for instance “Influence on learner readiness”; “Influence on motivation”, “Influence on support” and “Performance Coaching”. Other subthemes obtained were “Openness to change”; “Learning culture” and “Opportunity to use”.

Influence on Learner Readiness	Influence on Expectations	<p>“By doing a careful selection of training courses and trainees we can contribute to change what employees expect of training.”</p> <p>“We should make clear that training is an important practice and that we expect some good to come out of it.”</p>
Influence on Motivation	Transfer effort-performance expectations	“We need to tell them that training can be a great way to change work for the better and that results in a better performance.”
	Performance-outcomes expectations	“Performance improvement can result in recognition from the supervisor and peers. In long term it can result in a promotion.”
Support	Supervisor Support	<p>“Receiving support is essential to keep motivation and to overcome obstacles.”</p> <p>“Feel supported means receive encouragement, positive feedback, attention and opportunities to grow. This is very important, not only in training but in all work matters.”</p>
	Peer Support	“The acceptance and support provided by peers is also very important, ...”
Openness to Change	Supervisor Openness to Change	<p>“Supervisors need to have predisposition to accept and adapt to change.”</p> <p>“...willingness to accept change, to listen and understand what is proposed by employees.”</p>
Training Culture	Training as a Vital Practice	“It’s necessary that supervisors and leaders commit themselves with training.”
Opportunity to Use	Physical Resources	<p>“We have to provide the necessary resources so that knowledge is used in the workplace.”</p> <p>“With computer programs you have to give access to the program, otherwise people will forget everything they</p>

		learnt.”
	Human Resources	“The individual has a central role in using training, [...]. They must have the time, energy and state of mind required.”
Performance Coaching	Suggestions	“People don’t always get it right at first time, so managers’ role is to be patient and motivate people to keep going.” “You have to welcome new ideas and to make small suggestions along the way...”
	Help	“The general feeling of your subordinates has to be that they can count on you for any problem they have...”

Table 7. Subthemes and data from interviews regarding “Supervisor related facilitators of transfer of learning”.

**Supervisor related inhibitors** – “Which supervisor behaviors/attitudes might inhibit transfer of learning, in your opinion?”

Supervisors recognize quite a few behaviors and attitudes that can as inhibitors of transfer of learning.

The subthemes obtained from the interview were: “Trainees Selection Criteria”; “Training Needs Analysis”; “Training Knowledge”; “Influence on Learner Readiness” and “Influence on Motivation”, as pre-training variable that can already narrow down posterior outcomes. After training managers acknowledge other influences, such as: “Influence on Support”; “Supervisor’s Support”; “Opportunity to Use”; “Performance Coaching”; “Resistance to Change” and “Training Culture”.

Trainees Selection Criteria	Reward	“The way we select people is crucial, because if training is just a reward don’t expect anything to come out of it.”
	Needs of Development	“Knowing what areas are critical and needs to be improved for each individual determines how much change there is.”
	Minimum required hours	“I think it’s fantastic that people have to attend training, but sometimes it creates bad situations, when no one gives importance to training and attendance is just to respect the

		law.”
Training Needs Analysis	No Needs Analysis Performed	“Needs assessment is very important, [...] if it isn’t performed in a pell-mell way, training probably won’t be adequate.”
Training Knowledge	Lack of Knowledge about Training Courses	“As important as trainees’ knowledge about the training course, is supervisors’ knowledge as well [...]. How can we evaluate the changes and the development if we know nothing about it?”
Influence on Learner Readiness	Influence on Expectations	“When a leader shows his lack of interest, then employees will feel the same or won’t bother to make an effort to apply it.”
Influence on Motivation	Lack of motivation	“It’s a vicious cycle! Not making a proper selection, transmitting lack of interest and knowledge of training creates lack of motivation in workers.”
Supervisor’s Support	Lack of Availability	“If you don’t give them [employees] the necessary attention and time to develop their skills, they will stop trying.”
	Criticism	“Feedback is central in both ways. Criticizing someone’s effort to improve and change things for the better has one result, people won’t lose time on that.”
Opportunity to Use Training	No Resources Allocated	“Sometimes people can’t use training because the right resources aren’t available, this can mean physical resources, time and support.”
	Non Verbalization of the Opportunity	“Although we provide opportunities, generally speaking, it’s possible that if you don’t say it to your subordinates they might think there isn’t room for trial and error.”
Performance Coaching	Non Verbalization of Positive Aspects and Things to Improve	“You can’t just say that in your opinion that procedure won’t work, you have to explain why and give advice on what would suit better.” “I guess sometimes we don’t give proper feedback, both in terms of quantity and quality...”

Resistance to change	Supervisor Resistance to Change	<p>“If managers themselves are not open to make changes and improve, you can’t ask employees to give new ideas and to change things.”</p> <p>“The personality of supervisors is also a key factor in transfer of learning, as they can either boost or inhibit it.”</p>
Training Culture	Training as an Irrelevant Practice	<p>“When training is seen as a waste of time, managers don’t invest and attribute importance to it. Employees don’t perceive a culture where it is a central matter.”</p>

Table 8. Subthemes and data from interviews regarding “Supervisor related inhibitors of transfer of learning”.

The interviews allowed us to understand managers’ perception of training and transfer of learning and enabled us to obtain a lot of data from the five themes in study.

#### IV. Discussion and Conclusion

The aim of this research was to study the variables associated with transfer of learning and to test Holton model and PLTSI. We, then, focused on the role of managers, supervisors and leaders in the process of transfer of learning.

Using PLTSI, we obtained a clear distinction between factors identified as facilitators and inhibitors on transfer of learning (see table 9).

High scores	Low scores
Transfer effort-performance expectations	Openness to change
Performance self-efficacy	Positive Personal Outcomes
Learner Readiness	Negative Personal Outcomes
Motivation to Transfer	Behavioral Supervisor Sanctions
Supervisor Support	Cognitive Supervisor Sanctions
Transfer Design	---
Transferability	---

Table 9. Results from PLTSI: high and low scores of PLTSI.

In the section “High scores” all factors work as facilitators, nevertheless, as mentioned previously in “Low Scores” both behavioral and cognitive sanctions are actually a positive

result, as it means that employees don't experience any kind of sanction from their supervisor. Positive and Negative Personal Outcomes scores mean that individuals do not have positive or negative consequences derived from using or not using training, respectively. From the above, only "Positive Personal Outcomes" and "Openness to Change" actually work as inhibitors, because their low scores is lack of positive outcomes and lack of openness, respectively.

In PLTSI, Supervisor Support was perceived as the main facilitator in transfer of learning, a surprising contrast was the fact that neither "Opportunity to use" or "Performance coaching" were seen as facilitators in this process.

The interviews helped to shed light to the inventory's results. In many subscales managers identified in the same scales situations in which the factor could work as facilitator or inhibitor. Some examples are: Learner Readiness; Motivation to Transfer; Personal Capacity to Transfer; Perceived Content Validity; Transfer Design; Training Culture and Transferability.

Supervisor support to training transfer is seen by managers as a broad concept, being an important variable that plays a key role in a job, even besides training. Managers describe support as: a source of motivation and encouragement to employees; the opportunity to discuss suggestions/changes and issues/obstacles; positive and constructive feedback and help when needed.

Managers might also have given some insight on why aren't "Opportunity to use" and "Performance Coaching" perceived as facilitators. Regarding "Opportunity to use" several managers stated that they don't usually verbalize the fact that people are free to suggest changes in procedures and in the workplace in general. Other issue discussed was the fact that it is hard to change procedures and standards as the organization is big and it would mean everyone would have to change the way the work, which makes it nearly impossible. With respect to "Performance Coaching", some statements emphasized a lack of feedback and even worst, managers intervening mostly when things need to be improved or corrected. Another relevant aspect referred is the importance of explaining why a particular change wouldn't work, thank the intervention and let the door opened to new proposals. The final obstacle mentioned is the workload managers have, which sometimes uses all the resources they have, meaning less feedback and communication than desired.

The interviews refer almost each of the 17 factors from the PLTSI (Velada *et al*, 2009). The ones not mentioned were the two kinds of sanctions (behavioral and cognitive) and negative personal outcomes. This results are in agreement with the inventory results, as this were

factors with a low score, once very few people seems to experience these, it's understandable that managers don't mentioned it in the interviews, as it is not a common practice.

Another factor left out of the interview themes was Performance Self-Efficacy that is related to one's self-esteem. Has the interview was performed to managers, they did not consider that a person's belief on their ability to change their performance, has a central role on transfer of learning, or considered that there are other factors that play a much important role.

Generally speaking, Holton's model (1996, 2005) is supported by this research. The reliability of the scales was good and in the interviews almost every factor of the model was mentioned.

A very interesting result is the fact that, as expected by the literature review (Antos, & Bruening, 2006), managers identified indirect relationships between managers' roles and transfer of learning. Peer support and learner readiness are two factors related to transfer of learning. Managers mention these variables because they consider that apart from its direct relationship with transfer, they can maximize or minimize its effect by influencing subordinates' expectations and behaviors.

## **V. Limitations**

In this section, limitations of this research are identified and recommendations for future research are made.

To allow generalization of results, the sample should have been larger and should compromise more than one organization, as this can be a limitation to generalization of findings.

Other issue, mentioned by participants is the lack of knowledge of terms like "feedback" and the "too literate" translation of some expressions from the original version, such as "excitement".

A recommendation for future research is to measure and understand the real impact and association between the indirect variables identified in the interviews and in the literature review (Antos & Bruening, 2006). Motivation and climate/context are related to transfer of learning and this research, as well as previous research pointed out to the possibility of supervisors influencing these variables. It would be interesting to understand to what degree is this true and measure what is the real impact of these indirect variables, to understand if they mediate the relationship between others.



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