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The Influence of Training Design Factors on Training Transfer: A Preliminary Study

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Abstract
Organizations invest considerably in training and development programmes anticipating successful outcomes. An unsuccessful training is often associated with poor return on investment. An effective training focuses on two critical components, which are the design of the training, also known as training design factors comprising of perceived content validity and transfer design, as well as training transfer, but few of them focus on the context of academics in university. Thus, this preliminary study aims to expand training and development body of knowledge through the investigation of the relationships and influence of training design factors on training transfer. This quantitative, correlational research uses simple random sampling technique to determine the required sample size. This study involves a total of 100 academics who are working in a public, research university in Malaysia. The academics have previously attended a training programme organized by the university prior to participating in this study. Results show that both training design factors i.e., perceived content validity and transfer design are significantly related to but are not significantly influencing training transfer among the academics. It is highly recommended for future researchers to replicate this study with a bigger sample size and to include other variables related to training transfer as well.
Keyword: Training Transfer, Training Design, Perceived Content Validity, Transfer Design

Introduction

The degree to which a person can apply the knowledge, abilities, and attitudes acquired through training programmes to their employment is known as training transfer (Baldwin & Ford, 1988; Van Gramberg & Baharim, 2005; Burke & Hutchins, 2008; Baldwin et al., 2009; Lacerenza et al., 2017). Training transfer is a term used to describe how well individuals adapt what they learn from training programmes to their employment over time, according to (Ladyshewsky and Flavell, 2012). Researchers have used the term "training transfer" to refer to the transfer of knowledge, learning transfer, and training transfer. There are some differences between these nouns, according to some scholars.

For instance, Kuchinke (1995) outlined the differences between the notions of training transfer and learning transfer, noting that the former refers to performance and the latter to learning attainment. The phrases "training transfer" and "learning transfer" often refer to the

degree to which one can apply the knowledge, skills, and attitudes acquired during training programmes to his/her employment (Baldwin et al., 2009; Lacerenza et al., 2017). Three key factors often have an impact on training transfer: trainee characteristics, training design, and work environment (Ng & Ahmad, 2018).

Few studies on training transfer focus on training design factors i.e., perceived content validity and transfer design, particularly in the context of academics at universities, even though many studies have been conducted on training transfer, particularly on trainee characteristics and the workplace. Additionally, many studies on training transfer, particularly in the corporate or non-educational sectors, concentrated on learner characteristics and work environment (e.g., Na-Nan & Sanamthong, 2019; Martin et al., 2019; Arasanmi, 2019). Therefore, the research questions of this study are:

1. Do significant relationships exist between perceived content validity, transfer design and training transfer of academics? and
2. Do perceived content validity and transfer design significantly influence training transfer of academics?

Following that, the objectives of this research are

1. To investigate the relationships between perceived content validity, transfer design and training transfer of academics; and
2. To investigate the influence of perceived content validity and transfer design on training transfer of academics.

Conceptualizing Training Transfer

Researchers have categorised training transfer into four basic categories: positive, negative, near, far, and somewhere in between. Positive transfer, as defined by Leberman et al (2006), happens when trainees apply the knowledge they have acquired to their workplace. On the other hand, negative transfer occurs when students fail to demonstrate improvement in their job performance after a training session is over. Close transfer, according to Sofo (2007), is the capacity to replicate the knowledge, skills, and attitudes learned during a training programme in an environment that is remarkably like the one from which they were gained. On the other hand, far transfer happens when knowledge, abilities, and attitudes acquired during a training programme are employed in a new professional setting.

The transfer process model by Baldwin and Ford (1988) was used to support the study's framework. According to this model, three important variables—trainee characteristics, training design, and work environment—have an impact on how well training is transferred. Then, in their training transfer research, additional academics adopt and broadly accept this hypothesis (Holton et al., 2000; Velada et al., 2007; Bhatti & Kaur, 2010; Renta-Davids et al., 2014; Ng & Ahmad, 2018).

Many different trainee qualities are assumed to affect training transfer, according to (Baldwin and Ford, 1988). Prior studies have demonstrated that the trainee's ability to participate in the initial stages of training affects the training transfer. However, researchers have extensively examined trainee attributes, which were found to have an impact on training

transfer (Colquitt et al., 2000; Holton, 2005). Additionally, a substantial correlation between trainee attributes and training transfer was discovered (Ng & Ahmad, 2018). However, experts concurred that a significant amount of trainee characteristics have been examined in training-related research (Colquitt et al., 2000; Holton, 2005).

The likelihood of training transfer is increased, per the training literature, by considering goal setting, self-management (e.g., Tziner et al., 1991), instructional techniques, and learning principles (e.g., Alvarez et al., 2004) by the training provider. (Velada et al., 2007). According to Holton et al (2000), transfer design, a component of training design, relates to how well training has been planned and delivered to enable trainees to apply what they have learned to their current occupations. It is suggested that one of the components of transfer design is how closely training directives resemble work needs (Holton et al., 2000).

When trainees believe that the training programme is created and delivered in a way that maximises their capacity to apply the training to their jobs, training is moved from training context to training content (Holton, 2005; Velada et al., 2007). The training design, in accordance with Kasim and Ali (2011); Salahuddin eta l (2020), accounts for 65% of training transfer. As a result, it is the most likely and important aspect of training transfer that the researcher can influence and interfere in since training design intervention is essential for ensuring that training designs are appropriately tailored to individual trainees and research contexts. However, since earlier research tended to concentrate on the correlational relationship between training design and training transfer, intervention in training design was rarely made.

Research on training transfer has extensively examined work environment factor, and academics have discovered that it has a substantial impact on training transfer (e.g., Velada et al., 2007; Ertmer & Newby, 2013; Ng & Ahmad, 2018). As the work environment construct substantially influences training transfer, Blume et al (2019) emphasised the significance of the climate for training transfer and the culture of continuous learning. On the other hand, Ng and Ahmad (2018) highlighted the impact of peer and supervisor support as a work environment component on the transfer of training. However, the literature revealed that there have been several studies on the workplace environment in studies pertaining to training (e.g., Baldwin et al., 2009; Blume et al., 2010; Wei Tian et al., 2016; Ng & Ahmad, 2018).

Theorizing Perceived Content Validity and Transfer Design with Training Transfer

The methodical approach of training design increases the likelihood of training transfer (Noe, 2017). It is stated that training is frequently not created to complement trainees' work context, preventing them from applying the KSA they acquired during training to their workplace environment (Holton, 2005). In relation to training design, Noe (2017) outlines three theories: 1) The theory of identical elements; 2) the principle theory or theory of stimulus generalisation; and 3) the cognitive theory. Noe (2017) went on to say that it makes sense to incorporate and make use of the components of the three theories when building training programmes.

The identical elements theory contends that training transfer happens when the KSA acquired are the same as the trainee's job scope and the training material is comparable to the work done at the trainee's place of employment. In other words, when training materials, tools, equipment, and surroundings are like those used in work, training transfer is maximised (Kim & Lee, 2001; Noe, 2017). This idea supports close transfer, which deals with a transfer environment that is comparable to the training setting (Kim & Lee, 2001; Tiruneh et al., 2018). Baldwin and Ford (1988) also make the argument that training transfer is increased when training content and job situation are similar.

The second training design theory is the stimulus generalisation or principle theory that suggests training programmes should focus on the general principle, which is crucial for skill acquisition in such a way that trainees are able to apply the skill acquired in workplace problem solving (Goldstein & Ford, 2002; Sala et al., 2019). According to Noe (2017), the stimulus generalisation theory or principle theory supports far transfer as the general principle applied in work situations that are different from training content. Tiruneh et al (2018) argued that taking into consideration the principle theory, trainees should be able to learn concepts and principles in order to engage in dissimilar situations they might face outside of the training programme.

Noe (2017) indicated that the third theory, which is the cognitive theory, explains that the possibility of transfer depends on trainees' capability to retrieve learned information after providing them with meaningful material as these factors will allow a linkage between what trainees encounter in their work setting with the newly acquired information. The cognitive theory suggests two instructional strategies that may encourage learners to engage in potential application of training content to work environs: 1) facilitate trainees in identifying work issues and discuss potential application of training content to solve the issues; and 2) assign relevant application of workplace problems, in which trainees might be able to apply training content to solve the problems (Noe, 2017). Table 2.1 below summarises the highlights of each theory along with their underlying conditions:

Table 1
Training Design Theories

Theory	Focus	Conditions	Type of Transfer
Identical Elements Theory	Training and work environment are identical.	Work setting is predictable and stable.	Near
Stimulus Generalisation (Principle Theory)	General principles are applicable to many different work situations.	Work setting is volatile and highly variable.	Far
Cognitive Theory	Meaningful material and coding schemes enhance storage and recall of training.	All types of training and environment.	Near and far

(Source: Noe, 2017, p. 171)

According to scholars, training design, which makes up 65 percent of the variable, is one of the most crucial factors affecting training transfer (Kasim & Ali, 2011). The two components that make up the training design construct are perceived content validity and transfer design. According to researchers, perceived content validity, or how closely training courses are connected to trainees' workplaces, is a crucial aspect of training transfer (Renta-Davids et al., 2014; Nafukho et al., 2017). When trainees believe that the training programme was created and delivered in a way that maximises their capacity to apply the training to their professions, training is transferred from training context to training content (Holton, 2005; Velada et al., 2007).

Existing research has demonstrated that training transfer is highly influenced by transfer design, another aspect of training design (Velada et al., 2007). The degree to which training has been planned and delivered in a way that gives learners the opportunity to apply what they have learned to their professions is known as transfer design (Holton et al., 2000). Thus, it is hypothesized that:

H1: Perceived content validity is significantly related to training transfer of academics.

H2: Transfer design significantly influences training transfer of academics.

H3: Perceived content validity significantly influences training transfer of academics.

H4: Transfer design significantly influences training transfer of academics.

Research Framework

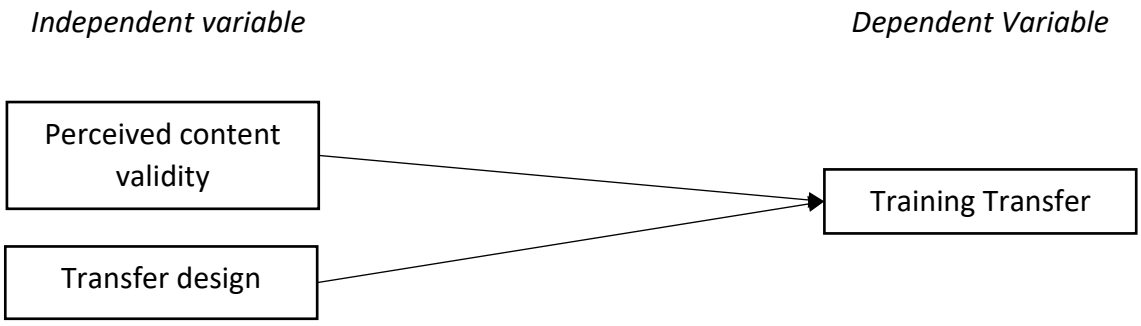

Figure 1. Research framework

Methodology

A public research university in Malaysia's academic staffs participated in this early investigation. The university's Human Resource Development (HRD) unit previously hosted a training and development programme for the academics. The formula n = 50+8k, where k is the number of independent variables (Green, 1991), was used to determine the minimum sample size needed for two predictors (perceived content validity and transfer design), generating a total of 66 responses. In total, 100 responses were collected, which is more than the required minimum sample size for this study using a simple random sampling procedure. The demographic breakdown of the respondents is shown in Table 2.

According to Table 1, there are more female respondents (52.00%) than male respondents (48.00%). Most of them (58.00%) are between the ages of 40 and 49, with 26.0% of them being between the ages of 30 and 39 and 50 to 59. (16.00%). Additionally, most respondents have worked at the university between 11-20 years (54.00%), followed by 1–10 years (35.00%), 21–30 years (10.00%), 31–40 years (31.00%), and 31-40 years (1.00%). Most respondents occupy the position of Head of Department (34.00%), followed by the Deputy Dean (32.00%), Subject Coordinator (12.00%), Senior Lecturer (13.00%), and Dean (9.00%).

Table 2
Demographic profile of the respondents (n= 100)

Variables	Freq.	Percentage	Mean (S.D)
Gender			
Male	48	48.00	
Female	52	52.00	
Age (years)			43.20 (5.62)
30-39	26	26.00	
40-49	58	58.00	
50-59	16	16.00	
Duration of Service (years)			13.60 (6.57)
1-10	35	35.00	
11-20	54	54.00	
21-30	10	10.00	
31-40	1	1.00	
Position			
Dean	9	9.00	
Deputy Dean	32	32.00	
Head of Department	34	34.00	
Subject Coordinator	12	12.00	
Senior Lecturer	13	13.00	

Instrument

Utilizing instrument created by Facteau et al., training transfer was evaluated 1995. Nine items on a five-point Likert scale make up the instrument. An example of this instrument's item is “I am able to transfer the skills learned in training courses back to my actual job.” The Learning Transfer Systems Inventory (LTSI) – a five-point Likert scale instrument developed by Holton et al (2000) was used to assess perceived content validity and transfer design. Sample items and Cronbach’s alpha coefficients of the instrument are as follows:

- **Perceived content validity:** A sample item of this instrument is "What is taught in training closely matches my job requirements." The Cronbach's alpha for this instrument from the literature is .84.

- **Transfer design:** A sample item of this instrument is "The activities and exercises the trainers used helped me know how to apply my learning on the job." The Cronbach's alpha from the literature is .85.

Findings

Correlation between perceived content validity, transfer design and training transfer

The correlation matrix between the variables employed in this investigation is shown in Table 4. Perceived content validity and transfer design can predictably influence training transfer because both variables were both found to be related with training transfer. Perceived content validity (r = .241, p = .016) exhibits the highest correlation coefficient followed by transfer design (r = .228, p = .023). Thus, H1 and H2 are supported.

Table 4
Correlation matrix (n = 100)

Variables		Training transfer	Perceived content validity	Transfer design
Training transfer	r (p)	1	.241* (.016)	.228* (.023)
Perceived content validity	r (p)		1	.674* (.000)
Transfer design	r (p)			1

*Correlation is significant at .05 level of significance.

Influence of perceived content validity and transfer design on training transfer

Table 5 indicates that both independent variables: perceived content validity (β = .160, p = .233) and transfer design (β = .120, p = .367) do not significantly influence training transfer. Thus, H3 and H4 are not supported. Results of the hypotheses are summarized in Table 6.

Table 5
Results of multiple linear regression (n = 100)

Variables	**B**	**SE (B)**	**β**	**r**	**p**
Training transfer (Constant)	2.890	.482		6.001	.000
Perceived content validity	.168	.140	.160	1.201	.233
Transfer design	.113	.125	.120	.906	.367

Note: F = 3.420; Sig. F = .037; R = .395; R^2 = .066; Adjusted R^2 = .047; Level of significance < .05

Table 6
Summary of hypotheses results

Hypothesis	**Result**
H1: Perceived content validity is significantly related to training transfer of academics.	Supported
H2: Transfer design is significantly related to training transfer of academics.	Supported
H3: Perceived content validity significantly influences training transfer of academics.	Unsupported
H4: Transfer design significantly influences training transfer of academics.	Unsupported

Conclusions and Recommendations

This study sheds empirically proven insights on the significant, positive relationships between training design factors i.e., perceived content validity and transfer design, with training transfer. This indicates that both variables hold a predictive influence on training transfer. However, empirical evidence of this study also shows that there is no significant influence of perceived content validity and transfer design on training transfer of the academics working in a public, research university in Malaysia. The regression results contradict with the training and development studies involving other contexts which depicts significant influence of training design factors on training transfer. Indirectly, the result of this study portrays the potential incompatibility of the training attended by the academics with their actual work contexts. Hence, perceived content validity and transfer design of the training do not influence academics' training transfer – the application of the training to their work tasks.

This study contributes to Human Resource Development (HRD) body of knowledge, especially in training and development by providing empirical evidence that proved the significant relationships between perceived content validity and transfer design with training transfer. This gives an emphasis that both independent variables hold potential predictive influence on training transfer. However, since this study found that perceived content validity and transfer design do not influence training transfer, further study is warranted to investigate the conditions under which they do. Nevertheless, this study is based on preliminary findings and further data is to be collected in the future.

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