Impact of Work Environment on Learning Transfer of Skills

Faizal, A. N. Y.[1]*, Saiful, H. M.[1], Bekri, R.[1], Jamil, A. B.[1], Amiruddin, M. H.[1], Ruhizan, M. Y.[2] and Arasinah, K[3]

[1]*Department of Engineering Education, Faculty of Technical and Vocational Education, Tun Hussein Onn Universiti, 86400 Parit Raja, Batu Pahat, Johor, Malaysia*
[2]*Faculty of Education, The National University of Malaysia, 46300 Bangi, Selangor, Malaysia*
[3]*Department of Family and Consumer Science, Faculty of Technical and Vocational Education, Sultan Idris Education University, 35900 Tanjong Malim, Perak, Malaysia*

ABSTRACT

Skills and job mismatch issues have become prevalent in the field of Technical and Vocational Education Training (TVET). These issues are associated with problems encountered in learning transfer, which hinder the application of skills and knowledge learnt in training institutes in the workplace. The findings of previous studies showed that less than 15 to 20% of the knowledge and skills acquired in training institutes can be transferred to the workplace. This contributes to loss of funds invested in training programmes. Concerns over the issue of mismatch between training and industry demand led to this study, which was conducted to identify elements of the work environment that are needed to strengthen learning transfer of skills learnt in training to the workplace. This study used a qualitative exploratory case study. Qualitative data were collected from trainers, employers, NOSS panel, trainees and former trainees through face-to-face interviews and focus group discussion. Qualitative findings found that work environment factors that contributed to the transfer of learning mainly involved learning skills training in Malaysia. The findings of this data may have implications for practitioners in the delivery of skills training in order to shape a skilled workforce to help create a high-income economy.

INTRODUCTION

Skills mismatch issues among skills trainers still haunt graduates and employers. Statistics and research on job mismatch conducted in training institutions and by employers show

that skills mismatch is very much an issue today (Jabatan Pembangunan Kemahiran, 2011; Jabatan Tenaga Manusia, 2008, 2009, 2010). This raises questions about the suitability of the skills training system based on the National Occupational Skill Standard (NOSS) as NOSS is used in many training institutions in Malaysia. The effectiveness of the NOSS training system is widely disputed as many graduates of training institutions that use the system cannot get jobs (Jabatan Pembangunan Kemahiran, 2011). This is also supported by the Jabatan Tenaga Manusia (2009), which found that there was dissatisfaction among employers with the results of the programme, which was attended by their employees, due to the employees' difficulty in applying what they learnt at work (Jørgensen, 2011; Nielsen, 2009).

There are various reasons for skills mismatch. One is that trainees who participated in the programme are not able to carry out their duties at work properly and efficiently (Nur, Ruhizan, & Bekri, 2015) because they do not have adequate skills, knowledge and behaviour (Ahmad, Wan Ahmad, Kasa, Gessler, & Spöttll, 2010). This was also supported by Pang, Yunos and Spottl (2009), who found that transfer of learning is difficult in the NOSS training system because trainees could not match the quality of work required by their employers. However, this cannot be proved conclusively because there are no specific studies on transfer of learning related to work environment, in particular for a NOSS system. Therefore, research into transfer of learning acquired under the NOSS training system to the workplace is urgently needed.

Learning Transfer

The issue of transfer of learning is no longer new as problems and concerns related to learning transfer are increasing (Taylor, Ayala, & Johnson, 2009). The main issue of learning transfer focusses on how knowledge, skills and attitudes can be applied or fail to be applied in new situations. However, many studies have only identified and measured factors affecting the transfer of learning in a particular environment (Baldwin, Ford, & Blume, 2009; Taylor et al., 2009). This means that learning transfer still needs to be explored to ensure that it is effective applied in different environmenst.

This study explores environmental factors that contribute to effective learning transfer, particularly involving skills training, especially the NOSS-based training system and work environments in Malaysia. Baldwin and Ford (1988) showed that transfer of learning factors varies with each environment. Therefore, a specific model for each environment is needed.

A literature review found that the work environment affects the transfer of learning (Baldwin & Ford, 1988; Burke & Hutchins, 2007; Donovan & Darcy, 2011; Kirwan, & Birchall, 2006; Leimbach, 2010; Pham, Segers, & Gijselaers, 2010; Rodríguez, & Gregory, 2005). According to Grossman and Salas (2011), environmental factors help determine whether trainees demonstrate learnt behaviour once they return to the

work environment. Lim and Morris (2006) stated that work environment is a factor that obstructs, reduces and promotes the transfer of learning. Therefore, it is up to the trainees whether they use the opportunity provided by their work environment to enhance their work performance or not. If they do not fully utilise such opportunity, they cannot transfer what they have learnt at the training.

Lim and Morris (2006) divided the work environment into two related factors, working system and people. Various factors can be attributed to a working system, but Lim and Morris' findings (2006) revealed that opportunity to use knowledge and skills is the factor emphasised in most studies. The people factor related to supervisors, who are critical in ensuring the success of learning transfer (Baldwin & Ford, 1988; Lim & Morris, 2006). Velada, Caetano, Michel, Lyons and Kavanagh (2007) explained in their study that two factors often emphasised in the work environment are organisational culture and climate. However, some indicators are associated with work environment, such as performance feedback, peer support, supervisor support, supervisor and supervisor sanctions (Baldwin & Ford, 1988; Holton, Bates, & Ruona, 2000; Tracey, Tannenbaum, & Kavanagh, 1995). To sum up, the constructs within the work environment include supervisor support, peer support, opportunity to use training provided and the negative or positive response of trainees when they return to the workplace i.e. whether or not they use the training they received.

METHODOLOGY

This case study used the qualitative design, triangulated by methods and resources. This study was triangulated by a method that involved: 1) face-to-face semi-structured interviews with the instructor, the NOSS panel, employers and trainees who are currently employed; 2) focus group discussion with ex-trainees who have work experience; and 3) observation of the institute and workplace environment. The sources for triangulation were selected by sample selection from a variety of organisations and positions. Through this method, the researchers were able to share their experience and were thus able to explore and understand the phenomenon of research by immersing themselves deeply into what is interpreted through conversations and expressions of feelings.

The thematic analysis method was used to analyse the interview data collected. The thematic analysis is a method of identifying, analysing and reporting patterns (themes) in the qualitative data (Braun & Clarke, 2006). This study refers to the discovery and emergence of themes derived from the results of the interview.

RESULTS

Based on the thematic analysis discussed above, two types of data were used, face-to-face interviews and focus group discussions data. Data were analysed using the NVIVO software version 8.0. In total there were five main themes (Yasin et al., 2014), and 20 sub-themes issued by theory, model

and new findings from the interviews conducted. Among the sub-themes that represented the theme of work environment were positive personal outcomes, negative personal outcome, peer support, supervisor or instructor sanctions and supervisor support supervisors.

Negative-personal outcomes refer to the negative result of personal actions taken by trainees that complicate the transfer of learning. This contributes to the possibility that there will be no improvement when new skills are used. In this study negative-personal outcomes that emerged from the interviews were that the trainees felt there was less communication in the new environment and they were bored with and felt awkward in the new environment.

Positive-personal outcomes are the result of actions taken by trainees that provide a positive impact on work. Among these outcomes are effectiveness of work (Holton, 1996), increased personal satisfaction, increased productivity (Holton, 1996) and able to work independently and follow instructions. Effectiveness refers to the positive effect of applying the learning outcomes at the best level possible. Able to work independently refers to the impact received by the trainees if they were able to apply the lessons learnt in the workplace.

Peer support includes the extent to which peers recognise each other and implement opportunities to use the skills and knowledge learnt in training, promote the use of new skills, show patience in

the face of problems associated with the use of new skills and show appreciation for the use of new skills. Under the sub-theme of peer support, the codes related to showing patience in the face of difficulties in using the new skills (Xiao, 1996) include rewarding the use of new skills (Holton, 1996), encouraging the use of new skills (Bates et al., 2000; Holton, 1996) and helping peers (Holton, 1996).

Supervisor support is defined as the extent to which the supervisor or employer supports and strengthens the use of learning outcomes in the workplace (Holton et al., 2000). In the context of this study, the sub-theme referred to the involvement of employers or instructors in helping the trainees to boost the morale of trainees either internally or externally while helping them use and improve learning outcomes more effectively. Among the examples of support provided were explaining expectations of performance after training, identifying opportunities to use new skills and knowledge, setting realistic goals based on the training, working with the trainees on problems encountered during the application of new skills and providing feedback when trainees successfully apply new abilities.

Supervisor sanctions include the extent to which employers or educators oppose the use of new skills and knowledge and the use of techniques that are different from what was taught in training. Sub-themes in this category include negative feedback by employers (Burke & Baldwin,

1999) and receiving no or little help from employers and instructors (Holton et al., 2000). Negative feedback from supervisors and instructors refers to criticism of the work process and equipment that does not suit the needs of the industry as well as insufficient feedback when trainees successfully apply learning in the workplace. By employers and instructors not helping trainees it is meant that employer and instructors do not help trainees to identify opportunities where they may use newly learnt skills and knowledge.

DISCUSSION AND CONCLUSION

The study found that the work environment influenced and contributed to the transfer of learning (Baldwin & Ford, 1988; Burke & Hutchins, 2007; Kirwan & Birchall, 2006; Leimbach, 2010; Pham et al., 2010; Donovan & Darcy, 2011; Grossman & Salas, 2011). The work environment can enhance or constrain the use of trainees' learning outcomes acquired in training through existing activities. Using these environmental factors through these elements can improve performance and further facilitate the transfer of learning (Baldwin & Ford, 1988; Tracey et al., 1995; Holton et al., 2000; Lim & Morris, 2006).

Instructors, supervisors, employers and training institutions must improve the transfer of learning skills through the work environment. One factor related to the work environment is the reward system; installing a proper reward system for successful use of new skills would greatly improve the transfer of learning skills among trainees. In addition, effective communication skills are essential to avoid miscommunication among trainers and support co-workers as well as to improve teamwork (Jabatan Pembangunan Kemahiran, 2011; Omar, Abdullah, Sail, & Ismail, 2010; Awang, Saif, Alavi, & Ismail, 2010; Mustapha & Rahmat, 2013). Effective communication allows supervisors or instructors to provide feedback on work performance, to initiate positive discussion, to provide relevant explanation through clear direction and to deliver learning outcomes. Supervisors or instructors also need to emphasise guidance to ensure that the trainees can apply their learning outcomes in the workplace (Azman, Loh, Abdullah, & Francis, 2010; Burke & Baldwin, 1999; Hutchins, 2009; Lim & Johnson, 2002; Hua, Ahmad, & Ismail, 2011; Nijman, Nijhof, Wognum, & Veldkamp, 2006; Ahmad et al., 2010).

Table 1 summarises the importance of the work environment factors. Improving these work environment factors is an important step in ensuring all trainees use inputs from the environment to improve work performance. This is supported by Ahmad et al. (2010), who stated that work environment factors greatly affect the effectiveness of the transfer of learning in TVET.

Table 1
Summary of discussion on work environment

Theme/sub-theme	Benefit/Significance	Emphasis
Work Environment		
• Negative-personal outcome	- Unsuccessful, not motivated, do not achieve the desired performance, tend to violate procedure	- Core abilities evaluation to define snd strengthen communication skill, generate interest
• Positive-personal outcome	- Influences individual performance with easy and quick application of learning outcomes in the workplace	- Must be independent and act in accordance with instructions; Supervisory aspect emphasised
• Peer support	- Trust and support of friends in the process of work, sharing ideas; Respect and encourage one another	- Keep good relations/positive communication among peers, the overall team, to create support.
• Supervisor sanctions	- Trainees are humble and unsure of themselves as a result of criticism of supervisors, decreased performance and motivation	- Should be avoided (there is no instructor assistance)
• Supervisor suport	- Related to the transfer of learning, strengthen the use of learning outcomes, understanding the work process and the level of performance. The level of confidence and trust	- Close relationship, supervisors encourage trainees to attend the training programme, give them opportunity to apply training acquired, keep communication channels open, provide guidance and give clear instructions

REFERENCES

Ahmad, A., Ahmad, W., Rashid, W. M., Kasa, Z., Gessler, M., & Spootle, G. (2010). Effectiveness of learning transfer in the National Dual Training System (NDTS) in Malaysia.

Ahmad, W. R. W. M., Jamaluddin, H., Mohammad, B., Saemi, M. M. N., & Ahmad. A. (2010). Faktor persekitaran kerja dan kebolehan pelatih yang mempengaruhi keberkesanan Sistem Latihan Dual Negara (SLDN).

Awang, A. H., Sail, R. M., Alavi, K., & Ismail, I. A. (2010). *Imej dan Kesetiaan Pelajar Terhadap Pendidikan Teknikal dan Latihan Vokasional*. Serdang: Universiti Putra Malaysia.

Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: A review and direction for future research. *Personnel Psychology, 41*(1), 63–105.

Baldwin, T. T., Ford, J. K., & Blume, B. D. (2009). Transfer of training 1988–2008: an updated review and agenda for future research. *International Review of Industrial and Organizational Psychology, 24*(1), 41-70.

A. Bates, R., Holton III, E. F., Seyler, D. L., & Carvalho, M. A. (2000). The role of interpersonal factors in the application of computer-based training in an industrial setting. *Human Resource Development International,* 3(1), 19-42.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101.

Burke, L. A., & Baldwin, T. T. (1999). Workforce training transfer: A study of the effect of relapse prevention training and transfer climate. *Human Resource Management, 38*(3), 227–241.

Burke, L. A., & Hutchins, H. M. (2007). Training transfer: An integrative literature review. *Human Resource Development Review, 6*(3), 263–296.

Donovan, P., & Darcy, D. P. (2011). Learning transfer: The views of practitioners in Ireland. *International Journal of Training and Development, 15*(2), 121–139.

Grossman, R., & Salas, E. (2011). The transfer of training: What really matters. *International Journal of Training and Development, 15*(2), 103–120.

Holton III, E. F. (1996). The flawed four: Level evaluation model. *Human Resource Development Quarterly, 7*(1), 5–21.

Holton, E. F., Bates, R. A., & Ruona, W. E. A. (2000). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly, 11*(4), 333–360.

Hua, N. K., Ahmad, R., & Ismail, A. (2011). The impact of the supervisor's role in training programmes on the transfer of training: A case study in four east Malaysian local governments. *Research and Practice in Human Resource Management, 19*(2), 1.

Hutchins, H. M. (2009). In the trainer's voice: A study of training transfer practices. *Performance Improvement Quarterly, 22*(1), 69–93.

Jabatan Pembangunan Kemahiran. (2011). Kajian terhadap kebolehkerjaan graduan persijilan kemahiran Malaysia di Institut Latihan Kemahiran Awam (ILKA). Kementerian Sumber Manusia.

Jabatan Tenaga Manusia. (2008). Laporan kaji selidik pengesanan graduan ILJTM sesi 2/2007 dan sesi 1/2008. Bahagian Perancangan dan Penyelidikan Kementerian Sumber Manusia.

Jabatan Tenaga Manusia. (2009). Laporan kaji selidik pengesanan graduan ILJTM sesi 2/2008 dan sesi 1/2009. Bahagian Perancangan dan Penyelidik Kementerian Sumber Manusia.

Jabatan Tenaga Manusia. (2010). Laporan kaji selidik pengesanan graduan ILJTM (Tracer study) tahun 2010. Bahagian Perancangan dan Penyelidikan Kementerian Sumber Manusia.

Jørgensen, C. H. (2011). Teachers learning in TVET: transfer, transition and transformation. *The Future of VET.*

Kirwan, C., & Birchall, D. (2006). Transfer of learning from management development programmes: Testing the Holton model. *International Journal of Training and Development, 10*(4), 252–268.

Leimbach, M. (2010). Learning transfer model: A research-driven approach to enhancing learning effectiveness. *Industrial and Commercial Training, 42*(2), 81–86.

Lim, D. H., & Johnson, S. D. (2002). Trainee perceptions of factors that influence learning transfer. *International Journal of Training and Development, 6*(1), 36–48.

Lim, D. H., & Morris, M. L. (2006). Influence of trainee characteristics, instructional satisfaction, and organizational climate on perceived learning and training transfer. *Human Resource Development Quarterly, 17*(1), 85–115.

Mustapha, R., & Rahmat, R. (2013). Integration of social skills and social values in the National Dual Training System (NDTS) in the Malaysian automotive sector: Employers' perspective. *TVET@Asia*, 1, 1–15.

Nielsen, K. (2009). A collaborative perspective on learning transfer. *Journal of Workplace Learning, 21*(1), 58–70.

Nijman, D. J. J. M., Nijhof, W. J., Wognum, A. A. M. I., & Veldkamp, B. P. (2006). Exploring differential effects of supervisor support on transfer of training. *Journal of European Industrial Training, 3*0(7), 529–549.

Nur, Y. F. A., Ruhizan, M. Y., & Bekri, R. M. (2015). Learning transfer in National Occupational Skill Standard (NOSS) system and workplace learning: How training design affects it. *Procedia-Social and Behavioral Sciences,* 174, 156–163.

Omar, Z., Abdullah, A. L. K., Sail, R. M., & Ismail. I. A. (2010). Laluan kejayaan kerjaya di kalangan "late bloomers" dari bidang teknikal dan latihan vokasional. Serdang: Universiti Putra Malaysia.

Pang, C. L., & Jailani Mohd Yunos & Spottl, G. (2009). Comparative Review of the National Occupational Skills Standard (Noss)-Based Training System and the National Dual Training System (Ndts) in Malaysia: Issues and Themes. *Malaysia Labour Review, 3*(1), 110-138.

Pham, N. T. P., Segers, M. S. R., & Gijselaers, W. H. (2010). Understanding training transfer effects from a motivational perspective: A test of MBA programs. *Business Leadership Review,* 7, 1–25.

Rodríguez, C. M., & Gregory, S. (2005). Qualitative study of transfer of training of student employees in a service industry. J*ournal of Hospitality and Tourism Research, 29*(1), 42–66.

Taylor, M. C., Ayala, G. E., & Johnson, C. P. (2009). Understanding learning transfer in employment preparation programmes for adults with low skills. *Journal of Vocational Education and Training, 61*(1), 1–13.

Tracey, J. B., Tannenbaum, S. I., & Kavanagh, M. J. (1995). Applying trained skills on the job: The importance of the work environment. *Journal of Applied Psychology, 80*(2), 239.

Velada, R., Caetano, A., Michel, J. W., Lyons, B. D., & Kavanagh, M. J. (2007). The effects of training design, individual characteristics and work environment on transfer of training. *International Journal of Training and Development, 11*(4), 282–294.

Xiao, J. (1996). The relationship between organizational factors and the transfer of training in the electronics industry in Shenzhen, China. *Human Resource Development Quarterly, 7*(1), 55–73.

Yasin, R. M., Nur, Y. F. A., Ridzwan, C. R., Bekri, R. M., Arif, A. R. A., Mahazir, I. I., & Ashikin, H. T. (2014). Learning transfer at skill institutions' and workplace environment: A conceptual framework. *Asian Social Science, 10*(1), 179.