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What Motivate End-Users To Transfer Gained Knowledge From Enterprise Systems Training?

Chris N. Arasanmi
Auckland University of Technology, chris.arasanmi@aut.ac.nz

William Y.C. Wang
Auckland University of Technology, william.wang@aut.ac.nz

Harminder Singh
Auckland University of Technology, hsingh@aut.ac.nz

Samuel Ekundayo
Auckland University of Technology, Samuel.ekundayo@aut.ac.nz

WHAT MOTIVATES END-USERS TO TRANSFER GAINED KNOWLEDGE FROM ENTERPRISE SYSTEMS TRAINING?
Research-in-Progress

Chris N. Arasanmi, Auckland University of Technology, chris.arasanmi@aut.ac.nz

William Y.C. Wang, Auckland University of Technology, william.wang@aut.ac.nz

Harminder Singh, Auckland University of Technology, hsingh@aut.ac.nz

Samuel Ekundayo, Auckland University of Technology, Samuel.ekundayo@aut.ac.nz

Abstract

Organisational motivations for adopting Enterprise Systems (ES) include the achievement of a competitive advantage in production and provision of better control on operations. In spite of its contributions to business successes, an estimated 50- 75% of ES projects failed to justify the enormous financial investment into the projects. Research has attributed ES failure to training-related factors. Suggesting the criticalness of training and education in Enterprise System success; nonetheless enterprise systems researchers have constantly ignored training potential on post adoption behaviours. Regardless of the importance of ES training, it is noted that users resist and hesitate to apply gained skills on the systems. The disproportionate use of learned skills results in low utilisation of the systems and partly ES failures. Post training behaviours are critical in the ES success; however knowledge on the determinants of transfer of skills and knowledge gained from enterprise systems training environment is scarce. This study proposes a model of motivational mechanism of effective use of skills and knowledge in Enterprise Systems.

Keywords: End-User, Transfer of Training, Enterprise Systems, System utilisation

1   INTRODUCTION

Organisations quest for competitive advantage has led to the embrace of Enterprise Systems for the past two decades. The impact of Enterprise Systems (ES) packages as a potent tool for efficiency in business information management has made the packages more attractive. Though ES is complex particularly, issues concerning its full appropriation, due to the inability of the users to understand systems capabilities and full utilisation of its features. This has resulted in users' resistant and hesitation in utilising the system. Importantly, users' understanding of the use of the system is crucial in the maximisation of the system, which is realisable with users, equipped with required skills. End-user training, "probably the most widely recognized critical success factor, because user understanding and buy-in is essential" (Umble, Haft, & Umble 2003), appears to be the important strategic path in this regard. The importance of training as a strategic tool in the teaching of new skills, knowledge and attitudes in the use of systems has been recognised by literature (Compeau & Higgins 1995). Over the years, the importance of training as a critical success factor of ES has taken a central position in ES studies (Garg 2010; Umble et al. 2003). Some studies have investigated training effectiveness by examining the training methods and motivational factors in learning environment (Amoako-Gyampah & Salam 2004; Gupta & Bostrom 2006). While enormous opinions converge on the importance of training on user's ability to use the system, there are opinions that users do not subsequently use gained skills on the system (Olfman & Bostrom 1991; Shayo & Olfman 1994). One of the concerns of the organisation is that such invested money, efforts and time on such training intervention were wasted on users who resist or under-utilise gained skills on the system. Learning will be considered to have taken place, when gained skills are accounted for on the job, this remains a challenge in the information system studies (Mahapatra & Lai 2005). For conceptual clarity, transfer of training is the effective use of learned skills on the job, while the non-use of skills (or use that is less than its full capabilities) is regarded as non-transfer of skills (Shayo & Olfman 1994). The reviewed literature indicates a dearth of research in post training behaviours in relations to transfer performance in information system (Jasperson, Carter & Zmud 2005; Mahapatra & Lai 2005).

The core aim of this study is to examine the motivational antecedents of skills transfer on the system as a measure of ES training effectiveness. In summary, our research objectives are interested in finding the association between (i) motivational predictors and post training system utilisation (ii) training motivation and ES utilisation. To our knowledge, no study has examined the motivational antecedents of skills transfer in relation to Enterprise Systems utilisation. The rest of this paper covered sections of the literature review, the proposed research model and hypotheses, research direction, implication of the study and the conclusion.

2   LITERATURE REVIEW

End-user training has been tagged a 'cornerstone' of organisational performance (Nordhaug 1989). It has also been recognised as a pervasive method of enhancing individual's performance in the workplace, especially in the communication of an enterprise goal to employees (Arthur, Bennett, Edens & Bell 2003; Gupta & Bostrom 2006). The effect of a complex and hypercompetitive business environment, influx and adoption of Enterprise Systems have posed a new challenge in human resources development in organisations, especially how human resources can be harnessed in the realisation of organisational goals. It is widely accepted that end-user training remains an effective strategic intervention required for updating employees' knowledge and skills (Rowold 2007).

The value attached to end-user training in Enterprise Systems is indicative of the huge financial investment into it by business organisations. Enterprise Systems (ES) unlike other information systems are commercial packages created for the management of business information for seamless operational efficiency. ES packages are modular arranged and integrated software that manages core business data and information across units and departmental functions of an organisation - data are processed seamlessly. Aside competitive advantage theory advanced for ES adoption, ES software packages enhances efficiency, production and cost reduction. It is also useful in business decisions making through a swift supply of needed data (Poston & Grabski 2001). ES modules were rooted in

the manufacturing and supply chain related businesses; and the MRP (Manufacturing Resources Planning) versions. However, advances in software technology have extended its application into other business component like Human Resources, Finance, Marketing, and Production. The complex nature of ES and the inability of the organisation in customising the packages limit their capacity in the provision of technical strategies to users on effective system optimisation (Amoako-Gyampah & Salam 2004; Ke, Wang & Wei 2008). To improve user's ability to utilise systems features, organisations commit enormous times, finances and efforts into ES training.

Enterprise System training provides useful skills for the systems interface and successful software application (Compeau & Higgins 1995). It involves the provision of multiple training modules with diverse functionalities of the adopted software (Marler, Linag & Dulebohn 2006). Training is a way of skill diffusion and a part of diffusion of innovation theories (Rogers 1983), that has majorly influenced the information technology adoption theories. Enterprise Systems training becomes more critical as various skills and knowledge required on the system and task proficiency are acquired by the end-user in this implementation phase. The key objectives of enterprise-wide technology software training programs are skills learning, and users' continue refine and generalisation of such skills outside of the formal training environment (Marler et al. 2006). A relationship between users' skills and use on the system signify enterprise –wide training effectiveness.

In recent years, many ES and information systems studies have mentioned the importance of end-user training as a critical success factor for ES implementation (Davenport 2000; Igbaria & Tan 1997; Kumar, Maheshwari & Kumar 2003). ES studies have also shown interest on the impact of training, including training typologies and designs on technology adoption (Gupta & Bostrom 2006), end-user satisfaction (Rajagopalan, York, Doane & Tanniru 2007) and technology acceptance (Bedard, Jackson, Ettredge & Johnstone 2003; Marler et al. 2006). Recently, the impact of multimedia, e-learning and web- based training on ES has emerged (Choi, Kim & Kim 2007; Piccoli, Ahmad & Ives 2001; Scott & Walczak 2009). The knowledge management perspective of ES implementation indicated that, knowledge barriers in the work processes as a result of the ES implementation are overcame by end-user training (Mendoza, Caroll & Stern 2008). In fact, it was emphasised that, organisations with huge investment in end-user training, more successfully overcame the assimilation barriers involved with the ES implementation.

The aggregated opinions from these findings affirmed the influence of effective training on the development of positive attitude and an update of required skills for continuous system utilisation. To a certain extent, effective system use is contingent upon the success of the user training (Choi, et al. 2007). The ubiquitous reports and key ideas in the information system literature lacked coverage of (i) post training application in enterprise systems, and (ii) what motivate users to utilise gained skills in enterprise systems, and hence the need to examine the determinants of post adoption training use, which appears to be crucial in system utilisation. Despite the fact that, the implementation of ES is complex, costly and important organisational change process, around 75% of enterprise systems projects are classified as failures (Garg 2010). The success of an innovation seems not to depend on the technological innovation itself, but largely on users' appropriation of the system, based on his knowledge and competencies (Garg 2010) made possible by in an extensive education and training. As a result, it is important to know and understand predictors that can influence effective ES utilisation as an enabler of Enterprise Systems training success.

2.1 Research Model and Hypotheses

Past studies suggest a positive relationship between attitude and motivation as possible indicators of training effectiveness and transfer performance (Klein, Noe & Wang 2006). Drawing from the Theory of Planned Behaviour (Ajzen 1991), we conceptualise self-efficacy, mastery orientation, motivation to learn, organisational and supervisor's supports as dimensions of perceived behavioural control, attitudes and subjective norms respectively, will influence post training behaviour of system utilisation. Firstly, the model tests for a direct link between the constructs and transfer performance (system utilisation). Secondly, we propose that, motivation to learn will mediate the relationship between mastery orientation, supervisor's support and Enterprise System utilisation. The research

model proposes interactive influences of motivational and organisational predictors in Enterprise Systems the transfer mechanism.
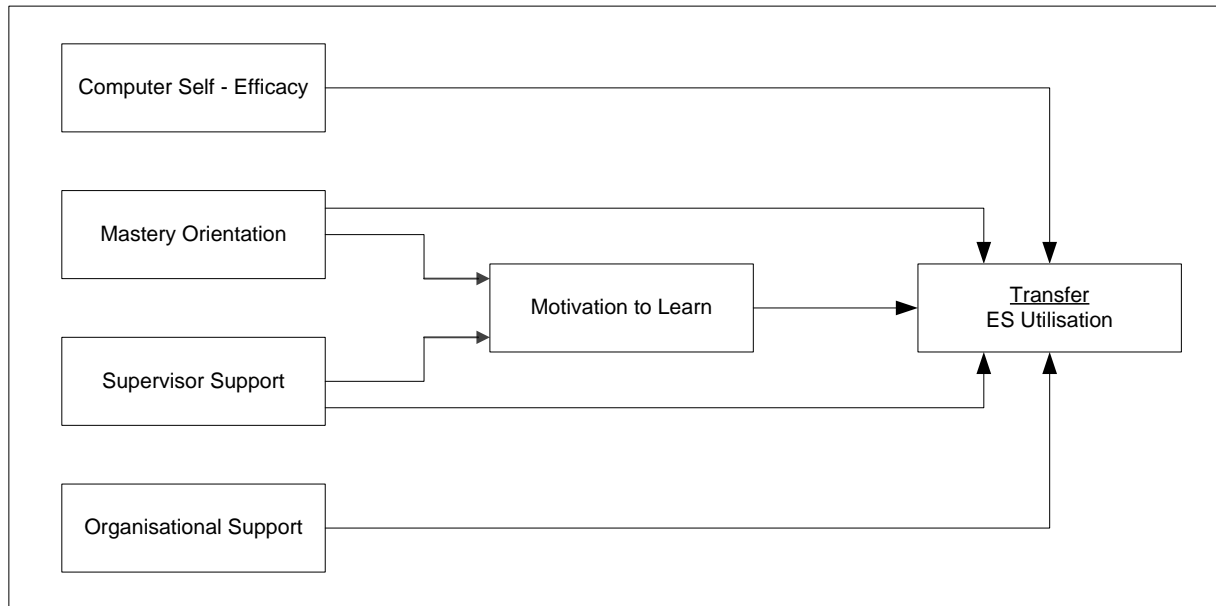

Figure 1.   Enterprise Systems Training Utilisation Model

Dependent variable: Transfer performance (Enterprise System Utilisation)

The dependent variable in this ongoing-study is the transfer of the gained skills on the system. Consistent with previous HRD/ training literature measures of post training performance (Ford, Smith, Weissbein & Gully 1998), we measure user's system utilisation as an indication of transfer. Systems utilisation is the amount of efforts expended by the user interacting with the information systems (Lee, Kim & Lee 1995). System utilisation represents the actual utilisation or usage of the system (Thomson, Higgins & Howell 1991), and how the system helps decision quality per unit of time. In other word, system utilisation entails a proactive appropriation and utilisation of the new technology. We operationalised utilisation in the context of task performance, and as a surrogate of post training transfer in ES environment in this study. The measure of system utilisation allows the tracking of how skills are used (applied) on the system.

2.1.1   Hypotheses

Self - efficacy

Compeau and Higgins (1995) define computer self-efficacy an individual's perception of his/her abilities to use computer in the accomplishment of a task. As a behavioural control, it has been found to influence training participation in different environment across disciplines including information systems (Webster & Martocchio 1995). In information and e-learning environment, computer self-efficacy and task efficacy has been found to positively relate with system usage (Garavan, Carbery, O'Malley & O'Donnell 2010; Igbaria & Iivari 1995). Compeau and Higgins (1995) found a significantly support for self- efficacy in shaping users' behaviours on computer usage. Empirical evidence has concluded that, the higher the computer self-efficacy, the more the computer usage and the lesser the anxiety associated with the use of the computer system. We therefore hypothesize that:

Hypothesis 1: Computer self-efficacy will be positively related to system utilisation.

Mastery orientation

Goal orientation indicates the goals pursued by individuals in a particular event or action (Dweck 1986). The two classes of goal orientations are: mastery and performance orientation. Mastery orientation refers to individual's quest for knowledge, development of new skills, understanding new tasks and successfully achieves a reference standard of mastery of the learning objectives (Ford et al. 1998). Mastery orientation has been linked with success in learning environment. Research indicates that, mastery oriented individual develop more self-efficacy (Gravill & Compeau 2003), in difficult task circumstances. Typically, it means, the more challenging a task becomes, the more it is perceived as an opportunity to build competence (Yi & Hwang 2003). In ES training environment, a mastery oriented individual will learn more and also transfer the gained skills on the system. Therefore we hypothesize that:

Hypothesis 2: Mastery orientation will be positively related to systems utilisation.

Organisational support

Organisational supports indicate a positive perception formed by users from organisational supporting activities in training context. Organisational support in information systems have been conceptualized in terms of assistance, help, feedback, encouragement and the provision of system manual and documentation (Scott 2005; Scott & Walczak 2009). Organisational support is important in information systems effectiveness, for instance, organisational support and encouragement results in extrinsic motivation to use technology (Scott & Walczak 2009). Scott (2005) examined the influence of training manual on users' capability to use systems, it was suggested that organisational capability to provide manual documentation enhances individual capacity to translate training into performance, and such should not neglected. Organisation provision of training manual as a source of support may be useful at the initial phase of system learning and use, but it is incongruous with medium and long - term use of the technology (Mendoza, Stern & Caroll 2010).

The importance of organisational support as motivational factor on user was emphasized by (Garofano & Salas 2005). Organisational support reinforces positive attitude development in the user in training environment, and in task performance. Igbaria and IIvari (1995) confirmed that organisational support significantly affect user self-efficacy, perceived usefulness and ease of use of technology. Scott and Walczak (2009) reported that, organisational support, in the form of extrinsic motivation, significantly affect user's computer self-efficacy. Consistent with previous study (Igbaria & Iivari 1995) and the submission that, lack of management commitment endangers the success of the system (Umble et al. 2003), we proposed a positive relationship between organisational support and user's post training utilisation of the system. Therefore, we hypothesised that:

Hypothesis 3: Organisational support will be positively related to system utilisation.

Supervisor support

Research on the influence of top-management and supervisor support and its multi-dimensional effects on users' acquisition and use of skills appear robust. The dimensional influences include reinforcement of positive attitude, intrinsic motivations, encouragement, feedbacks, and training previews (Tai 2006; Webster & Martocchio 1995). Also, the IS studies suggests that key personnel and managers that influence work environment are mostly likely to have a stronger impact on user's belief to use the system (Igbaria & Iivari 1995). Compeau and Higgins (1995) confirmed the influence of support operationalised as social factors in the use of technology. Social factors influence compliance with the expectation of others through the exertion of pressure from the reference group in the form of encouragement and persuasion. Empirical finding suggests a significant influence of social factor on perceived usefulness of the system (Thomson, Compeau & Higgins 2006). The evidence from non-IS studies were unequivocal on the influence of supervisor support on post training skills application (Facteau, Dobbins, Russell, Ladd & Kudisch 1995). Supervisor's activities like training previews (contents of training information or training framing) enhances post training reactions (Webster & Martocchio 1995; Tai 2006). The literature affirmed that, top management or supervisor's support enhances user's positive behaviours on the value of training and the use of acquired skills on the job. We therefore hypothesised that:

Hypothesis 4: Top-management support will be positively related to system utilisation.

Motivation to learn

Motivation to learn is the degree to which an employee desire to learn from a training program (Noe 1986). Empirical test of a direct and mediated relationship have been found to support this position (Garavan et al. 2010; Klein et al. 2006). User's high in motivation to learn will have a high tendency to use what he has gained in the training on the job. Based on the theoretical guide of this study, motivation to learn is an attitudinal variable; a positive attitude that could predict a transfer behaviour on the system. In predicting the motivational facilitators of post adoptive behaviour, we posit that pre-training motivation will affect transfer of learning on the system. We therefore hypothesise that:

Hypothesis 5a: Motivation to learn will be positively related to system utilisation.

One of the possible mechanisms through which predictors operate on skill transfer is motivation to learn (Chiaburu & Marinova 2005). Consistent with Klein, et al. (2006) findings that, it is in the course of the choices individuals make to engage in, attend to, and persist in learning activities that these factors (motivators) impact training outcomes. This study tests whether such mechanisms operate fully or partially in an ES training environment. We therefore hypothesised that,

Hypothesis 5b: The relationship between mastery orientation, supervisor support and system utilisation will be mediated by motivation to learn.

3   CURRENT RESEARCH DIRECTION

The parsimonious models of ES adoption are focused on technology's ease of use and perceived usefulness; disregarding human factor related issues. Training and transfer of skills represents training effectiveness on the job (Baldwin & Ford 1988; Kirkpatrick 1998; Mahapatra & Lai 2005). There appears a neglect of knowledge on post adoptive training behaviour in ES studies (Jasperson et al. 2005) We proposed a motivational mechanism of post training behaviour in the context of ES exploration. Specifically, it is been suggested that, the nomological net of computer self-efficacy, mastery orientation, organisational and supervisor's supports will facilitate skills utilisation on the system.

This research-in-progress will be carried out in a telecommunication organisation that recently adopted ES package. Telecommunication sectors are highly Information technology (I.T) driven. Moreover, the sector is characterised by aggressive competition, leading to a high increase in the acquisition and embrace of ES packages. This study will apply a multi-phased data collection approach. The first phase will involve the use of an online survey. The second phase of the data collection will be done through a face-to-face structured interview with end-users, managers and top experts in the field of Enterprise Systems training. The result of the interviews will be used to complement the data from the first phase. The Partial Least Square (PLS), analytic approach will be used to test the proposed hypothesised relationships. SEM is reliable in analysing latent variables like self-efficacy; it also takes care of the problem of factor indeterminacy.

4   RESEARCH CONTRIBUTIONS

The model recognises the problems associated with system implementation, and proposed a motivational mechanism to achieve effective system appropriation. The model suggests some guidelines, and practitioners and managerial implications.

First, the model contributes to ES training, in the following ways; it introduces the concept of transfer, by proposing a transfer mechanism for ES utilisation. It is suggested that, individual motivational factors and organisational factors are crucial determinants of skills transference on the systems. It proposes a managerial understanding of users' make-up in behavioural reinforcement of work behaviours.

Second, organisational supports in the form of helps, manuals, feedback and encouragement are crucial to users' adoption of an innovation, during and after the training, especially, in the early phase

of the implementation when mastery of required skills on the ES is still awkward. Managerial supports potentially reduce hesitation and resistance behaviours on the system.

Third, the trainers and the managers should enhance users' self-efficacy (computer and tasks) toward system utilisation. The training design should increased user's positive perception of ease-of-use of the system, and less computer anxiety.

Fourth, the model is strategic in tracking users' extent of system utilisation. The model allow the planning of objective metrics, such as; extent of use, time of use, time spent on task, number of completed tasks, and error rates. This strategy will enhance departmental supervisors and managers to monitor skills accountability and the systems feature exploration. This will also strengthen the feedback system between a user and his manager.

5 CONCLUSION

Enterprise systems are customised package that enhances efficiency in operations; it makes data processing and decision making support possible in organisation. It is however noted, system failure results from users' resistance to transfer (application of learned skills) their skills on the system. This paper proposes a model of motivational mechanism and facilitators of post adoption training transfer in Enterprise Systems. It is anticipated that this ongoing study will add to our understanding of transfer of skills as a motivational mechanism in post adoption behaviour among end-users in Enterprise Systems.

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