Asian Academy of Management Journal, Vol. 28, No. 2, 239–274, 2023

WHY COGNITIVE ABSORPTION IS NOT ENOUGH: THE ROLE OF KNOWLEDGE ABSORPTION CAPACITY AND TECHNOLOGICAL OPPORTUNITY FOR INDIVIDUAL LEARNING

Ahmad Adeel[1,2*], Samreen Batool[2], Daisy Mui Hung Kee[2], and Zain-ul-Abdeen Madni[2]

[1]Department of Business Education, The University of Chenab, 50700, Gujrat, Pakistan
[2]School of Management, Universiti Sains Malaysia, 11800 USM, Pulau Pinang, Malaysia

[*]Corresponding author: adeelleads@yahoo.com

Published online: 6 December 2023

To cite this article: Adeel, A., Batool, S., Kee, D. M. H, & Madni, Z. A. (2023). Why cognitive absorption is not enough: The role of knowledge absorption capacity and technological opportunity for individual learning. *Asian Academy of Management Journal*, *28*(2), 239–274. https://doi.org/10.21315/aamj2023.28.2.9

To link to this article: https://doi.org/10.21315/aamj2023.28.2.9

ABSTRACT

The purpose of this paper is to address the basic question why does high absorptive training programmes are not always beneficial for individual level learning? Thus, we seek to understand when and how cognitive absorption is beneficial for individual learning. The proposed model was tested using data obtained in a field study (N = 371) and in an experiment (N = 119). For field study, data was obtained at two points in time from three data sources (co-workers, subordinates, supervisors) working at a private commercial bank operating in Pakistan. For laboratory experiment, data was collected from the business students of a private sector university in Pakistan. The obtained data for both studies were analysed for random coefficient models with Mplus. Based on the motivation-ability-opportunity theory of behaviour, we proposed a model. It was found that cognitive absorption and highest individual learning was contingent upon the individual level knowledge absorption capacity. It was further found that training programmes with high cognitive absorption are likely to produce high levels of individual learning when the participants also have both high level of knowledge absorption capacity and technological opportunity. With this research, we inform practitioners that in these learner-focused trainings, personal characteristics of the participants and technology play vital role in determining effectiveness for high level of individual learning. The research findings will help practitioners understand what they need to add in training programmes for high level

individual learning experience. Doing so will bring best value in form of higher learning to the cost of trainings.

Keywords: cognitive absorption, knowledge absorption capacity, technological opportunity, individual learning, motivation-opportunity-ability

INTRODUCTION

Learning is the acquisition of specific knowledge and skills (Hoegl & Gemuenden, 2001; Olanipekun et al., 2020) develop individual capacity (Denison et al., 1996) for higher productivity of the organisations (Jiang & Li, 2008; Kaizer et al., 2020; Mpofu & Hlatywayo, 2015). Thereby, in our day and age, organisations are more dependent on learning (knowledge and skills) of employees because of the need for more knowledge intensive production, methods, and services (Vătămănescu et al., 2020), and increasing demand for new ways of learning through trainings. Thus, organisations are seeking ways to provide learning opportunities by adopting training programmes that offer high level involvement and engagement of the participants (Goasduff & Pettey, 2011; Kaizer et al., 2020; Kim et al., 2019; Lischewski et al., 2020; Magni et al., 2013). These training programmes enhances individual learning (Benbunan-Fich & Hiltz, 2003) by smoothening the process of transferring tacit and complex knowledge (Salas et al., 2009) for improving organisational performance (Jiang & Li, 2008). Therefore, researchers and practitioners have shown a strong interest in enhancing individual learning by designing new training programmes for total immersion of the participants (Kahwajy et al., 2005).

Individual cognitive absorption has been identified as a state of high engagement and involvement of individuals during training programmes (Guo & Ro, 2008). An intensely focused state occurs when individuals start enjoying themselves with flow of the activity while ignoring the track of time (Agarwal & Karahanna, 2000; Chang et al., 2019). Research has identified several benefits associated with cognitive absorption; from an individual point of view, cognitive absorption enhance learning, high motivation on tasks, high technology application usage, high involvement and engagement, improve focus predominantly on instrumental benefits of the task (Barnes et al., 2019; Chen & Chang, 2016; Masrek & Gaskin, 2016; Ozkara et al., 2017; Pallud, 2017), and from an institutional point of view, cognitive absorption help building customer trust, help adoption of information technology, and enhance organisational learning (Agarwal et al., 1997; Balakrishnan & Dwivedi, 2021).

In the list of positive outcomes of cognitive absorption, some researchers have stressed the benefits of individual cognitive absorption for individual learning (Magni et al., 2013; Salas et al., 2009; Salimon et al., 2021; Tharenou, 2001). Thereby, in many companies, high cognitive absorption is becoming a central element of trainings for personal development and individual learning (Balakrishnan & Dwivedi, 2021; Reychav & Wu, 2015; Salimon et al., 2021; Zambrano et al., 2019) and the relevance of the continuous lifelong learning through trainings is increasing. Yet, others have questioned this link, arguing that high cognitive absorption can be detrimental for the participants as it causes individuals to lose their focus on the actual activity, ignoring the contextual cues and concentrating more on the process rather on the actual activity they are performing (Hamilton et al., 2000; Meyer, 2003; Salas & Cannon-Bowers, 2000). Thus, the literature presents equivocal results, wherein high absorption is critical for effective training as it leverages high learning experience, while at the same time it entails individual learning problem; indicating the need for more empirical research to resolve these inconsistent relationships (Alketbi et al., 2021; DeLone & McLean, 2003). In light of these conflicting findings, we need to tackle this linkage by taking contingent perspective to deepen knowledge of cognitive absorption that drive individual learning in contemporary world. More specifically we seek to understand why does high absorptive training programmes are not always beneficial for individual level learning?

Based on the motivation-ability-opportunity theory of behaviour (Blumberg & Pringle, 1982), we provide a conceptual framework for both explaining and resolving the inconsistency of cognitive absorption and individual learning linkage. The core premise of this framework is that performance is a function of willingness, opportunity, and capacity (McCarthy & Milner, 2020). The highest level of employee performance can be achieved when willingness is integrated with opportunity and capacity (Yildiz et al., 2019). Thus, we specifically develop the argument, although, cognitive absorption helps individuals to engage in learning activity, the employees need technological opportunity to access knowledge resources and possess the capacity to absorb knowledge. We tested the hypothesised relationships in a field study and a laboratory experiment.

Our theoretical perspective and empirical findings offer some important implications for both literature and organisations. First, with this research we have tried to resolve the inconsistency found in the literature about the relationship between absorptive training programmes and individual learning by accentuating the importance of knowledge absorption capacity and technological opportunity. Second, when considering learning in organisations, the focus of researchers has mainly remained with team or organisation level learning (Bresman, 2010; Van de

Ven et al., 2017), individual learning has been relatively ignored (Parboteeah et al., 2015). Finally, technology is ubiquitous and has modified the ways we access knowledge and information (Dewett, 2003) for learning and problem solving (Oldham & Da Silva, 2015; Reychav & Wu, 2015), we identify knowledge absorption capacity and technological opportunity as key variables and we are likely to provide a comprehensive test of the interactive effects of knowledge absorption capacity and technological opportunity to integrate with cognitive absorption for higher levels of individual learning. The results of this research will also help practitioners understand what they need to add in training programmes for high level individual learning experience. Doing so will bring best value in form of higher learning to the cost of trainings.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Cognitive Absorption and Learning

Cognitive absorption is a state of engagement and involvement which individuals experience while performing an activity (Guo & Ro, 2008): deep cognitive involvement and intense focus (Agarwal & Karahanna, 2000) that leverages intrinsic motivation (Keys & Wolfe, 1990; Mathieu & Martineau, 1997; Tannenbaum & Yukl, 1992; Tharenou, 2001). This state of individuals helps them to learn more from the activity (Druskat & Kayes, 2000), learn more from the training (Tharenou, 2001), and generate more creative ideas at work (Seo et al., 2015) by leveraging intrinsic motivation during learning (Tharenou, 2001) and by enhancing their ability to process complex and diverse information (Ryan & Deci, 2000). Core to cognitive absorption is deep involvement, a state when individuals becomes deeply engaged and start seeing an activity with inherent needs, personal, and of keen interest (Zaichkowsky, 1985). Researchers argued that involvement in an activity is an arousal controlled by psychological states of an individual's cognitive and affective motivation (Park & Mittal, 1985) which ensure higher intentions to purchase online (Jiang et al., 2010).

The theory of cognitive absorption explains how people get involved in an activity that nothing else seems important to them; a state of consciousness that goes almost automatic, effortless, yet highly focused (Agarwal & Karahanna, 2000). Although, training can facilitate learning, deep involvement of the participants can bring the real benefits of training (Magni et al., 2013). Cognitive absorption positively affects learner's experience of learning, motivates them, encourages them to take risks, enhances their involvement in an activity, improves their attentiveness, and improves learning in training (Reychav & Wu, 2015). Consequently, there is

increased concentration, self-control, and enjoyment of individuals in an activity (Guo & Ro, 2008) which affects learning (Magni et al., 2013). Therefore, we expect that cognitive absorption will positively affect individual learning.

H1: There is a positive association between cognitive absorption and individual learning.

Interaction Between Cognitive Absorption and Knowledge Absorption Capacity

Knowledge absorption capacity is an ability of individuals to acquire and integrate new information for further use (Cohen & Levinthal, 1990; Garud & Kumaraswamy, 2005). Previous research on the topic has suggested that knowledge absorption capacity matters in the context of psychological states for learning and performance (Basaglia et al., 2010; Comeig et al., 2018). Although cognitive absorption provides employees with deep involvement in a learning activity, the impact of cognitive absorption on individual learning also depends on the participant's knowledge absorption capacity (Seo et al., 2015; Tseng et al., 2011). In fact, knowledge absorption capacity explains why cognitive absorption does not always work alone and exhibits different levels of individual learning.

We address knowledge absorption capacity by drawing on motivation-ability-opportunity framework which is increasingly incorporated into management research (Reinholt et al., 2011). According to this framework, performance in an activity can vary with respect to how motivated a person is, how capable a person is, and how much opportunity s/he receives. Absorption capacity has gained attention of the researches due to change in business environment form tangible to intangible assets such as knowledge, technology, and innovation (Addison, 2003; Casillas et al., 2015). A lot of work has been done previously to show the importance of knowledge and use of knowledge resources for individual and team effectiveness like group's transactive memory (Austin, 2003; Lewis, 2004), distributed knowledge pooling (Larson et al., 1996; Stewart & Stasser, 1995), member's specialised knowledge sharing (Bunderson, 2003), and integrating individual knowledge resources for performance (Gardner et al., 2012).

Individual absorption capacity defined as an ability of individual to acknowledge the value of new information and understand and apply it for a commercial purpose (Cohen & Levinthal, 1990). Ability to integrate new knowledge with previous knowledge base represents favourable conditions for the complex and unstructured tasks (Garud & Kumaraswamy, 2005; Wasko & Faraj, 2005) and can positively affect performance (Gold et al., 2001) indicating the more a person

has capacity to absorb knowledge, the more s/he will be able to get benefit of the situation. Knowledge absorption capacity is therefore often argued to lead to more knowledge absorption and application for commercial purposes, which in turn result in more positive behavioural outcomes. Therefore, we expect that knowledge absorption capacity when coupled with cognitive absorption will bring higher level of individual learning. This expectation is further supported by research showing that knowledge absorptive ability of individuals enhances extensiveness and diversity of their knowledge (Martin & Salomon, 2003; Yildiz et al., 2019) indicating involvement in knowledge exchange activity will provide better ground for learning but knowledge absorption capacity enhances chance that knowledge is absorbed, relate, and used for commercial purpose (Cohen & Levinthal, 1990).

H2: The positive association between cognitive absorption and individual learning is strengthened when the employee also possesses knowledge absorption capacity.

Interaction Between Cognitive Absorption, Knowledge Absorption Capacity, and Technological Opportunity

In line with the motivation-ability-opportunity framework (Blumberg & Pringle, 1982; McCarthy & Milner, 2020), we argue that none of the dimensions in the framework can ensure a high level of individual learning in isolation (Huang et al., 2020), and that low values of cognitive absorption, knowledge absorption capacity, or technological opportunity will lead to decreased levels of individual learning (Blumberg & Pringle, 1982). Thus, in addition to cognitive absorption and knowledge absorption capacity, individuals must also have technological opportunity if high levels of individual learning are to occur.

Technology provides the best opportunity for learning (Edmondson et al., 2003; Shen & Ho, 2020; Tang et al., 2020) and the successful learning outcome mainly depends on how much technology is embedded into learning activities (Moreno et al., 2017). However, among what COVID-19 has done to the world is speeding up the compulsory use of technology for learning (Kuhfeld et al., 2020). Researchers are confident that the use of technology in learning of individuals is set to stay beyond the COVID-19 era (Armin & Roslin, 2021; Pearson, 2020). In the same vein, researchers have found that students were more satisfied and their preference in learning aided by technology, beyond the era of COVID-19, was higher than traditional learning approaches (Almuraqab, 2020), however, the published work on exploring the role of technology usage for learning of the participants is still sparse (Daouk & Aldalaien, 2019; Thabet et al., 2021). When

individuals are high in cognitive absorption, their deep involvement in an activity is likely to multifaceted in the sense that they are so psychologically involved in the activity that they can ignore the track of time and other contextual factors (Agarwal & Karahanna, 2000; Magni et al., 2013). This requires not only that the individuals' adequately possess capacity to absorb knowledge from this flow of knowledge and information, but also that they have the technological opportunity to communicate, share, transfer, and collaborate with others for better understanding of the diverse knowledge and information possessed by others (Shen & Ho, 2020; Tang et al., 2020).

Due to technological opportunities (Bergdahl et al., 2020; Loderer et al., 2020), exposure to novel and diverse information contributes to learning and knowledge transfer (Gold et al., 2001). Thus, the extent that computational devices facilitate exposure to diverse and novel information, individual learning enhanced (Bergdahl et al., 2020; Loderer et al., 2020). Researchers argued that technology provides employees with access to direct and new information repositories and specialists (Turvey & Pachler, 2020). In addition to facilitating access to data and information of specialists, technology also enables and allows individuals to get connected to broad diverse non-specialists who might have different perspectives which may enhance the individual's understanding (Al-Taweel et al., 2021; Turvey & Pachler, 2020). In addition to exposure to diverse information, technology may also enhance engagement at work (Oldham & Da Silva, 2015; Virick et al., 2010) due to interaction and feedback of others (Ashford, 1986; Humphrey et al., 2007), freedom and discretion in selecting sources and flow of information (Dewett, 2003), flexible work arrangements (Gajendran & Harrison, 2007), and formal and informal collaborations (Oldham & Hackman, 2010).

In the light of the above, we argue that employees who are simultaneously high in knowledge absorption capacity for individual learning and technological opportunity to communicate, share, transfer, and collaborate with others are better equipped to learning more from the training programmes and demonstrate high levels of individual learning. We suspect that a scarcity of cognitive absorption limits individual learning, even when knowledge absorption capacity and technological opportunity to communicate, share, transfer, and collaborate with others are high. Thus, we are not expecting that high levels of knowledge absorption capacity and technological opportunity to substitute for low cognitive absorption. Accordingly, we predict a three-way interaction between cognitive absorption, knowledge absorption capacity, and technological opportunity.

H3: There is a three-way interaction between cognitive absorption, knowledge absorption capacity, and technological opportunity such that the level of individual learning is highest when all three dimensions are high.

Hypothesised relationships were tested in two studies. In Study 1, we tested H1 and H2 by examining the role of cognitive absorption as having a direct impact on individual learning while knowledge absorption capacity as having a moderating effect on the relationship between cognitive absorption and individual learning. In Study 2, the full theoretical model was tested as depicted in Figure 1.

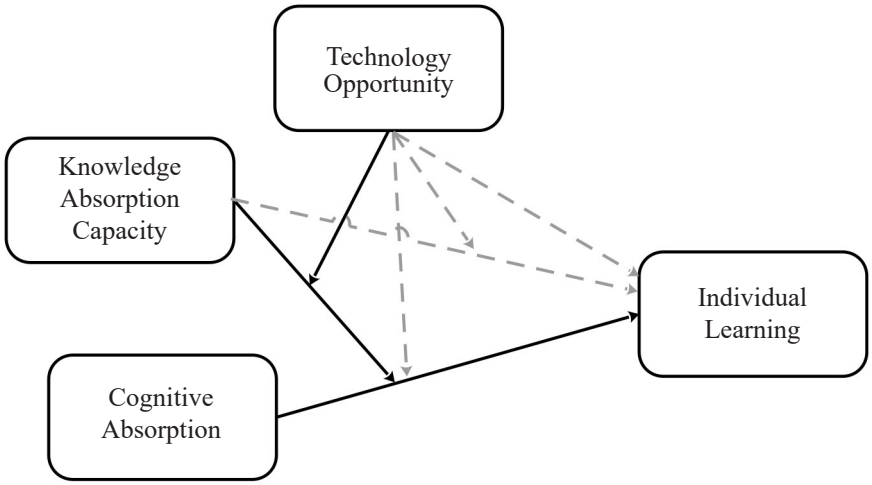

Figure 1. Research model

STUDY 1

Sample and Data Collection

For this study, using multisource data collection technique, we collected data from banking specialists working at a private commercial bank, with more than 10,000 employees, operating in the emerging economy of Pakistan. With a sufficient supply of technically educated individuals, the banking industry in Pakistan is growing and is encouraged by the government. Additionally, the banking industry also has a proper system of trainings for learning of their employees. These training programmes are offered for registration to the employees before start of every quarter and then registered employees are called for training as per their schedule. In these learning programmes, the objects are to improve the skills and knowledge

of employees both professionally and personally. These structured learnings are designed and managed by a proper training department and designed by trained professional trainers. Therefore, selecting banking industry for data collection is relevant to this research.

With a fixed research design, survey technique was used for collecting primary data with cross-sectional approach for this quantitative research. The purpose and implications of this field research were discussed with the company management and prior approval obtained for data collection from the employees. We then approached the training manager and the six training instructors (two regular instructors and four internal experts of their field) at their training centre and explained our study as related to deep involvement of participants and their individual learning outcomes. Their participation was voluntarily; it took nine working days to collect data from 413 regular training participants and their respective instructors' response. Therefore, for data collection, for every member at the training center, there was an equal chance of being selected for data collection of this study. Thereby, indicating, a simple random sampling technique is being used in this study.

At the end of each session (both long and short), the participants and their training instructors completed our questionnaires for cognitive absorption, knowledge absorption capacity, and/or individual learning. The training centre conducts intensive technical for the employees and had the capacity to run five parallel training sessions. Data with missing values and mismatched data of participants' and instructors' response were deleted from the analysis. The final data set yielded a total response of 371 participants and 37 instructors. This was used in all of the analyses and models of this study. Missing values were dealt with using the maximum likelihood method which is a more robust technique as compared to other alternatives (Bollen & Curran, 2006; Little & Rubin, 2002).

Measures

We used Likert type scales; participants provided their response for individual cognitive absorption and individual knowledge absorption capacity; instructors provided their response for individual learning for each of the participants.

Individual cognitive absorption: We measured individual cognitive absorption with a five-item Likert scale (Burton-Jones & Straub Jr., 2006) ranging from 1 = strongly disagree to 5 = strongly agree. Sample items for individual cognitive absorption are, "While I was in training, I was immersed in the task I was performing" and "The training provided me with a lot of enjoyment" ($\alpha = 0.67$).

Individual knowledge absorption capacity: We measured individual knowledge absorption capacity with a four-item Likert scale (Cohen & Levinthal, 1990; Jansen et al., 2005) ranging from 1 = strongly disagree to 5 = strongly agree. Sample items for individual knowledge absorption capacity are, "I may promptly judge how more useful the new information and knowledge is than the existing ones" and "I may accept the task-related information and knowledge well" ($\alpha = 0.86$).

Individual learning: Individual learning of the focal employee was measured as rated by instructors based on pre- and post-test scores of the participants for perception of knowledge improvement. This method of measuring individual learning has already been used (Magni et al., 2013). Instructors rated the participants on a five-item Likert scale (Hoegl & Gemuenden, 2001) ranging from 1 = strongly disagree to 5 = strongly agree. Sample items for individual learning are, "Focal employee acquired important know-how through this training" and "This training has successfully improved learning for specific topic" ($\alpha = 0.90$).

Control variables: We controlled for contextual and individual level factors which may affect cognitive absorption and learning of employees. Depending on the specific job performed by an employee, he/she may not have opportunities to communicate with others. Therefore, we controlled the variables for friendship, independence, informal contacts, and time availability with single item, seven-point Likert scale for each variable (Reinholt et al., 2011). Friendship was measured by asking from the respondents to indicate to what extent it was possible "to develop friendships in my job." Independence was measured by asking from the respondents to indicate to what extent they were "left on your own to do your work." Informal contacts were measured by asking from the respondents to indicate "how often do you have the opportunity to talk informally with colleagues?" Time availability was measured by asking from the respondents to indicate to what extent they agreed with the statement, "there is limited time to share knowledge" (reverse-coded). We also controlled for personal characteristics of capacity which our individual absorption capacity might not pick up, we controlled for number of years of working experience (tenure) and formal education.

Descriptive statistics

Descriptive statistics are presented in Table 1.

Table 1
Study 1: Means, standard deviation, and correlation among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8
Tenure	8.310	2.88								
Education	2.571	0.49	–0.094							
Time availability	2.677	1.02	–0.041	0.067						
Informal contacts	2.232	0.89	–0.076	0.096	0.354**					
Independence	2.426	1.01	–0.110*	0.068	0.310**	0.573**				
Friendship	2.779	1.08	–0.109*	0.080	0.057	0.316**	0.423**			
Cognitive absorption	3.146	0.48	0.011	–0.087	–0.084	–0.016	–0.035	–0.029		
Knowledge absorption capacity	3.319	0.92	0.004	–0.121*	–0.097	0.009	0.034	–0.042	0.137**	
Individual learning	3.088	1.04	–0.135**	0.060	–0.111**	0.191**	–0.003	0.021	0.166**	0.060

Note: N = 371; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

Results

Mplus 8 was used to test the hypotheses. Mplus allows the analysis of cross-sectional and longitudinal data with single-level and multilevel data (Muthén & Muthén, 2010). In our study, data was analysed with random coefficient models and Mplus 8 has extensive capabilities for complex models. Since the employees were nested into different work groups based on project requirements, use of simple linear regression could underestimate standard error. Therefore, to eliminate chances of standard error underestimation and potential interdependence among study variables, we used random coefficient modeling as recommended in the literature (Scherbaum & Ferreter, 2009) and used by researchers for data with same characteristics (Adeel et al., 2019; Adeel et al., 2022; Erdogan et al., 2015; Zhang et al., 2018). In random coefficient analyses, we used random coefficient single level analyses technique with Mplus 8.

Although this complex analysis technique best suited our model and data, the output produced by Mplus 8 for random coefficient cannot be used for chi-squared different testing in a regular way. Therefore, we also performed Satorra-Bentler difference test using log-likelihood method with scaling correction factor (Muthén

& Muthén, 2010). We also grand mean centered all of the main variables and interaction term of this study (knowledge absorption capacity). Our analysis followed a three-step procedure for moderated regression (Aiken et al., 1991) using random coefficient model.

Random coefficient model results are depicted in Table 2. In Model 1, all controlled variables were regressed on individual learning. In Model 2, in presence of all of the control variables, cognitive absorption was significant with individual learning ($\beta = 0.203$, $p \leq 0.05$) supporting H1. In Model 3, in presence of all of the control variables, the interaction of cognitive absorption and knowledge absorption capacity emerged as a positive predictor of individual learning ($\beta = 0.269$, $p \leq 0.01$), strengthening the relationship between cognitive absorption and individual learning while supporting H2. The moderating effect of this interaction is shown in Figure 2, where cognitive absorption is positively related with individual learning when knowledge absorption capacity is high and negative when knowledge absorption capacity is low. Training programmes with high cognitive absorption are likely to produce high levels of individual learning when the participants also had high level of knowledge absorption capacity.

Table 2
Study 1: Regression analyses

Predictor	Model 1 Individual learning		Model 2 Individual learning		Model 3 Individual learning	
	Estimate	SE	Estimate	SE	Estimate	SE
Tenure	–0.015	0.011	–0.015	0.011	–0.017	0.012
Education	0.051	0.079	0.064	0.081	0.078	0.081
Time availability	0.006	0.062	0.004	0.062	–0.029	0.062
Informal contacts	0.047	0.075	0.041	0.075	0.039	0.077
Independence	–0.082	0.056	–0.076	0.057	–0.058	0.058
Friendship	0.031	0.044	0.039	0.042	0.041	0.043
Cognitive absorption			0.203*	0.098	–0.673	0.357
Knowledge absorption capacity					–0.864**	0.291
Cognitive absorption × knowledge absorption capacity					0.269**	0.091
Δ χ^2 (Δdf)	2.87(5)		7.27(6)		16.08(8)*	
Δ R^2	0.102		0.071		0.040	

Note: $N = 371$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

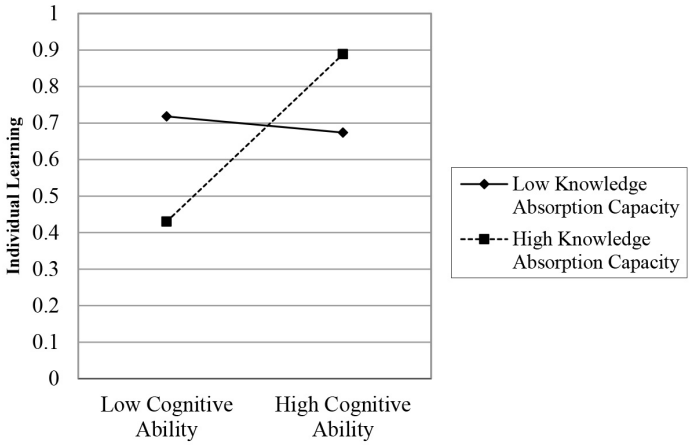

Figure 2. Moderating effect of knowledge absorption capacity (Study 1)

The results of this study were encouraging in providing initial support for our theoretical prediction. In order to strengthen our confidence in the validity and generalisability of the findings, we conducted a replication of with a different sample and research design. This allowed us to explore the role of technological opportunity along with cognitive absorption and knowledge absorption capacity for individual learning.

STUDY 2

We conducted a laboratory experiment to strengthen causal inferences and rule out alternative explanations in which participant's generated ideas to solve a business problem. We independently manipulated cognitive absorption and technological opportunity and measured knowledge absorption capacity. Directly manipulating cognitive absorption and technological opportunity rule out the possibility of alternative explanation of other alternative variables which may affect individual learning (generated ideas), such as ability, omitted knowledge, and skills (Amabile & Mueller, 2007). To mitigate instructors' biases for ratings of individual learning, all the business ideas generated by participants were measured by an independent rater (field expert – head of management sciences department) who was blind to the characteristics of the participants of the study.

Sample and Data Collection

We conducted an experiment with 119 graduates of four different sections of business students at a private sector university in Pakistan. All the participants were in final year of their business degree and the problem they solved was a part of their course requirement. Before the start of the study, a short presentation was given to the students that they are going to solve a real life business problem and this study intended to understand how problems are solved at work. The software randomly assigned numbers to the participants and the participants solved one of four experimental conditions based on a two-by-two between subject's factorial design. Additionally, access to the internet and use of any of the software was restricted for some of the computers while other computers were given full access to internet and computer software for any kind of support (communication, file sharing, file transfer, etc.) needed to solve the business problem.

Cognitive absorption manipulation: We followed the procedure typically used by psychologists to manipulate varying interest of the participants in an activity and/ or through the extent of free choice (Deci et al., 1999). In actuality, we had only one business problem which was given to the participants but for supporting and undermining the experience of self-determination, for some of the participants it was described as boring and for others it was described as interesting. For high and low cognitive absorption, we allowed free choice for the above mentioned tasks: for high cognitive absorption, the task selected by the participant from the two and the selected task was accepted as interesting. Similar choice was given for the low cognitive absorption but the selected task was rejected and they were assigned the same task and described as boring.

To prepare the participants, an introductory message was displayed with fake ratings about the kind of business problem they were about to solve. It was displayed that he/she can choose any of the business problems; one was rated high as interesting by previous participants and other was rated high as boring by previous participants. For both of the situations, the participants actually solved same business problem, except it was framed as an interesting or boring. To manipulate the situation, in case of high cognitive absorption, if the participant selected a task which was framed as interesting, it was accepted by the system and in case of low cognitive absorption, if the participant selected a task which was framed as interesting, it was restricted for that participant and assigned same task while framing it as boring.

Situation

An introductory message was displayed on the computer screen for the participants.

Welcome to the business problem study. You are going to participate in one of the studies which are intended to solve a real time problem of a local fast-food chain. Previous participants ranked both of these studies on an interesting or boring scale which will help you to select the study of your interest. Although, the studies will be assigned randomly to all of the participants, you still have a choice to select from the given options. For the study, you are required to generate an idea that might help the fast food chain to increase revenue.

a) A food chain study that has been rated as extremely interesting, with average ratings of 6.17 out of 7 points.

b) A food preparation that has been rated as boring, with average ratings of 6.73 out of 7 points.

In order to relate both of the options to same business problem, we gave them closely related names: food-chain study and food preparation. The method adopted to display an introductory screen was actually to guide people to select first option which was framed as interesting. As anticipated, all of the participants selected "interesting study" to solve the business problem. This selection took them to the next screen with a message "Thank you for selecting the food chain study!" then further instructions about the study were displayed. The message was displayed to make the participants believe that they have selected a study of their interest indicating free choice and interest. For low cognitive absorption, first selection took them to the next screen with a message "Your selected study cannot be assigned as the selection for the study is full now; we are directing you to food preparation study."

The message was displayed to make the participants believe that they are going to solve a problem which was rated as highly boring by previous participants indicating no free choice and low interest. We believe that free choice and task interest, by intrinsically motivating participants for a longer period of time, gave them a long-term cognitive absorption orientation as advocated by researchers (Hackman et al., 1978). Finally, the free choice, framing tasks affect was short lived as the task experience overrides the framing experience (Zalesny & Ford, 1990).

Additionally, access to the internet and use of any of the software was restricted for some of the computers. However, other computers were given full access to internet and computer software for any kind of support (such as communication, file sharing, and file transfer) needed to a solve business problem.

Technological opportunity manipulation: We restricted access to the internet and use of any of the software to solve a business problem for some of the computer systems (as allowed or restricted by the system randomly assigned to them). The purpose was to restrict any kind of support from technology the participant may get (communication, file sharing, file transfer, etc.). The participants were informed that they needed to solve the business problem with or without support of technological opportunity that was available or restricted for them. Additionally, we also restricted the use of mobile phones or any digital tool during the study for the participants whose access to the internet and use of software was restricted. The participants were also informed that the ideas they generated would be sent to the food chain organisation for further consideration.

The scenario provided about the business problem in all the conditions was: "ABC fast food was famous among customers of every age group. In the last three years, the management has observed a significant drop in sales volume. If it continues, many employees are expected to lose their jobs. A famous food chain owner once said 'It used to be that we served food to our customers; it's time now restaurants need to find additional ways to generate revenues.'"

Measures

Unless otherwise stated, all items used the same scale anchors as in previous study.

Individual learning: An independent rater (head of management sciences department) rated individual learning of the participants based on the same method anchored in the previous study. The independent rater also had prior experience working with service organisations in managerial positions. Therefore, the rater served the purpose of an expert for this study. The rater accessed the extent to which individual knowledge had been improved based on the same method anchored in the previous study. We then asked the rater to evaluate the participants on a five-item scale (Hoegl & Gemuenden, 2001) ranging from 1 = strongly disagree to 5 = strongly agree. Sample items for individual learning are "The student acquired important know-how to solve business problem" and "This activity has successfully improved learning of student about business problem" ($\alpha = 0.88$).

Manipulation checks and control variables

To ensure that the manipulations in this study are effective and served the purpose, we asked the respondents to provide their feedback for the scales measuring cognitive absorption, knowledge absorption capacity, and technological opportunity.

Technological opportunity: Technological opportunity variable was constructed with 15 items seven-point Likert type scale ranging from 1 = strongly disagree to 5 = strongly agree. Technological opportunity includes any of the tools or technology that may be allowed for use in contemporary organisations, including communication tools, electronic conferencing tools, collaborative work management tools, and social networking tools (Oldham & Da Silva, 2015). Sample item for communication tools is: "Did you use digital technology tools while performing tasks assigned to you?" Respondents then rated communication tools with five items (email, instant messaging, voice mail, faxing, and paging), electronic conferencing tools with five items (data conferencing, voice conferencing, video conferencing, discussion forums, and chat systems), collaborative work management tools with two items (file sharing and group calendars), and social networking tools with three items (Facebook, LinkedIn, and Twitter) ($\alpha = 0.94$).

In this study we controlled for a number of personal and contextual variables. In addition to the control we used in the previous study: tenure, education, time availability, informal contacts, independence, and friendship, we further controlled for psychological safety, autonomy, extrinsic motivation, and intrinsic motivation which may affect individual learning experience (Elsbach & Hargadon, 2006; Morgeson & Humphrey, 2006). Psychological safety was measured with a seven-item scale (Edmondson, 1999) ($\alpha = 0.87$); and autonomy at work was measured with an adopted scale (Morgeson & Humphrey, 2006) ($\alpha = 0.90$). For more robust results of moderation of knowledge absorption capacity, we also controlled for extrinsic and intrinsic motivation which may affect individual learning experience (Tharenou, 2001). Extrinsic motivation was measured with a 12-item scale (Grant & Berry, 2011; Ryan & Connell, 1989) ($\alpha = 0.97$) and intrinsic motivation was measured with 4-item scale (Grant, 2008) ($\alpha = 0.93$).

Table 3
Study 2: Mean, standard deviation, and correlation among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
Tenure	7.55	1.98													
Education	2.62	0.49	–0.074												
Time availability	2.71	1.01	–0.074	0.071											
Informal contacts	2.77	1.06	–0.138	0.029	0.437**										
Independence	2.75	1.26	–0.118	0.106	0.350**	–0.018									
Friendship	3.11	1.13	–0.246**	0.137	0.146	0.267**	0.216*								
Psychological safety	2.98	0.51	–0.082	0.002	0.267**	0.265**	0.230*	0.324**							
Autonomy	2.97	0.90	–0.108	–0.020	0.287**	0.195*	0.395**	0.454**	0.445**						
Extrinsic motivation	3.64	0.97	0.073	–0.037	–0.046	–0.129	–0.010	–0.085	–0.137	–0.060					
Intrinsic motivation	3.22	1.10	0.171	0.001	–0.088	–0.264**	–0.053	–0.201*	–0.170	–0.046	0.516**				
Cognitive absorption	3.21	0.53	–0.113	–0.140	–0.196*	–0.137	–0.130	–0.075	0.005	–0.101	–0.081	–0.031			
Technological opportunity	3.90	0.64	0.007	–0.121	–0.223*	–0.212*	–0.240**	0.014	–0.018	–0.208*	0.446**	0.320**	0.385**		
Knowledge absorption capacity	3.51	0.64	0.002	–0.187*	–0.142	–0.067	0.012	0.071	0.098	0.101	0.384**	0.289**	0.309**	0.380**	
Individual learning	3.87	0.74	–0.012	–0.086	–0.230*	–0.142	–0.127	–0.064	–0.079	–0.239**	0.327**	0.182*	0.300**	0.474**	0.360**

Note: $N = 119$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

Descriptive statistics

Descriptive statistics are presented in Table 3. Before performing any test on the data, we confirmed the validity and statistical discrimination among the key variables with Mplus 8. The confirmatory factor analysis showed that each variable used in this study represented a separate construct. Communication tools, electronic conferencing tools, collaborative work management tools, and social networking tools served as indicators of the latent construct and represented technological opportunity construct. The measurement model $\chi^2 = 1349.441$, 105, $N = 119$, $p < 0.001$, CFI = 0.928, TLI = 0.917, and RMSEA = 0.001 with construct reliability of 0.78 for average variance extracted (AVE) indicated a good fit of the model to the data. All factor loadings were statistically significant, ranging from 0.84 to 0.99 for technological opportunity.

Values of CFI and TLI fell below the acceptable range of 0.95 which might be an artifact of scale length (technological opportunity included larger number of items) and sample size, constituting an over-identified variable (Little et al., 2002).

Results

Mplus 8 was used to test the hypotheses of this study for which data was collected from 119 graduates of a private sector university in Pakistan. The students were nested into different courses under different instructors. Similar to the previous study, we used random coefficient analyses technique at single level of analysis.

Random coefficient regression results are depicted in Table 4. We first tested H1 and H2 to check whether the results produced in Study 1 (field study) are repeated or not in Study 2 (laboratory experiment). In Table 4 Model 2, cognitive absorption was a positive predictor of individual learning ($\beta = 0.499$, $p \leq 0.05$), strengthening H1. In Table 4 Model 3, the interaction of cognitive absorption and knowledge absorption capacity also emerged as a positive predictor of individual learning ($\beta = 0.612$, $p \leq 0.05$), strengthening H2.

The moderating effect is also shown in Figure 3; the results of this interaction showed that cognitive absorption is positively related with individual learning when knowledge absorption capacity is high and negative when knowledge absorption capacity is low.

Table 4
Study 2: Regression analyses

Predictor	Model 1 Individual Learning		Model 2 Individual Learning		Model 3 Individual Learning		Model 4 Individual Learning		Model 5 Individual Learning	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Tenure	–0.016	0.012	–0.003	0.016	–0.021	0.011	–0.026	0.017	–0.033	0.020
Education	–0.079	0.099	–0.008	0.105	0.019	0.098	0.055	0.045	0.051	0.037
Time availability	–0.101*	0.041	–0.051	0.027	–0.025	0.059	–0.028	0.036	–0.044	0.045
Informal contacts	–0.002	0.053	0.021	0.054	0.011	0.057	0.060	0.050	0.054	0.055
Independence	0.002	0.054	0.022	0.047	0.045	0.046	0.055	0.042	0.066	0.039
Friendship	0.084	0.048	0.098	0.055	0.072	0.041	0.009	0.014	–0.013	0.017
Psychological safety	0.050	0.126	–0.033	0.086	–0.113	0.092	–0.128*	0.055	–0.154*	0.069
Autonomy	–0.111	0.146	–0.077	0.109	–0.036	0.086	–0.042	0.058	–0.048	0.056
Extrinsic motivation	0.179**	0.049	0.163	0.060	0.008	0.018	–0.058***	0.009	–0.105***	0.016
Intrinsic motivation	–0.005	0.195	–0.035	0.163	–0.069	0.171	–0.161	0.118	–0.130	0.114
Cognitive absorption			0.499*	0.252	–0.787	0.543	0.214**	0.064	0.813**	0.163
Knowledge absorption capacity					–0.731*	0.322	–0.547*	0.211	0.937***	0.268
Cognitive absorption × Knowledge absorption capacity					0.612*	0.285	0.512*	0.117	0.311	0.052
Technological opportunity							0.291***	0.038	–0.911	0.259

(*Continued on next page*)

Table 4 (*Continued*)

Predictor	Model 1 Individual Learning		Model 2 Individual Learning		Model 3 Individual Learning		Model 4 Individual Learning		Model 5 Individual Learning	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Cognitive absorption × Technological opportunity							0.081	0.112	–0.151*	0.036
Knowledge absorption capacity × Technological opportunity							–0.99***	0.192	–0.216***	0.038
Cognitive absorption × Knowledge absorption capacity × Technological opportunity									0.653**	0.158
$\Delta \chi^2$ (Δdf)	5.46(19)		16.89(10)		25.30(12)*		28.14(11)***		28.81(10)***	
ΔR^2	0.525		0.491		0.369		0.372		0.381	

Note: $N = 119$; $^{*}p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$

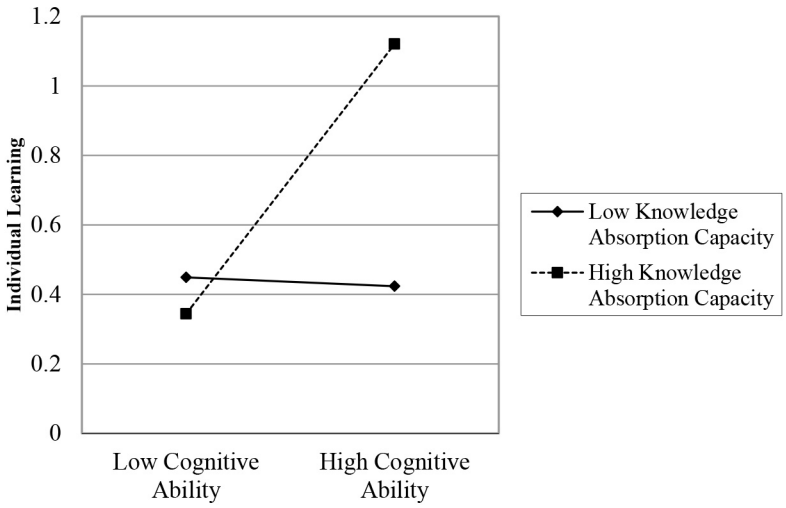

Figure 3. Moderating effect of knowledge absorption capacity (Study 2)

Finally, three-way interaction results are reported in Table 4 Model 5 compared to Model 3: the addition of three-way interaction increases the overall predicting power for individual learning ($\beta = 0.653$, $p \leq 0.001$) supporting H3 of this study. Proportionate reduction in error variance also increased from 0.369 in Model 3 to 0.381 in Model 5, indicating that the model with three-way interaction is superior to a model without three-way interaction. Three-way interaction is also shown in Figure 4; individual learning is highest when knowledge absorption capacity, cognitive ability, and technological opportunity are high. The result of interaction provided a more accurate picture that training programmes with high cognitive absorption are likely to produce high levels of individual learning when the participants also had a high level of knowledge absorption capacity and technological opportunity.

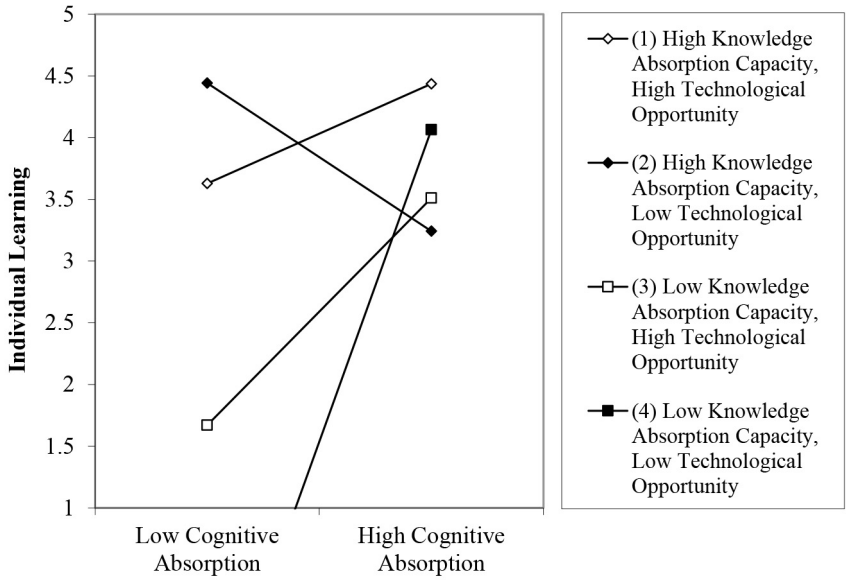

Figure 4. Three-way interaction (Study 2)

RESULTS AND DISCUSSION

The primary objective of the study was to understand the inconsistent relationship between cognitive absorption and individual learning. It has been shown that high involvement training programmes evoke a cognitive state of absorption of the participants and bring high individual learning outcomes as compared to traditional trainings (Bell & Kozlowski, 2008; McCarthy & Milner, 2020; Yildiz et al., 2019). However, if this was the case, it raises the question, why does cognitive absorption alone not always work for high levels of individual learning?

In a field study and a lab experiment, we tested the hypothesis that the positive association between cognitive absorption and highest individual learning was contingent upon the individual level knowledge absorption capacity. We further found that training programmes with high cognitive absorption are likely to produce high level of individual learning when the participants also have both high level of knowledge absorption capacity and technological opportunity. Replication of the results across the two studies strengthens the validity of our conclusions.

Theoretical Contributions

Building on motivation-ability-opportunity, the prime argument in our research is that although high absorptive training programmes adequately motivate employees for deep involvement in training for their learning, the participants need adequate ability and opportunity to fully exploit the learning opportunity. The three-way interaction results as presented in this research provided unique contributions to the motivation-ability-opportunity research. Consistent with previous literature (Chen & Chang, 2016; Kirschner et al., 2018; Loderer et al., 2020; McCarthy & Milner, 2020; Tang et al., 2020; Yildiz et al., 2019), the main finding of our research is that individual learning is highest when cognitive absorption, knowledge absorption capacity, and technological opportunities are high. The findings suggested that adequate motivation and ability to absorb knowledge may offset the individual learning problem; high technological opportunity when coupled with high level of motivation and ability to absorb knowledge will bring high level of individual learning.

Previous research on high absorptive training programmes has largely neglected the role of absorption capacity. Some researchers, however, raised the issue of absorption capacity in the context of team performance (Basaglia et al., 2010); and some focused on the exchange of knowledge in ego network (Cannella Jr & McFadyen, 2016; Reinholt et al., 2011). Although such research includes knowledge absorption capacity, its focus is quite different from our research, thus, an important contribution to management literature lies in the way motivation-ability-opportunity framework is used. We directly included individuals' knowledge absorption capacity in theorising and measurement rather than using proxies for measuring absorption capacity such as tacit mutual understanding and knowledge integration capability of teams.

Additionally, in keeping with well-established learning research, our focus remained with individual learning instead of group or organisational level learning. Making this distinction provides more nuanced conception of learning. Moreover, knowledge absorption capacity has also rarely been studied at individual level, it has mostly theorised and measured at group or organisational level (Andersén & Kask, 2012; Wang et al., 2013). Our research findings suggested that it matters how much an individual has capacity to absorb knowledge for high level individual learning from high absorptive training programmes.

Organisations are increasingly investing in technology to manage and improve knowledge management practices for growth and long-term survival (Choi et al., 2010; Miller-Rososhansky & Bryan, 2018; Ranganathan et al., 2018). While

introducing technological opportunity in this research we also found some interesting answers in the way cognitive absorption, knowledge absorption, and technological opportunity relate to individual learning. Cognitive absorption is found to be a consistent, direct predictor of individual learning, yet its positive association with others' rated individual learning mainly appears when cognitive absorption is combined with knowledge absorption capacity and/or technological opportunity. Another pattern of relationship between technological opportunity and individual learning was found.

Specifically, technological opportunity was directly associated with others' reported individual learning, this positive and direct association seems to be negative for others' reported learning when knowledge absorption capacity was introduced. However, when cognitive absorption, knowledge absorption capacity, and technological opportunity combine, they predict others' perceived learning in a positive way. Individual learning was high in presence of high cognitive absorption, high knowledge absorption capacity, and high technological opportunity; and low otherwise.

Practical Contributions

Research on the effects of high engagement and involvement of individuals during training programmes on their learning has highlighted a fundamental dilemma: high absorption is critical for effective training as it leverages a high learning experience, while at the same time it entails an individual learning problem. Thus, the question raised earlier poses an important challenge for management scholars and practitioners. Organisations interested in stimulating individual learning develop training programmes for total immersion of the participants (Bell & Kozlowski, 2008; Kahwajy et al., 2005), yet the participants find it difficult to learn from these training initiatives (Magni et al., 2013; Meyer, 2003). We addressed this challenge by providing a theoretical framework based on motivation-ability-opportunity theories of behaviour (Blumberg & Pringle, 1982) in the context of high absorptive training programmes which offered a promising conceptual framework for both explaining and resolving this inconsistency.

According to the literature survey, the current study is the first study in Pakistan that shows the cognitive absorption for individual level learning in an Asian context. Most of the past research was conducted in developed countries (Goasduff & Pettey, 2011; Kaizer et al., 2020; Kim et al., 2019; Lischewski et al., 2020; Magni et al., 2013). For example, Magni et al. (2013) examined the relationship between cognitive absorption, group learning behaviour, and individual learning. By conducting the study in Asian context, we add to the literature on cognitive

absorption and learning which is mostly based on data from developed countries. This will help in the generalisability of theoretical concepts and empirical findings as well as assist in understanding the human resource processes in developing countries.

In order to satisfy the increasing demand for high involved learning, human resource professionals strive to use new approaches to training while mainly focusing on learner-centered experience for learning and development. With this research, we inform practitioners that in these learner-focused trainings, personal characteristics of the participants and technology play a vital role in determining effectiveness for high level of individual learning. The research findings will help practitioners understand what they need to add in their training programmes for high level individual learning experience. Doing so will bring best value in form of high learning to the cost of trainings.

CONCLUSION

Employee learning develops individual's capacity for higher productivity of the organisations. The results of this research revealed that cognitive absorption and highest individual learning was contingent upon the individual level knowledge absorption capacity. It was further found that training programmes with high cognitive absorption are likely to produce high levels of individual learning when the participants also have both high level of knowledge absorption capacity and technological opportunity. By explaining our proposed model based on the motivation-ability-opportunity theory of behaviour, we help to resolve one of the puzzles previously identified in the literature which is, why high absorptive training programmes are not always beneficial for individual level learning? It is hoped that this research will encourage future scholarship to fully consider dynamic, within-person cognition processes, learning opportunities, and the characteristics of individuals who are more or less likely to involve in learning across time.

Limitations and Future Research Directions

First, our focus mainly remained on understanding and measuring factors related to individual learning of focal employees, neglecting the role of the instructor. Research has highlighted the importance of instructor in knowledge absorption of focal employee (Arbaugh, 2008). In our research, training was provided by the same instructor throughout the day (for both studies) and measured by one rater (same instructor in Study 1 and independent rater in Study 2). By doing so, we limit the possible effects instructors could have on individual learning in both

Studies 1 and 2. Further research could take two measures to limit possible effects of instructor on learning, by dividing training activity to multiple instructors in a single day and by rating learning for focal employee by more than one rater.

Second, due to design limitations, our focus remained with investigating learning at the individual level of analysis. Other studies have also focused on single level of analysis (individual, group, or organisation) (Sarin & McDermott, 2003; Tan & Zhao, 2003; Tucker et al., 2007). Future studies should build on our results by adding more cross-level characteristics for individual learning for deeper understanding of the topic. For example, adding group characteristics or organisational culture as interaction with highly involved training programmes for individual learning would broaden our understanding on the topic.

REFERENCES

Addison, T. (2003). E-commerce project development risks: Evidence from a Delphi survey. *International Journal of Information Management*, *23*(1), 25–40. https://doi.org/10.1016/S0268-4012(02)00066-X

Adeel, A., Batool, S., Daisy, K. M. H., & Khan, M. K. (2022). LMX and creative idea validation: The role of helping and bullying. *Asian Academy of Management Journal*, *27*(2), 107–134. https://doi.org/10.21315/aamj2022.27.2.6

Adeel, A., Pengcheng, Z., Saleem, F., Ali, R., & Batool, S. (2019). Conflicts and creative idea endorsement: Do subordinates' political skills and implementation instrumentality matter? *International Journal of Conflict Management*, *30*(5), 637–656. https://doi.org/10.1108/IJCMA-02-2019-0033

Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, *24*(4), 665–694. https://doi.org/10.2307/3250951

Agarwal, R., Sambamurthy, V., & Stair, R. M. (1997). Cognitive absorption and the adoption of new information technologies. *Academy of Management Proceedings*, *1997*(1). https://doi.org/10.5465/ambpp.1997.4983719

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*. SAGE Publications.

Al-Taweel, F. B., Abdulkareem, A. A., Gul, S. S., & Alshami, M. L. (2021). Evaluation of technology: Based learning by dental students during the pandemic outbreak of coronavirus disease 2019. *European Journal of Dental Education*, *25*(1), 183–190. https://doi.org/10.1111/eje.12589

Alketbi, S., Akmal, S., Al-Shami, S., & Hamid, R. (2021). Conceptual framework: The role of cognitive absorption in Delone and McLean success model in online learning in United Arab Emirates. *Academy of Strategic Management Journal*, *20*, 1–9. https://www.abacademies.org/articles/conceptual-framework-the-role-of-cognitive-absorption-in-delone-and-mclean-success-model-in-online-learning-in-united-arab-emirate-11046.html

Almuraqab, N. A. S. (2020). Shall universities at the UAE continue distance learning after the COVID-19 pandemic? Revealing students' perspective. *Social Science Research Network*. https://pubmed.ncbi.nlm.nih.gov/32714122

Amabile, T., & Mueller, J. (2007). Psychometric approaches to the study of human creativity. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 35–61). Cambridge University Press.

Andersén, J., & Kask, J. (2012). Asymmetrically realized absorptive capacity and relationship durability. *Management Decision*, *50*(1), 43–57. https://doi.org/10.1108/00251741211194868

Arbaugh, J. B. (2008). Does the community of inquiry framework predict outcomes in online MBA courses? *The International Review of Research in Open and Distributed Learning*, *9*(2), 1–21. https://doi.org/10.19173/irrodl.v9i2.490

Armin, M. H., & Roslin, V. P. (2021). The effect of nonverbal communication training on Iranian EFL learners' perception of communicative competence and communication apprehension. *KURMANJ; The Journal of Culture, Humanities and Social Science*, *3*(1), 1–11. https://doi.org/10.47176/kurmanj.3.1.1

Ashford, S. J. (1986). Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal*, *29*(3), 465–487. https://doi.org/10.2307/256219

Austin, J. R. (2003). Transactive memory in organizational groups: The effects of content, consensus, specialization, and accuracy on group performance. *Journal of Applied Psychology*, *88*(5), 866–878. https://doi.org/10.1037/0021-9010.88.5.866

Balakrishnan, J., & Dwivedi, Y. K. (2021). Role of cognitive absorption in building user trust and experience. *Psychology & Marketing*, *38*(4), 643–668. https://doi.org/10.1002/mar.21462

Barnes, S. J., Pressey, A. D., & Scornavacca, E. (2019). Mobile ubiquity: Understanding the relationship between cognitive absorption, smartphone addiction and social network services. *Computers in Human Behavior*, *90*, 246–258. https://doi.org/10.1016/j.chb.2018.09.013

Basaglia, S., Caporarello, L., Magni, M., & Pennarola, F. (2010). IT knowledge integration capability and team performance: The role of team climate. *International Journal of Information Management*, *30*(6), 542–551. https://doi.org/10.1016/j.ijinfomgt.2010.04.003

Bell, B. S., & Kozlowski, S. W. (2008). Active learning: Effects of core training design elements on self-regulatory processes, learning, and adaptability. *Journal of Applied Psychology*, *93*(2), 296. https://doi.org/10.1037/0021-9010.93.2.296

Benbunan-Fich, R., & Hiltz, S. R. (2003). Mediators of the effectiveness of online courses. *IEEE Transactions on Professional Communication*, *46*(4), 298–312. https://doi.org/10.1109/TPC.2003.819639

Bergdahl, N., Nouri, J., & Fors, U. (2020). Disengagement, engagement and digital skills in technology-enhanced learning. *Education and Information Technologies*, *25*(2), 957–983. https://doi.org/10.1007/s10639-019-09998-w

Blumberg, M., & Pringle, C. D. (1982). The missing opportunity in organizational research: Some implications for a theory of work performance. *Academy of Management Review*, *7*(4), 560–569. https://doi.org/10.5465/amr.1982.4285240

Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: A structural equation perspective* (vol. 467). John Wiley & Sons.

Bresman, H. (2010). External learning activities and team performance: A multimethod field study. *Organization Science*, *21*(1), 81–96. https://doi.org/10.1287/orsc.1080.0413

Bunderson, J. S. (2003). Recognizing and utilizing expertise in work groups: A status characteristics perspective. *Administrative Science Quarterly*, *48*(4), 557–591. https://doi.org/10.2307/3556637

Burton-Jones, A., & Straub Jr, D. W. (2006). Reconceptualizing system usage: An approach and empirical test. *Information Systems Research*, *17*(3), 228–246. https://doi.org/10.1287/isre.1060.0096

Cannella Jr, A. A., & McFadyen, M. A. (2016). Changing the exchange: The dynamics of knowledge worker ego networks. *Journal of Management*, *42*(4), 1005–1029. https://doi.org/10.1177/0149206313511114

Casillas, J. C., Barbero, J. L., & Sapienza, H. J. (2015). Knowledge acquisition, learning, and the initial pace of internationalization. *International Business Review*, *24*(1), 102–114. https://doi.org/10.1016/j.ibusrev.2014.06.005

Chang, J. J., Lin, W. S., & Chen, H. R. (2019). How attention level and cognitive style affect learning in a MOOC environment? Based on the perspective of brainwave analysis. *Computers in Human Behavior*, *100*, 209–217. https://doi.org/10.1016/j.chb.2018.08.016

Chen, S. Y., & Chang, L. P. (2016). The influences of cognitive styles on individual learning and collaborative learning. *Innovations in Education and Teaching International*, *53*(4), 458–471. https://doi.org/10.1080/14703297.2014.931242

Choi, S. Y., Lee, H., & Yoo, Y. (2010). The impact of information technology and transactive memory systems on knowledge sharing, application, and team performance: A field study. *MIS Quarterly*, *34*(4), 855–870. https://doi.org/10.2307/25750708

Cohen, W., & Levinthal, D. (1990). Tacit knowledge and scientific networks. *Administrative Science Quarterly*, *35*(1), 128–152. https://www.jstor.org/stable/284473

Comeig, I., Mas-Tur, A., & Viglia, G. (2018). Introduction to the special issue on innovation, knowledge absorption, judgement and decision-making processes. *European Journal of Management and Business Economics*, *27*(2), 126–128. https://doi.org/10.1108/EJMBE-07-2018-067

Daouk, L., & Aldalaien, M. (2019). The usage of e-learning instructional technologies in higher education institutions in the United Arab Emirates (UAE). *TOJET: The Turkish Online Journal of Educational Technology*, *18*(3), 97–109. https://files.eric.ed.gov/fulltext/EJ1223782.pdf

Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, *125*(6), 627. https://doi.org/10.1037/0033-2909.125.6.627

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems*, *19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Denison, D. R., Hart, S. L., & Kahn, J. A. (1996). From chimneys to cross-functional teams: Developing and validating a diagnostic model. *Academy of Management Journal*, *39*(4), 1005–1023. https://doi.org/10.2307/256721

Dewett, T. (2003). Understanding the relationship between information technology and creativity in organizations. *Creativity Research Journal*, *15*(2–3), 167–182. https://doi.org/10.1080/10400419.2003.9651410

Druskat, V. U., & Kayes, D. C. (2000). Learning versus performance in short-term project teams. *Small Group Research*, *31*(3), 328–353. https://doi.org/10.1177/104649640003100304

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2), 350–383. https://doi.org/10.2307/2666999

Edmondson, A. C., Winslow, A. B., Bohmer, R. M., & Pisano, G. P. (2003). Learning how and learning what: Effects of tacit and codified knowledge on performance improvement following technology adoption. *Decision Sciences*, *34*(2), 197–224. https://doi.org/10.1111/1540-5915.02316

Elsbach, K. D., & Hargadon, A. B. (2006). Enhancing creativity through "mindless" work: A framework of workday design. *Organization Science*, *17*(4), 470–483. https://doi.org/10.1287/orsc.1060.0193

Erdogan, B., Bauer, T. N., & Walter, J. (2015). Deeds that help and words that hurt: Helping and gossip as moderators of the relationship between leader–member exchange and advice network centrality. *Personnel Psychology*, *68*(1), 185–214. https://doi.org/10.1111/peps.12075

Gajendran, R. S., & Harrison, D. A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology*, *92*(6), 1524–1541. https://doi.org/10.1037/0021-9010.92.6.1524

Gardner, H. K., Gino, F., & Staats, B. R. (2012). Dynamically integrating knowledge in teams: Transforming resources into performance. *Academy of Management Journal*, *55*(4), 998–1022. https://doi.org/10.5465/amj.2010.0604

Garud, R., & Kumaraswamy, A. (2005). Vicious and virtuous circles in the management of knowledge: The case of Infosys Technologies. *MIS Quarterly*, *19*(1), 9–33. https://doi.org/10.2307/25148666

Goasduff, L., & Pettey, C. (2011). *Gartner Enterprise Architecture Summit Report.* https://www.gartner.com/imagesrv/summits/docs/na/enterprise-architecture/EA_Recommended_AAAG_flier.pdf

Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*, *18*(1), 185–214. https://doi.org/10.1080/07421222.2001.11045669

Grant, A. M. (2008). Does intrinsic motivation fuel the prosocial fire? Motivational synergy in predicting persistence, performance, and productivity. *Journal of Applied Psychology*, *93*(1), 48. https://doi.org/10.1037/0021-9010.93.1.48

Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity. *Academy of Management Journal*, *54*(1), 73–96. https://doi.org/10.5465/amj.2011.59215085

Guo, Y. M., & Ro, Y. K. (2008). Capturing flow in the business classroom. *Decision Sciences Journal of Innovative Education*, *6*(2), 437–462. https://doi.org/10.1111/j.1540-4609.2008.00185.x

Hackman, J. R., Pearce, J. L., & Wolfe, J. C. (1978). Effects of changes in job characteristics on work attitudes and behaviors: A naturally occurring quasi-experiment. *Organizational Behavior and Human Performance*, *21*(3), 289–304. https://doi.org/10.1016/0030-5073(78)90055-7

Hamilton, D., McFarland, D., & Mirchandani, D. (2000). A decision model for integration across the business curriculum in the 21st century. *Journal of Management Education*, *24*(1), 102–126. https://doi.org/10.1177/105256290002400107

Hoegl, M., & Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization Science*, *12*(4), 435–449. https://doi.org/10.1287/orsc.12.4.435.10635

Huang, S.-Y., Kuo, Y.-H., & Chen, H.-C. (2020). Applying digital escape rooms infused with science teaching in elementary school: Learning performance, learning motivation, and problem-solving ability. *Thinking Skills and Creativity*, *37*, 100681. https://doi.org/10.1016/j.tsc.2020.100681

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology*, *92*(5), 1332. https://doi.org/10.1037/0021-9010.92.5.1332

Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2005). Managing potential and realized absorptive capacity: How do organizational antecedents matter? *Academy of Management Journal*, *48*(6), 999–1015. https://doi.org/10.5465/AMJ.2005.19573106

Jiang, X., & Li, Y. (2008). The relationship between organizational learning and firms' financial performance in strategic alliances: A contingency approach. *Journal of World Business*, *43*(3), 365–379. https://doi.org/10.1016/j.jwb.2007.11.003

Jiang, Z., Chan, J., Tan, B. C., & Chua, W. S. (2010). Effects of interactivity on website involvement and purchase intention. *Journal of the Association for Information Systems*, *11*(1), 34–59. https://doi.org/10.17705/1jais.00218

Kahwajy, J., Kemanian, V., Keys, T., & Strebel, P. (2005). Emotional highs. *Mastering executive education: How to combine content with context and emotion. The IMD Guide* (pp. 13–20). Pearson Education.

Kaizer, B. M., Silva, C. E. S., de Pavia, A. P., & Zerbini, T. (2020). E-learning training in work corporations: A review on instructional planning. *European Journal of Training and Development*, *44*(6/7), 615–636. https://doi.org/10.1108/EJTD-08-2019-0149

Keys, B., & Wolfe, J. (1990). The role of management games and simulations in education and research. *Journal of Management*, *16*(2), 307–336. https://doi.org/10.1177/014920639001600205

Kim, E.-J., Park, S., & Kang, H.-S. T. (2019). Support, training readiness and learning motivation in determining intention to transfer. *European Journal of Training and Development*, *43*(3/4), 306–321. https://doi.org/10.1108/EJTD-08-2018-0075

Kirschner, P. A., Sweller, J., Kirschner, F., & Zambrano, J. (2018). From cognitive load theory to collaborative cognitive load theory. *International Journal of Computer-Supported Collaborative Learning*, *13*(2), 213–233. https://doi.org/10.1007/s11412-018-9277-y

Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., & Liu, J. (2020). Projecting the potential impact of COVID-19 school closures on academic achievement. *Educational Researcher*, *49*(8), 549–565. https://doi.org/10.3102/0013189X20965918

Larson, J. R., Christensen, C., Abbott, A. S., & Franz, T. M. (1996). Diagnosing groups: Charting the flow of information in medical decision-making teams. *Journal of Personality and Social Psychology*, *71*(2), 315. https://doi.org/10.1037//0022-3514.71.2.315

Lewis, M. (2004). *Moneyball: The art of winning an unfair game*. WW Norton & Company.

Lischewski, J., Seeber, S., Wuttke, E., & Rosemann, T. (2020). What influences participation in non-formal and informal modes of continuous vocational education and training? An analysis of individual and institutional influencing factors. *Frontiers in Psychology*, *11*, 2821. https://doi.org/10.3389/fpsyg.2020.534485

Little, R. J., & Rubin, D. B. (2002). Bayes and multiple imputation. *Statistical analysis with missing data* (pp. 200–220). John Wiley & Sons, Inc. https://doi.org/10.1002/9781119013563.ch10

Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question, weighing the merits. *Structural Equation Modeling*, *9*(2), 151–173. https://doi.org/10.1207/S15328007SEM0902_1

Loderer, K., Pekrun, R., & Lester, J. C. (2020). Beyond cold technology: A systematic review and meta-analysis on emotions in technology-based learning environments. *Learning and Instruction*, *70*, 101162. https://doi.org/10.1016/j.learninstruc.2018.08.002

Magni, M., Paolino, C., Cappetta, R., & Proserpio, L. (2013). Diving too deep: How cognitive absorption and group learning behavior affect individual learning. *Academy of Management Learning & Education*, *12*(1), 51–69. https://doi.org/10.5465/amle.2011.0096

Martin, X., & Salomon, R. (2003). Knowledge transfer capacity and its implications for the theory of the multinational corporation. *Journal of International Business Studies*, *34*(4), 356–373. https://doi.org/10.1057/palgrave.jibs.8400037

Masrek, M. N., & Gaskin, J. E. (2016). Assessing users satisfaction with web digital library: The case of Universiti Teknologi MARA. *The International Journal of Information and Learning Technology*, *33*(1), 36–56. https://doi.org/10.1108/IJILT-06-2015-0019

Mathieu, J. E., & Martineau, J. W. (1997). Individual and situational influences in training motivation. In J. K. Ford, S. W. J. Kozlowski, K. Kraiger, E. Salas, & M. S. Teachout (Eds.), *Improving training effectiveness in work organizations* (pp. 193–221). Psychology Press.

McCarthy, G., & Milner, J. (2020). Ability, motivation and opportunity: Managerial coaching in practice. *Asia Pacific Journal of Human Resources*, *58*(1), 149–170. https://doi.org/10.1111/1744-7941.12219

Meyer, J. P. (2003). Four territories of experience: A developmental action inquiry approach to outdoor-adventure experiential learning. *Academy of Management Learning & Education*, *2*(4), 352–363. https://doi.org/10.5465/amle.2003.11901956

Miller-Rososhansky, L., & Bryan, V. C. (2018). Use of technology-enabled informal learning in a learning organization. In V. C. Bryan, A. T. Musgrove, & J. R. Powers (Eds.), *Handbook of research on human development in the digital age* (pp. 33–42). IGI Global. https://doi.org/10.4018/978-1-5225-2838-8.ch002

Moreno, V., Cavazotte, F., & Alves, I. (2017). Explaining university students' effective use of e-learning platforms. *British Journal of Educational Technology*, *48*(4), 995–1009. https://doi.org/10.1111/bjet.12469

Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology*, *91*(6), 1321–1339. https://doi.org/10.1037/0021-9010.91.6.1321

Mpofu, M., & Hlatywayo, C. K. (2015). Training and development as a tool for improving basic service delivery: The case of a selected municipality. *Journal of Economics, Finance and Administrative Science*, *20*(39), 133–136. https://doi.org/10.1016/j.jefas.2015.10.004

Muthén, L. K., & Muthén, B. O. (2010). *Mplus: Statistical analysis with latent variables user's guide* (Version 6). Muthén & Muthén.

Olanipekun, T., Effoe, V., Bakinde, N., Bradley, C., Ivonye, C., & Harris, R. (2020). Learning styles of internal medicine residents and association with the in-training examination performance. *Journal of the National Medical Association*, *112*(1), 44–51. https://doi.org/10.1016/j.jnma.2019.12.002

Oldham, G. R., & Da Silva, N. (2015). The impact of digital technology on the generation and implementation of creative ideas in the workplace. *Computers in Human Behavior*, *42*, 5–11. https://doi.org/10.1016/j.chb.2013.10.041

Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior*, *31*(2–3), 463–479. https://doi.org/10.1002/job.678

Ozkara, B. Y., Ozmen, M., & Kim, J. W. (2017). Examining the effect of flow experience on online purchase: A novel approach to the flow theory based on hedonic and utilitarian value. *Journal of Retailing and Consumer Services*, *37*, 119–131. https://doi.org/10.1016/j.jretconser.2017.04.001

Pallud, J. (2017). Impact of interactive technologies on stimulating learning experiences in a museum. *Information & Management*, *54*(4), 465–478. https://doi.org/10.1016/j.im.2016.10.004

Parboteeah, K. P., Hoegl, M., & Muethel, M. (2015). Team characteristics and employees' individual learning: A cross-level investigation. *European Management Journal*, *33*(4), 287–295. https://doi.org/10.1016/j.emj.2015.02.004

Park, C. W., & Mittal, B. (1985). A theory of involvement in consumer behavior: Problems and issues. In J. N. Sheth (Ed.), *Research in consumer behavior 1* (pp. 201–231). JAI Press.

Pearson, S. (2020). Anatomy: Beyond the COVID-19 pandemic. *Academic Medicine*, *95*(11), e1. https://doi.org/10.1097/acm.0000000000003567

Ranganathan, R., Ghosh, A., & Rosenkopf, L. (2018). Competition–cooperation interplay during multifirm technology coordination: The effect of firm heterogeneity on conflict and consensus in a technology standards organization. *Strategic Management Journal*, *39*(12), 3193–3221. https://doi.org/10.1002/smj.2786

Reinholt, M., Pedersen, T., & Foss, N. J. (2011). Why a central network position isn't enough: The role of motivation and ability for knowledge sharing in employee networks. *Academy of Management Journal*, *54*(6), 1277–1297. https://doi.org/10.5465/amj.2009.0007

Reychav, I., & Wu, D. (2015). Are your users actively involved? A cognitive absorption perspective in mobile training. *Computers in Human Behavior*, *44*, 335–346. https://doi.org/10.1016/j.chb.2014.09.021

Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, *57*(5), 749. https://doi.org/10.1037//0022-3514.57.5.749

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*(1), 68. https://doi.org/10.1037/0003-066X.55.1.68

Salas, E., & Cannon-Bowers, J. (2000). The anatomy of team training. In S. Tobias & J. D. Fletcher (Eds.), *Training and retraining: A handbook for business, industry, goverment, and the military* (pp. 312–335). Macmillan Library Reference.

Salas, E., Wildman, J. L., & Piccolo, R. F. (2009). Using simulation-based training to enhance management education. *Academy of Management Learning & Education*, *8*(4), 559–573. https://www.jstor.org/stable/27759193

Salimon, M. G., Sanuri, S. M. M., Aliyu, O. A., Perumal, S., & Yusr, M. M. (2021). E-learning satisfaction and retention: A concurrent perspective of cognitive absorption, perceived social presence and technology acceptance model. *Journal of Systems and Information Technology*, *23*(1), 109–129. https://doi.org/10.1108/JSIT-02-2020-0029

Sarin, S., & McDermott, C. (2003). The effect of team leader characteristics on learning, knowledge application, and performance of cross-functional new product development teams. *Decision Sciences*, *34*(4), 707–739. https://doi.org/10.1111/j.1540-5414.2003.02350.x

Scherbaum, C. A., & Ferreter, J. M. (2009). Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods*, *12*(2), 347–367. https://doi.org/10.1177/1094428107308906

Seo, Y. W., Chae, S. W., & Lee, K. C. (2015). The impact of absorptive capacity, exploration, and exploitation on individual creativity: Moderating effect of subjective well-being. *Computers in Human Behavior*, *42*, 68–82. https://doi.org/10.1016/j.chb.2014.03.031

Shen, C. W., & Ho, J. T. (2020). Technology-enhanced learning in higher education: A bibliometric analysis with latent semantic approach. *Computers in Human Behavior*, *104*, 106177. https://doi.org/10.1016/j.chb.2019.106177

Stewart, D. D., & Stasser, G. (1995). Expert role assignment and information sampling during collective recall and decision making. *Journal of Personality and Social Psychology*, *69*(4), 619–628. https://doi.org/10.1037//0022-3514.69.4.619

Tan, H. H., & Zhao, B. (2003). Individual-and perceived contextual-level antecedents of individual technical information inquiry in organizations. *The Journal of Psychology*, *137*(6), 597–621. https://doi.org/10.1080/00223980309600637

Tang, C., Zhang, Y., & Reiter-Palmon, R. (2020). Network centrality, knowledge searching and creativity: The role of domain. *Creativity and Innovation Management*, *29*(1), 72–84. https://doi.org/10.1111/caim.12351

Tannenbaum, S. I., & Yukl, G. (1992). Training and development in work organizations. *Annual Review of Psychology*, *43*(1), 399–441. https://doi.org/10.1146/annurev.ps.43.020192.002151

Thabet, R., Hill, C., & Gaad, E. (2021). Perceptions and barriers to the adoption of blended learning at a research-based university in the United Arab Emirates. In M. Al-Emran, K. Shaalan, & A. Hassanien (Eds.), *Recent advances in intelligent systems and smart applications* (pp. 277–294). Springer. https://doi.org/10.1007/978-3-030-47411-9_16

Tharenou, P. (2001). The relationship of training motivation to participation in training and development. *Journal of Occupational and Organizational Psychology*, *74*(5), 599–621. https://doi.org/10.1348/096317901167541

Tseng, C.-Y., Chang Pai, D., & Hung, C.-H. (2011). Knowledge absorptive capacity and innovation performance in KIBS. *Journal of Knowledge Management*, *15*(6), 971–983. https://doi.org/10.1108/13673271111179316

Tucker, A. L., Nembhard, I. M., & Edmondson, A. C. (2007). Implementing new practices: An empirical study of organizational learning in hospital intensive care units. *Management Science*, *53*(6), 894–907. https://doi.org/10.1287/mnsc.1060.0692

Turvey, K., & Pachler, N. (2020). Design principles for fostering pedagogical provenance through research in technology supported learning. *Computers & Education*, *146*, 103736. https://doi.org/10.1016/j.compedu.2019.103736

Van de Ven, A., Bechara, J. P., & Sun, K. (2017). How outcome agreement and power balance among parties influence processes of organizational learning and non-learning. *Journal of Management*, *45*(3), 1252–1283. https://doi.org/10.1177/0149206317698021

Vătămănescu, E. M., Cegarra-Navarro, J. G., Andrei, A. G., Dincă, V. M., & Alexandru, V. A. (2020). SMEs strategic networks and innovative performance: A relational design and methodology for knowledge sharing. *Journal of Knowledge Management*, *24*(6), 1369–1392. https://doi.org/10.1108/JKM-01-2020-0010

Virick, M., DaSilva, N., & Arrington, K. (2010). Moderators of the curvilinear relation between extent of telecommuting and job and life satisfaction: The role of performance outcome orientation and worker type. *Human Relations*, *63*(1), 137–154. https://doi.org/10.1177/0018726709349198

Wang, E. T., Tai, J. C., & Grover, V. (2013). Examining the relational benefits of improved interfirm information processing capability in buyer-supplier dyads. *MIS Quarterly*, *37*(1), 149–173. https://www.jstor.org/stable/43825941

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, *29*(1), 35–57. https://doi.org/10.2307/25148667

Yildiz, H. E., Murtic, A., Zander, U., & Richtnér, A. (2019). What fosters individual-level absorptive capacity in MNCs? An extended motivation–ability–opportunity framework. *Management International Review*, *59*(1), 93–129. https://doi.org/10.1007/s11575-018-0367-x

Zaichkowsky, J. L. (1985). Measuring the involvement construct. *Journal of Consumer Research*, *12*(3), 341–352. https://doi.org/10.1086/208520

Zalesny, M. D., & Ford, J. K. (1990). Extending the social information processing perspective: New links to attitudes, behaviors, and perceptions. *Organizational Behavior and Human Decision Processes*, *47*(2), 205–246. https://doi.org/10.1016/0749-5978(90)90037-A

Zambrano, J., Kirschner, F., Sweller, J., & Kirschner, P. A. (2019). Effects of prior knowledge on collaborative and individual learning. *Learning and Instruction*, *63*, 101214. https://doi.org/10.1016/j.learninstruc.2019.05.011

Zhang, P., Jiang, M., Adeel, A., & Yaseen, A. (2018). The effects of social relationships and the justice environment on creative idea endorsement. *IEEE Access*, *6*, 44340–44350. https://doi.org/10.1109/ACCESS.2018.2840099