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RESEARCH ARTICLE OPEN ACCESS

The Influence of Planning and Volition on E-Learning Utilization During Technology Transitions

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Correspondence: Simone Kauffeld (s.kauffeld@tu-braunschweig.de)**Received:** 19 February 2025 | **Revised:** 20 February 2025 | **Accepted:** 26 February 2025**Keywords:** e-learning | motivation to learn | personal capacity for learning | planning to learn | supervisor support | volition to learn

ABSTRACT

The purpose of this study was to identify factors linked with e-learning utilization. This empirical study ($N = 381$) was conducted in partnership with a German bank and measured e-learning utilization as the degree to which participants thoroughly completed an extensive number of automatically provided e-learning courses on new banking software. The results suggest that e-learning utilization is influenced by the workplace context in which e-learning takes place (supervisor support, personal capacity for learning), the planning of the learning process, and a learner's volition to learn. Planning the e-learning process mitigated an unfavourable learning environment in terms of limited time resources for learning to some extent.

1 | Introduction

Modern organizations make significant investments in employee training and development to increase individual job performance and overall organizational success (Freifeld 2023; Kauffeld et al. 2025; Noe 2023). As a result, previous research efforts in the field of training and development focused on two primary questions: (1) What conditions allow for learning to occur during training? (2) Under what conditions do training participants transfer new knowledge and skills back into the workplace? These research efforts revealed that in traditional classroom training, a broad range of trainee (e.g., ability, motivation), training (e.g., training content, training design), and work environment factors (e.g., support, opportunities to apply learning) impacted learning and subsequent training transfer (e.g., Baldwin and Ford 1988; Ford et al. 2018; Holton III et al. 2000; Kauffeld et al. 2008; Noe 2023). However, alongside traditional classroom training, workplace self-paced e-learning has become a popular delivery method for corporate learning in recent decades (Beinicke and Bipp 2018; Decius et al. 2024; Freifeld 2023; Quesada-Pallarès et al. 2022). Key benefits of workplace self-paced e-learning over traditional classroom training include cost savings and a great degree of

flexibility in terms of time, place, and pace of learning (Noe 2023). Yet attrition rates not found in traditional classroom training indicate that workplace self-paced e-learning places high demands on the learners already during the learning phase (Kashive et al. 2021; Lee et al. 2021; Long et al. 2009). While traditional classroom training is instructed by trainers and takes place at designated times and locations, e-learning participants must begin, monitor, and maintain their learning efforts largely on their own (Chau 2018; Schmidt and Koch 2022). If learners do not engage in e-learning at all or do not thoroughly process the e-learning content provided, neither learning nor transfer success can be achieved (Sitzmann and Weinhardt 2019). Despite the increasing usage of workplace self-paced e-learning in modern enterprises, the factors influencing the e-learning process within an organizational context are still little understood (Lee et al. 2021; Chau 2018). To address this gap in the literature, the current study applied the framework of Baldwin and Ford (1988), the Rubicon model of action phases (Heckhausen and Gollwitzer 1987; Achtziger and Gollwitzer 2018), and influential models of self-regulated learning (Pintrich 2000; Zimmerman and Moylan 2009) to the learning phase of workplace self-paced e-learning. In particular, this study investigated factors associated with e-learning

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utilization as a prerequisite for both learning and learning transfer (Sitzmann and Weinhardt 2019). E-learning utilization was measured as the degree to which participants thoroughly completed a considerable amount of provided e-learning courses on the use of banking software. Drawing on the above-mentioned theories, we hypothesized that individual motivational and volitional variables, e-learning design, and work environment characteristics explain e-learning utilization.

2 | Theoretical Background and State of Research

Motivation has been recognized as a vital component both during the learning and the transfer phase of corporate learning (e.g., Chung et al. 2022; De Jong et al. 2023; Gegenfurtner et al. 2009). For the learning phase of workplace self-paced e-learning, motivation to learn predicted use and completion of e-learning (Chau 2018; Chen and Kao 2012; Garavan et al. 2010), learner satisfaction (Chau 2018; Chen and Kao 2012), and learning outcomes (Chau 2018; Lim et al. 2007). However, beyond initial motivation, both influential self-regulated learning models (Pintrich 2000; Zimmerman and Moylan 2009) and the Rubicon model of action phases (Heckhausen and Gollwitzer 1987; Achtziger and Gollwitzer 2018) suggest that learners might benefit from planning e-learning activities and the use of volitional action regulation to thoroughly complete an extensive e-learning programme. The Rubicon model of action phases (see Figure 1) described goal realization as a multi-step process that begins with a person's wishes or aspirations and concludes with an evaluation of the achieved outcome. The Rubicon model's title is a metaphor for the formulation of intentions (in the form of a binding goal) at the end of the first motivational phase of deliberation (e.g., to complete all provided e-learning courses thoroughly to be well prepared for an upcoming IT transition). To put articulated intentions into action, individuals must subsequently develop plans that appear to be favourable to goal achievement (planning phase). The prepared plans must subsequently be put into effect. These efforts are best promoted by a steadfast pursuit of the objective and increased efforts in the face of adversity (action phase). Finally, individuals must assess whether their objectives were met satisfactorily. If this is not the case, the objectives, plans,

and/or effort spent must be adjusted (evaluation phase; Achtziger and Gollwitzer 2018). Similarly, the cyclical phase model of self-regulated learning (Zimmerman and Moylan 2009) breaks down the learning process into three stages. The first phase, foresight, involves learners analysing the task, setting goals, and planning strategies to reach the learning goal. Motivational beliefs, such as self-efficacy or outcome expectations, serve as the driving force. In the second phase, performance, learners complete the learning tasks, monitor their own learning process, and employ a variety of self-control strategies to remain engaged with the learning task. The third phase, self-reflection, involves the learners assessing their accomplishment and making attributions about success or failure. These attributions in turn are assumed to influence succeeding learning cycles.

Regarding the planning of the e-learning process, a meta-analysis of self-regulated learning techniques discovered a link between time management and academic accomplishment in academic e-learning (Broadbent and Poon 2015). However, how planning and time management effect e-learning in the workplace is still largely unknown. The first research demonstrates that planning and scheduling e-learning sessions may improve e-learning success in a business setting. In a study on e-learning in Hong Kong-based companies, Chau (2018) defined time management as 'the ability of a learner to manage his or her time for workplace self-paced e-learning through scheduling, planning, and ensuring effective use of the learning time' (Chau 2018, 345). Time management was associated with higher e-learning completion rates and greater learner satisfaction.

Even with initial motivation to learn and careful planning of the learning process, difficulties are likely to develop during e-learning. For example, because e-learning is technology-based, technical issues may arise when accessing and processing learning content. Furthermore, workplace self-paced e-learning is an inherently autonomous and lonely activity. This means that learners must first solve understanding challenges on their own, which may involve revisiting the learning material or contacting additional sources. Even if the e-learning platform allows you to communicate with instructors or peers,

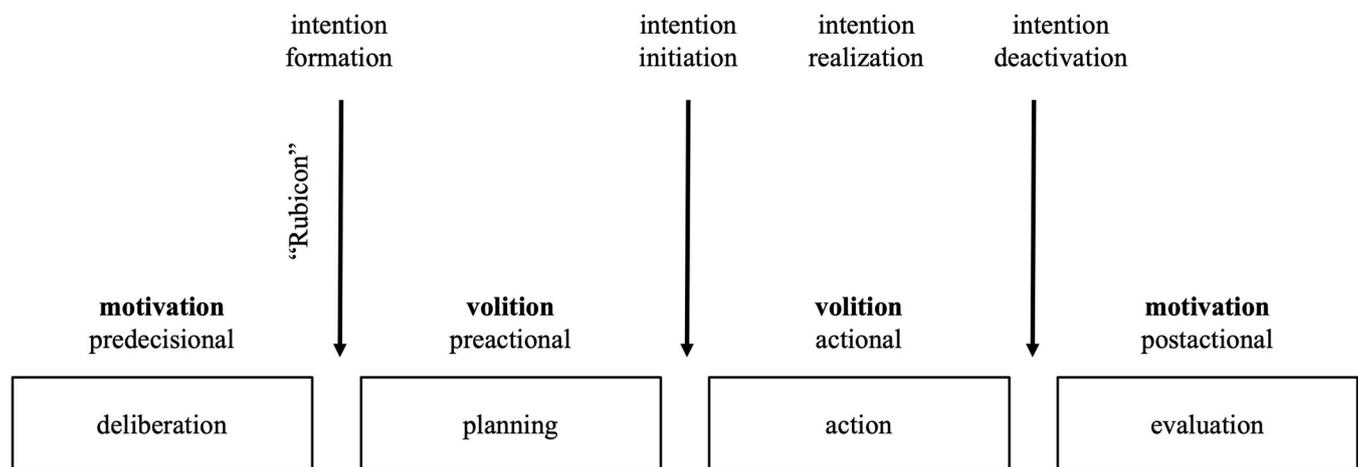


FIGURE 1 | The Rubicon model of action phases (Heckhausen and Gollwitzer 1987; Achtziger and Gollwitzer 2018). Used with permission of Springer Nature BV, from Motivation and Action, Chapter 12, Motivation and Volition in the Course of Action, Achtziger and Gollwitzer 2018; permission conveyed through Copyright Clearance Center Inc.

this usually occurs with a delay. To overcome these and other challenges in the e-learning process, a trainee's capability of maintaining attention and effort toward learning activities despite possible distractions or setbacks (Seiberling and Kauffeld 2017), may be critical to achieving the set learning objectives. Volitional strategies such as self-consequences (i.e., establishing rewarding or punishing consequences for oneself) and environmental structuring (i.e., making the immediate learning environment more effective for learning) are key components of Zimmerman's cyclical phases model of self-regulated learning (Zimmerman and Moylan 2009). Similarly, Pintrich (2000) identified management of motivation, affect, and effort as critical to self-regulated learning. In academic e-learning effort regulation (i.e., the ability to persist when presented with academic hurdles) has been linked to academic accomplishment (Broadbent and Poon 2015). However, empirical support from the setting of workplace self-paced e-learning remains scarce. Therefore, a first aim of this study was to examine whether planning and volition explain additional variance in e-learning utilization beyond motivation to learn.

H1: *Planning to learn explains additional variance in e-learning utilization when motivation to learn has already been accounted for.*

H2: *Volition to learn explains additional variance in e-learning utilization when motivation to learn and planning to learn have already been accounted for.*

2.1 | Motivation, Planning, and Volition as Mediators Within the E-Learning Process

The influential framework presented by Baldwin and Ford (1988) assumed that, in addition to trainee characteristics such as motivation and volition, training design and work environment characteristics influence both learning and transfer of learning. For the transfer phase of training, a valid and generalizable set of transfer system scales encompassing these trainee, training, and work environment characteristics was developed (learning transfer system inventory [LTSI]; Holton III et al. 2000; Kauffeld et al. 2008; Kauffeld et al. 2025; Massenberg et al. 2017). As training transfer attempts and workplace self-paced e-learning are both undertaken directly at the workplace, similar work environment characteristics such as supervisor support and personal capacity in terms of sufficient time for learning or transfer might be relevant both during the learning phase of workplace self-paced e-learning and the training transfer phase (Holton III et al. 2000; Tynjälä 2013). Similarly, well-designed e-learning courses in terms of transfer design (i.e., training design that supports training transfer by providing realistic practice opportunities and other transfer-enhancing activities) might be beneficial both during the learning phase of e-learning and the transfer phase of training. Hence, a further aim of this study was to identify whether exemplary work environment and training design factors derived from the LTSI (i.e., supervisor support, personal capacity for learning, transfer design) play a role during the learning phase of workplace self-paced e-learning.

Supervisor support in terms of being informed about the specific training objectives and holding trainees accountable for training transfer facilitated training transfer in a broad range of training scenarios (Govaerts et al. 2018). Transfer supporting supervisor behaviours seem to promote training transfer through motivation to transfer and volition to transfer (Massenberg and Kauffeld 2015; Seiberling and Kauffeld 2017; Richter and Kauffeld 2020). Viewing motivation and volition to transfer as mediating variables in the transfer process acknowledges that supervisors do not change their employees' behaviour in a direct way. Instead, training transfer is influenced indirectly through increased motivation and volition. In the context of workplace self-paced e-learning, the influence of perceived barriers and enablers (i.e., time restrictions, supervisor support) on e-learning participation was mediated by self-efficacy and motivation to learn (Garavan et al. 2010). Accordingly, a recent meta-analysis found that motivation to learn mediated relationships between a wide range of individual and organizational variables and learning outcomes. Organizational climate variables that were positively correlated with motivation to learn included manager support, peer support, organizational support, and a continuous learning culture (Chung et al. 2022). Thus, supervisors may impact e-learning utilization by enhancing the learning motivation of their team members. Leadership behaviours that potentially have a positive impact on motivation to learn during the learning phase of workplace self-paced e-learning include providing information about available e-learning courses, emphasizing the benefits of an e-learning course for both participants and the team, demonstrating interest in the learning progress, assisting as needed, and recognizing the completion of learning tasks.

H3: *Perceived supervisor support is positively related to motivation to learn.*

In addition to supervisor support, personal capacity for learning might be a second relevant variable of the work environment that affects e-learning utilization through motivation to learn. For the transfer stage of training personal capacity was defined as 'the extent to which individuals have the time, energy, and mental space in their work lives to make changes required to transfer learning on the job' (Holton III et al. 2000, 344). Subsequent research found personal capacity to have a positive impact on the training transfer process (e.g., Gara Bach Ouerdian 2025; Kirwan and Birchall 2006; Muthoni and Miiro 2017). As workplace self-paced e-learning is undertaken directly at the workplace or during work hours at the home office, the extent to which individuals have the time, energy, and mental space in their work lives for learning likely impacts e-learning utilization. Although a direct impact of personal capacity for learning on e-learning utilization can be assumed (Luor et al. 2009; Sitzmann and Weinhardt 2019), perceived personal capacity for learning might also impact e-learning utilization through motivation to learn. Perceiving the immediate work environment as conducive to learning might increase a participant's motivation to learn, while perceived time restrictions for learning might have a negative impact on learning motivation. Accordingly, prior research found that the influence of perceived barriers and enablers (including time restrictions) on e-learning participation was mediated by self-efficacy and motivation to learn (Garavan et al. 2010).

H4: *Personal capacity for learning is positively related to motivation to learn.*

Furthermore, supervisor support and personal capacity for learning are likely strongly related. For the transfer stage of training, participants reported higher levels of supervisor support and personal capacity for transfer if training participation was initiated by the supervisor (Kauffeld et al. 2008). Accordingly, manager support was found to impact personal capacity as a prerequisite for training transfer (Kirwan and Birchall 2006). During the learning phase of workplace self-paced e-learning, the learner's immediate supervisor has direct influence on the workplace learning conditions. The supervisor can foster personal capacity for learning by making time for learning, for example, by prioritizing e-learning activities over other activities. The supervisor may also guarantee an undisturbed study environment or permit studying at the home office.

H5: *Supervisor support is positively related to personal capacity for learning.*

Besides the organizational environment, e-learning design factors have proven to be critical to e-learning success. A common theme in various IT system success models is that system quality (e.g., perceived usefulness, perceived ease of use, information quality) influences system use via motivational variables such as intention to use (e.g., Davis et al. 1989; DeLone and McLean 2003). The technology acceptance model (Davis et al. 1989), with its four central components of perceived ease of use, perceived usefulness, attitude toward use, and intention to use, was widely and successfully used to predict e-learning use. For example, in a study on e-learning in Taiwan's financial sector, the effects of e-learning design characteristics (content quality, system response, system interactivity, and system functionality) on actual e-learning use were mediated by motivational and attitudinal variables (perceived usefulness, perceived ease of use, perceived enjoyment, attitude towards use, intention to use) (Cheng 2011). In corporate classroom training, training design in terms of content validity (i.e., training contents that match job requirements) and transfer design (i.e., training design that supports training transfer by providing realistic practice opportunities and other transfer-enhancing activities) has been shown to be critical for training success. While content quality has been studied in the context of workplace self-paced e-learning (e.g., Chen and Kao 2012; Garavan et al. 2010; Lee et al. 2021; Lim et al. 2007), transfer design has gotten less study attention. Several studies in the realm of corporate classroom training have demonstrated that transfer design influences training transfer through motivation to transfer (e.g., Awais Bhatti et al. 2014; Grohmann et al. 2014). As motivation to learn and motivation to transfer are associated (e.g., Gegenfurtner et al. 2009), incorporating transfer-enhancing activities into e-learning programmes may not only raise the likelihood of successful e-learning transfer but also increase motivation to learn throughout the learning stage.

H6: *Perceived e-learning quality in terms of transfer design is positively related to motivation to learn.*

However, one major implication of the Rubicon model of action phases (Heckhausen and Gollwitzer 1987; Achtziger and

Gollwitzer 2018) is that motivation alone is insufficient for goal achievement. Beyond initial motivation, the Rubicon model suggests that planning and volition serve as mediators in the action process. To achieve a set goal, concrete steps for accomplishing the desired goal should be planned (planning phase). After developing goal conducive plans, individuals must undertake goal-oriented behaviours and focus on achieving their goals. These efforts are best supported by persistent goal pursuit, increasing efforts in the face of adversity, and returning to goal-oriented acts after each interruption (action phase) (Achtziger and Gollwitzer 2018). Similarly, influential self-regulated learning models described a mediating function of planning and volition in the learning process (Pintrich 2000; Zimmerman and Moylan 2009). The transfer of these models to the context of workplace self-paced e-learning suggests that (1) motivated learners are more likely to plan their learning process, (2) learners with a clear plan for the learning phase are more likely to use volitional action regulation in response to distractions or setbacks, and ultimately, (3) the use of volitional action control during the learning phase impacts e-learning utilization positively.

H7: *Motivation to learn is positively related to planning to learn.*

H8: *Planning to learn is positively related to volition to learn.*

H9: *Volition to learn is positively related to e-learning utilization.*

2.2 | Compensating an Unfavourable Work Environment to E-Learning

While the Rubicon model and self-regulated learning models imply that planning generally mediates the learning process, planning may act as a moderator when dealing with time constraints for learning. As the fundamental goal of a workplace is to provide goods and services (rather than to study), workplace self-paced e-learning is prone to being postponed or interrupted by more urgent requests (Chau 2018). Hence, previous research found that even highly motivated learners did not engage in e-learning activities due to time constraints (Luor et al. 2009). In dealing with such time constraints, learners might benefit from planning their learning activities. Motivational research has shown that even simple plans in the form of implementation intentions (i.e., If-then plans; if X happens, then I am going to perform behaviour Y) support goal realization in a broad range of intended human behaviours. Defining precise settings or conditions in which a particular behaviour is demonstrated helps individuals discover appropriate situations and ultimately act because the intended behaviour is already cognitively linked to the situational cue (Achtziger and Gollwitzer 2018; Sheeran et al. 2024). In the context of workplace self-paced e-learning, Chau (2018) discovered that workload moderated the relationship between time management and completion rates at a 10% level of significance. In this study, the association between time management and completion rates was stronger in low workload settings. Chau (2018, 225) provided the following interpretation of the results: 'At a lower level of workload, employee learners should be able to find

some free time to learn. Hence, use of a time management strategy may help employee learners juggle the work and learning tasks, resulting in relatively higher WSPEL [workplace self-paced e-learning] completion. When the level of workload is high, however, employees have to work at a relatively faster pace and should have less free time available. Under such time pressures and because work is always the priority, a time management strategy will be less effective in helping the employees juggle between the work and learning tasks.' However, it is worthwhile to attempt to reproduce these findings because the effect of planning on the link between workload and e-learning completion may be more complex. Under low workload conditions, learners may be able to complete their e-learning activities without or with little planning effort in addition to their usual tasks. In other words, in low workload scenarios, learners who precisely plan their e-learning activities, as well as learners who do little or no planning, should be able to finish their assigned e-learning courses. As a result, in low workload settings, planning may not have a significant impact on e-learning utilization. In contrast, in situations with a medium to high workload, planning may be beneficial. In medium to high workload situations, learners who devote time slots to learning by planning and scheduling their e-learning activities should achieve higher e-learning utilization rates than those who do not actively plan their learning process. Finally, in very or extremely high workload situations, planning may become less relevant, as e-learning activities are likely to be postponed in favour of more urgent duties, whether scheduled or unplanned. As a result, the final aim of this study was to explore whether planning to learn compensates to some extent for a lack of time resources available for e-learning.

H10: *Personal capacity for learning is positively related to e-learning utilization.*

H11: *Planning compensates for a lack of time resources to utilize e-learning.*

3 | Materials and Methods

3.1 | Sample and Procedure

After a merger, a German bank provided a comprehensive blended learning curriculum to prepare its employees for a substantial IT transition. The curriculum was adapted to the

specific function within the new organization, such as account manager for private customers, account manager for commercial customers, or credit specialist. The programme was mostly made of e-learning courses aimed to provide instructions on how to perform typical work tasks within the new IT systems. Aside from the e-learning courses, participants received course materials and/or classroom training sessions based on the unique requirements of their assigned function. For example, the blended learning programme created for account managers in wealth management was given a total of 36 h to learn. Out of the entire 36 learning hours allotted, 28 h (78%) were set aside to complete 13 e-learning courses, while 8 h were set aside for a single preparation session in a traditional classroom format (22%). One month after the IT changeover, a digital survey was given to a randomly selected set of bank employees to assess the effectiveness of the blended learning programme. Participation in the survey was optional. There were no promises of rewards for participation, participants were allowed to withdraw at any time, and they were guaranteed anonymity.

The blended learning programme enrolled approximately 7000 salespeople. A stratified sample of 1000 employees from the target group was chosen to complete the online questionnaire. The sample was stratified based on the preceding and target functions, as the programme's scope was decided by this combination. Participants were recruited at random from each stratum. Of the 1000 online questionnaires distributed, 386 were returned. The four questionnaires related to the service function were eliminated after data collecting but before data analysis. To safeguard participant confidentiality, the participating company's works council determined that strata with fewer than five completed questionnaires would not be evaluated. Conducting a χ^2 test revealed a significant difference in response rates amongst the remaining eight strata ($\chi^2 [7, N = 968] = 21.51, p < 0.01$). The response rates of credit specialists were over 50%, however, just 25% of former junior account managers private customers participated in the survey. Regarding the seven variables of this study (see Table 1), no statistically significant differences were seen among the remaining eight strata in subsequent ANOVA analyses. One participant did not answer any of the questions related to the e-learning section of the questionnaire, resulting in 381 data records usable for further statistical analyses.

The survey participants were 45.4% male and 54.3% female. In terms of age, 13.1% were 30 or younger, 29.1% were

TABLE 1 | Means, standard deviations, and correlations among study variables.

Variable	M	SD	ELU	LMOT	PLAN	LVOL	LSSUP	LCAP	DESG
1. E-learning utilization (ELU)	4.06	1.04	(0.71)						
2. Motivation to learn (LMOT)	3.43	0.89	0.15**	(0.79)					
3. Planning (PLAN)	3.11	1.20	0.41**	0.21**	(0.82)				
4. Volition to learn (LVOL)	4.30	0.70	0.54**	0.37**	0.35**	(0.70)			
5. Supervisor support (LSSUP)	3.25	1.13	0.36**	0.21**	0.50**	0.30**	(0.86)		
6. Personal capacity for learning (LCAP)	2.51	1.16	0.40**	0.13*	0.60**	0.25**	0.55**	(0.86)	
7. Transfer design (DESG)	2.84	0.84	0.17**	0.34**	0.23**	0.18**	0.29**	0.30**	(0.83)

Note: Values from 1 (strongly disagree) to 5 (strongly agree). Cronbach's α values listed in parentheses. * $p \leq 0.05$; ** $p \leq 0.01$ (two-tailed).

31–40 years old, 36.0% were 41–50 years old, and 21.3% were older than 50. A total of 49.2% of the participants had completed vocational training in the field of banking, while 21.5% had taken additional evening courses in business administration. Furthermore, 27.0% of respondents held an (additional) university degree. 1.8% of respondents reported having a vocational training background that differed from the subject of business administration.

Hierarchical linear regression (HLR) was used to test whether planning to learn and volition to learn explained additional variance to motivation to learn in e-learning utilization (H1, H2). HLR was performed using SPSS Version 29. Missing data on the item level ranged from 0.8% to 1.8% and was missing completely at random (Little test: $\chi^2 = 217.958$, $df = 247$, $p = 0.908$). For the regression models, scales were calculated as the mean of all available items. The regression models were then computed using listwise deletion which resulted in the exclusion of the four cases who showed high individual levels of missing data (> 20%). Mplus 8.11 was used to compute the structural equation models (H3–H11). H11 (planning compensates for a lack of time resources to utilize e-learning) required the test of a latent moderator effect. Mplus does not offer traditional fit indices for assessing the overall model fit when estimating latent moderated structural equation models since the non-linear effects of a latent interaction model induce biases to the chi-square value (and other fit indices derived from the chi-square value). Hence, the four steps outlined by Cheung et al. (2021) were followed (i.e., testing measurement model fit in step 1, obtaining fit values for the model without moderator in step 2, testing improved fit after including the moderator in step 3, interpreting a significant moderator effect in step 4). As certain indicators diverged from the normal distribution, we used maximum likelihood with robust standard errors (MLR) estimation. In Mplus full information, maximum likelihood estimation was used for missing data.

3.2 | Measures

Scales used in this study included e-learning utilization, motivation to learn, planning to learn, volition to learn, supervisor support, personal capacity for learning, and transfer design. The questionnaires used a five-point Likert scale with responses ranging from ‘strongly disagree’ to ‘strongly agree.’ Table 1 shows the means, standard deviations, Cronbach’s α , and correlations between the study’s variables.

The e-learning utilization scale assessed the degree to which participants thoroughly completed an extensive number of automatically provided e-learning courses and consisted of the following two items: ‘I have completed all e-learning courses planned for my learning path up to the system changeover.’ and ‘I worked through all the e-learning courses thoroughly.’ The e-learning utilization scale showed an acceptable Cronbach’s α value of 0.71.

Motivation to learn has been conceptualized as a trainee’s desire to learn the specific content of a training programme (Noe 1986). The three-item motivation to learn scale exhibited an acceptable Cronbach’s α value of 0.79, employing similar wording as the motivation to transfer scale of the GLTSI (Kauffeld et al. 2008; exemplary item: ‘I was motivated when I thought about what I can learn in the learning courses.’; full scale see Table 2).

The three-item planning to learn scale was used to examine how much learners proactively planned their learning process and set aside certain time intervals to complete e-learning assignments (exemplary item: ‘I have scheduled the completion of the individual learning courses in my weekly schedule.’; full scale see Table 2). 0.82 was a good Cronbach’s α value for the planning to learn scale. Volition to learn was earlier defined as a trainee’s capability of maintaining attention and effort towards learning

TABLE 2 | Confirmatory factor analysis of 3-factor model motivation to learn, planning to learn, and volition to learn.

Scale	Item	Standardized factor loadings
Motivation to learn	I was motivated when I thought about what I can learn in the learning courses.	0.791
	I could hardly wait to take part in the learning courses and learn a lot.	0.815
	I believed that the learning courses would help me to acquire new knowledge.	0.651
Planning to learn	I have scheduled the completion of the individual learning courses in my weekly schedule.	0.761
	For each individual learning course, I knew when to work on it.	0.812
	I had a precise learning plan for completing the learning courses.	0.767
Volition to learn	Although it is difficult to complete all learning courses, I have tried everything to succeed.	0.654
	I was determined to complete all learning courses.	0.711
	I was determined to complete the learning program, even if I had to overcome resistance.	0.611

Note: $N = 379$. Three-factor model provided acceptable data fit ($\chi^2/df = 55.445/24 = 2.310$; RMSEA = 0.059; CFI = 0.963; SRMR = 0.040). All factor loadings significant at $p < 0.001$.

activities despite possible distractions or setbacks (Seiberling and Kauffeld 2017). The three-item volition to learn scale consisted of the following items: ‘Although it is difficult to complete all learning courses, I have tried everything to succeed.’, ‘I was determined to complete all learning courses.’, and ‘I was determined to complete the learning program, even if I had to overcome resistance.’. The Cronbach’s α value of the three-item volition to learn measure was 0.695. The data was used for further analysis since the volition to learn scale’s computed Cronbach’s α was only slightly below 0.7. However, it is recommended that future research endeavours optimize the volition to learn scale through the testing of supplementary items (e.g., setbacks spur me on to exert further learning efforts). To validate the suggested three-factor structure for motivation to learn, planning to learn, and volition to learn, a confirmatory factor analysis was conducted. The three-factor model of motivation, planning, and volition to learn provided acceptable data fit ($N = 379$; $\chi^2/df = 55.445/24 = 2.310$; RMSEA = 0.059; CFI = 0.963; SRMR = 0.040). All standardized factor loadings were significant ($p < 0.001$) and varied from 0.611 to 0.815 (see Table 2). A four-factor model that additionally included the dependent variable e-learning utilization also showed an acceptable data fit ($N = 381$; $\chi^2/df = 91.828/38 = 2.417$; RMSEA = 0.061; CFI = 0.951; SRMR = 0.048). As volition to learn and e-learning utilization were highly correlated (0.789) in the four-factor model, a third CFA was computed for motivation to learn, planning to learn, and a common factor for the three volition to learn and the two e-learning utilization items. However, this model yielded a poor data fit ($N = 381$; $\chi^2/df = 127.675/41 = 3.114$; RMSEA = 0.074; CFI = 0.921; SRMR = 0.061) indicating that motivation to learn, planning to learn, volition to learn, and e-learning utilization represented distinct constructs.

The scales for supervisor support, personal capacity for learning, and transfer design were adapted from the GLTSI (Kauffeld et al. 2008) and consisted of three items each. The supervisor support scale (exemplary item: ‘My manager appreciates it when I take the time to work on the e-learning material.’), personal capacity for learning scale (exemplary

item: ‘I was given enough time to work on the learning courses.’), and transfer design scale (exemplary item: ‘The e-learning courses used lots of examples that showed me how I could use my learning on the job.’) showed good Cronbach’s α values of 0.86, 0.86 and 0.83 (see Table 1). A table of all scales and items used in this study is provided in the appendix (Table A1).

4 | Results

4.1 | HLR

HLR was carried out in three steps (see Table 3). In step 1, only motivation to learn was entered into the model ($N = 377$). The model was significant ($F[1, 375] = 9.04, p < 0.01$) and had an R^2 value of 0.02. In model 1, motivation to learn significantly predicted e-learning utilization ($\beta = 0.15, p < 0.01$).

Step 2 of the regression analysis included planning to learn in the model. R^2 significantly increased by 0.15 ($\Delta F[1, 374] = 67.06, p < 0.001$). The second model found that planning to learn was a significant predictor of e-learning utilization ($\beta = 0.39, p < 0.001$), whereas motivation to learn was not ($\beta = 0.07, p = 0.143$). Nonetheless, H1 (planning to learn explains additional variance in e-learning utilization when motivation to learn has already been accounted for) was confirmed.

Step 3 involved adding volition to learn to the regression model. R^2 increased by an additional 0.17 ($\Delta F[1, 373] = 99.40, p < 0.001$). In total, model 3 explained 34% of the variance in e-learning utilization. Planning to learn ($\beta = 0.26, p < 0.001$) and volition to learn ($\beta = 0.47, p < 0.001$) were both significant predictors of e-learning utilization, while, as in model 2, motivation to learn was not ($\beta = -0.07, p = 0.110$). Nonetheless, H2 (volition to learn explains additional variance in e-learning utilization when motivation to learn and planning to learn have already been accounted for) was supported.

TABLE 3 | Hierarchical linear regression on e-learning utilization.

Variable	ΔR^2	<i>B</i>	<i>SE_B</i>	β	<i>t</i>	<i>p</i>
<i>Model 1</i>	0.02					< 0.01
Intercept		4.06	0.05		76.59	< 0.001
Motivation to learn		0.18	0.06	0.15	3.01	< 0.01
<i>Model 2</i>	0.15					< 0.001
Intercept		4.06	0.05		83.02	< 0.001
Motivation to learn		0.08	0.06	0.07	1.47	=0.143
Planning to learn		0.34	0.04	0.39	8.19	< 0.001
<i>Model 3</i>	0.17					< 0.001
Intercept		4.06	0.04		93.31	< 0.001
Motivation to learn		-0.08	0.05	-0.07	-1.60	=0.110
Planning to learn		0.22	0.04	0.26	5.73	< 0.001
Volition to learn		0.70	0.07	0.47	9.97	< 0.001

Note: $N = 377$. Total $R^2 = 0.34$ ($F[3, 373] = 65.84, p < 0.001$) (model 3).

Assumptions check: maximum VIF = 1.272, Durbin Watson statistic = 1.333, maximum Cook’s distance = 0.084, mean standardized residuals = 0.000, SD standardized residuals = 0.996, visual inspection indicated homoscedasticity and linear relationships of dependent and independent variables.

4.2 | Structural Equation Modelling (SEM)

In the first step, the measurement model of the seven latent variables supervisor support, personal capacity for learning, transfer design, motivation to learn, planning to learn, volition to learn, and e-learning utilization was tested. The measurement model showed an acceptable data fit ($N = 381$; $\chi^2/df = 314.557/149 = 2.111$; RMSEA = 0.054; CFI = 0.945; SRMR = 0.045). Model correlations among the observed and latent variables ranged from 0.587 to 0.916 and were all significant at $p < 0.001$.

In Step 2, fit values for the full mediation model without the moderator term for personal capacity for learning \times planning to learn were obtained (i.e., a model in accordance with Figure 2 without H11) as Mplus does not offer traditional fit indices for assessing the overall model fit when estimating latent moderated structural equation models (Cheung et al. 2021). However, this full mediation model without moderator fitted the data poorly ($N = 381$; $\chi^2/df = 547.347/161 = 3.400$; RMSEA = 0.079; CFI = 0.871; SRMR = 0.139). Particularly, the paths from supervisor support to motivation to learn and from personal capacity for learning to motivation to learn were not significant in the full mediation model without moderator (see Table 4). Hence, a partial mediation model without moderator was tested next. This partial mediation model without moderator showed an acceptable data fit ($N = 381$; $\chi^2/df = 314.556/149 = 2.111$; RMSEA = 0.054; CFI = 0.945; SRMR = 0.045; see Table 4).

Step 3 tested whether the partial mediation model with the moderator term personal capacity for learning \times planning to learn had a better data fit than the partial mediation model without this moderator term calculated in step 2. To compare the fit of the two models, a loglikelihood values difference test was performed (Cheung et al. 2021). The significant test statistic (TRd = 6.5643, $\Delta(df) = 1$, $p = 0.0104$) indicated that the partial mediation model with the moderator yielded the best data fit. Hence, the results of the partial mediation model with moderator were used to determine whether the formulated hypotheses were supported or had to be rejected (see Table 4). As shown in Figure 3, supervisor support was positively associated with personal capacity for learning ($\beta = 0.627$, $p < 0.001$;

H5 supported) and planning to learn ($\beta = 0.174$, $p < 0.05$; additional significant path). However, the path from supervisor support to motivation to learn was not significant ($\beta = 0.140$, $p = 0.139$; H3 not supported). Personal capacity for learning was positively associated with planning to learn ($\beta = 0.627$, $p < 0.001$; additional significant path) and e-learning utilization ($\beta = 0.250$, $p < 0.01$; H10 supported). Again, the path from personal capacity for learning to motivation to learn was not significant ($\beta = -0.044$, $p = 0.631$; H4 not supported). Transfer design showed positive associations with motivation to learn ($\beta = 0.383$, $p < 0.001$; H6 supported) and personal capacity for learning ($\beta = 0.112$, $p < 0.05$; additional significant path). While motivation to learn was not positively associated with planning to learn ($\beta = 0.087$, $p = 0.119$; H7 not supported), additional routes from motivation to learn to volition to learn ($\beta = 0.335$, $p < 0.001$; additional significant path) and from motivation to learn directly to e-learning utilization ($\beta = -0.197$, $p < 0.05$; additional significant path) were significant. The paths from planning to learn to volition to learn ($\beta = 0.316$, $p < 0.01$; H8 supported) and from volition to learn to e-learning utilization ($\beta = 0.739$, $p < 0.001$; H9 supported) were significant as hypothesized. Finally, the interaction term personal capacity for learning \times planning to learn was significantly related to e-learning utilization ($\beta = -0.156$, $p < 0.01$).

In Step 4, the significant interaction term personal capacity for learning \times planning to learn was interpreted. Figure 4 revealed that personal capacity for learning was significantly associated with e-learning utilization only at lower levels of planning. In other words, participants with higher levels of planning were significantly less negatively impacted in their e-learning utilization by low personal capacity for learning than those with low levels of planning. Thus, H11 was supported.

5 | Discussion

Drawing on the Rubicon model of action phases (Heckhausen and Gollwitzer 1987; Achtziger and Gollwitzer 2018) and influential self-regulated learning models (Pintrich 2000; Zimmerman and Moylan 2009), motivation to learn, planning to learn, and volition

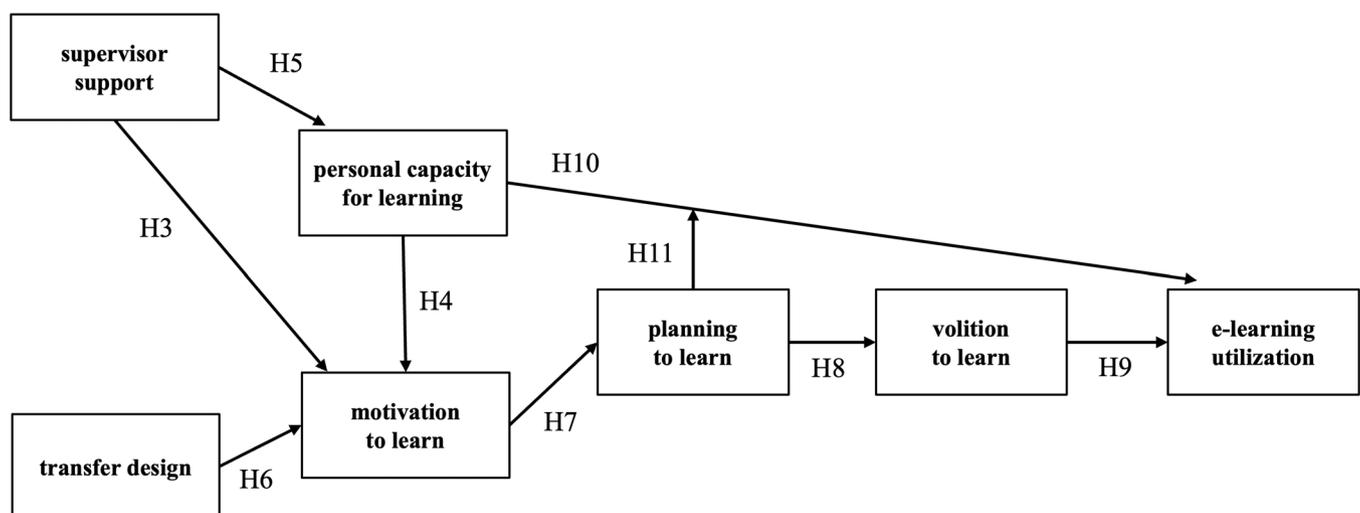


FIGURE 2 | Hypothesized relationships between the study's variables.

TABLE 4 | Structural equation modelling (estimates, standard errors, and two-tailed *p*-values for standardized path coefficients).

Standardized path coefficients	Full mediation model without moderator			Partial mediation model without moderator			Partial mediation model with moderator (Figure 3)			Conclusion
	Estimate	S. E.	<i>p</i> -value	Estimate	S. E.	<i>p</i> -value	Estimate	S. E.	<i>p</i> -value	
Supervisor support with transfer design	0.354	0.057	0.000	0.340	0.058	0.000	0.340	0.058	0.000	
To motivation to learn (LMOT)										
Supervisor support → LMOT	0.142	0.096	0.140	0.136	0.094	0.149	0.140	0.094	0.139	H3 not supported
Personal capacity for learning → LMOT	0.008	0.096	0.935	-0.038	0.091	0.673	-0.044	0.092	0.631	H4 not supported
Transfer design → LMOT	0.374	0.071	0.000	0.383	0.071	0.000	0.383	0.071	0.000	H6 supported
To personal capacity for learning (LCAP)										
Supervisor support → LCAP	0.673	0.040	0.000	0.625	0.048	0.000	0.627	0.048	0.000	H5 supported
Transfer design → LCAP				0.113	0.055	0.040	0.112	0.055	0.042	Additional significant path
To planning to learn (PLAN)										
Motivation to learn → PLAN	0.314	0.076	0.000	0.090	0.056	0.108	0.087	0.056	0.119	H7 not supported
Supervisor support → PLAN				0.170	0.074	0.022	0.174	0.075	0.020	Additional significant path
Personal capacity for learning → PLAN				0.626	0.064	0.000	0.627	0.064	0.000	Additional significant path
Transfer design → PLAN				0.004	0.060	0.947	0.002	0.060	0.978	
To volition to learn (LVOL)										
Planning to learn → LVOL	0.483	0.055	0.000	0.305	0.108	0.005	0.316	0.110	0.004	H8 supported
Motivation to learn → LVOL				0.335	0.097	0.001	0.335	0.096	0.000	Additional significant path
Supervisor support → LVOL				0.180	0.091	0.048	0.174	0.092	0.057	
Personal capacity for learning → LVOL				-0.051	0.100	0.610	-0.054	0.100	0.586	
Transfer design → LVOL				-0.045	0.070	0.522	-0.045	0.070	0.522	
To e-learning utilization (ELU)										
Volition to learn → ELU	0.755	0.063	0.000	0.756	0.079	0.000	0.739	0.081	0.000	H9 supported
Planning to learn → ELU				0.068	0.105	0.518	0.066	0.109	0.544	
Motivation to learn → ELU				-0.197	0.083	0.017	-0.197	0.080	0.014	Additional significant path
Supervisor support → ELU				0.052	0.090	0.563	-0.002	0.093	0.982	
Personal capacity for learning → ELU	0.269	0.060	0.000	0.166	0.093	0.072	0.250	0.096	0.009	H10 supported
Transfer design → ELU				0.035	0.066	0.598	0.026	0.063	0.680	
Personal capacity for learning x planning to learn → ELU							-0.156	0.056	0.006	H11 supported

Note: S. E. = standard error. Poor data fit of full mediation model without moderator ($\chi^2/df = 547.347/161 = 3.400$; RMSEA = 0.079; CFI = 0.871; SRMR = 0.139); acceptable fit of partial mediation model without moderator ($\chi^2/df = 314.556/149 = 2.111$; RMSEA = 0.054; CFI = 0.945; SRMR = 0.045); loglikelihood values difference test showed improved fit of partial mediation model with moderator over partial mediation model without moderator (TRd = 6.5643, $\Delta df = 1$, $p = 0.0104$).

to learn were used in this study to explain variance in e-learning utilization. In a first regression model, motivation to learn was regressed as a single predictor on e-learning utilization. This regression model accounted for only 2% of the variance in e-learning utilization (see Table 3). In contrast, the model which included planning to learn, volition to learn, and motivation to learn explained 34% of the variance in e-learning utilization.

Hence, unlike planning to learn and volition to learn, motivation to learn did not appear to play an important role in the utilization of e-learning in the specific setting of this study (mandatory e-learning courses on banking software). This missing relationship between motivation to learn and e-learning utilization was also observed in the structural equation model (see Figure 3) where a positive association between motivation to learn and volition to

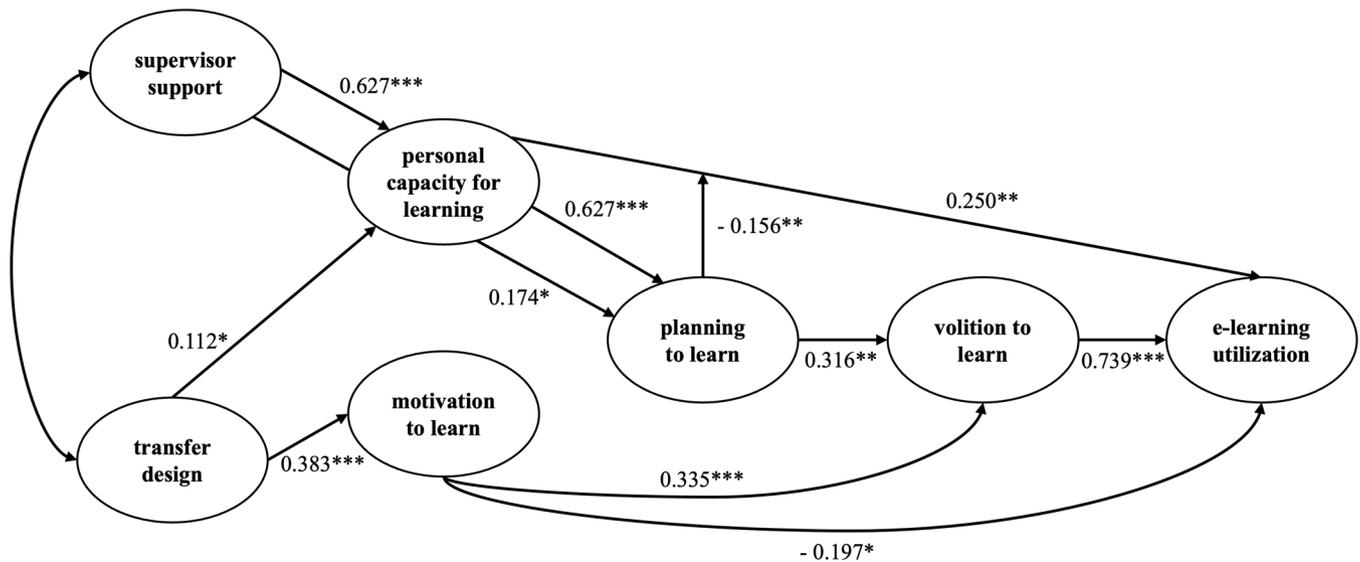


FIGURE 3 | Partial mediation model with moderator personal capacity for learning \times planning to learn. $N = 381$. All path weights are standardized. Non-significant paths omitted for better readability. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

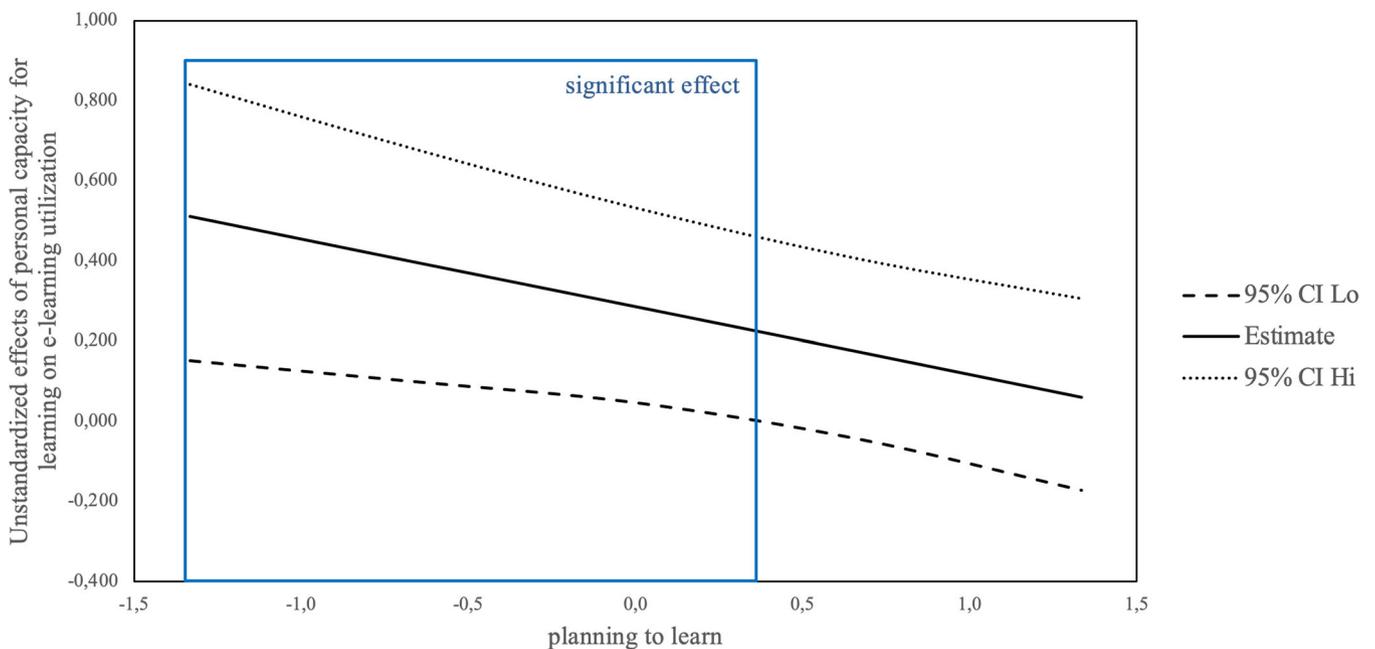


FIGURE 4 | Interaction effect of personal capacity for learning and planning to learn on e-learning utilization. [Color figure can be viewed at wileyonlinelibrary.com]

learn ($\beta = 0.335$, $p < 0.001$) was suppressed by a path with a negative algebraic sign from motivation to learn to e-learning utilization ($\beta = -0.197$, $p < 0.05$). These results were inconsistent with earlier findings. Previous studies on workplace self-paced e-learning found that motivation to learn influenced not only use and completion of e-learning (Chau 2018; Chen and Kao 2012; Garavan et al. 2010) but also learning outcomes (Chau 2018; Lim et al. 2007). These contradictory findings raise the question of potential moderators. The mandatory or voluntary nature of an e-learning course could be one such moderating influence (Curado et al. 2015; Gegenfurtner et al. 2016). If e-learning participation is voluntary, motivation to learn might play a more prominent mediating role in the learning process. In mandated e-learning situations, like the one investigated in this study, planning and

volition may be more relevant for individuals to utilize e-learning. Therein, the regression analysis corroborated important concepts from volitional and self-regulated learning theories in the context of workplace self-paced e-learning.

Regarding the influence of personal capacity for learning on e-learning utilization, the results of the partial mediation model with the moderator (see Figure 3) indicated that personal capacity was positively associated with planning to learn which in turn was positively related to volition to learn and, ultimately, e-learning utilization. Simultaneously, the significant interaction term personal capacity for learning \times planning to learn implied that learners with low personal capacity for learning particularly benefited from planning their e-learning

activities. However, personal capacity for learning was not associated with motivation to learn ($\beta = -0.044$, $p = 0.631$). Hence, in the specific research context of this study, personal capacity for learning had a stronger association with activities that take time to complete (i.e., planning and e-learning utilization) than with the participants' motivation to learn. In this regard, personal capacity for learning can cautiously be interpreted as a prerequisite for both the planning and the utilization of workplace self-paced e-learning.

As hypothesized, supervisor support was strongly related to personal capacity for learning ($\beta = 0.627$, $p < 0.001$). Furthermore, supervisors seemed to aid e-learning utilization by fostering planning activities (additional significant path supervisor support to planning to learn, $\beta = 0.174$, $p < 0.05$). This additional finding might be due to the specific organizational setting in which the learning programme was performed. Supervisors in the cooperating bank held weekly planning meetings with their team members to plan sales activities. Supervisors potentially included the planning of e-learning activities into these meetings during the preparation of the IT changeover. However, in contrast to previous research findings, the path from supervisor support to motivation to learn ($\beta = 0.140$, $p = 0.139$) was not significant. A post hoc power analysis revealed a power of only 0.363 for this path. Although a larger data set of $N = 1000$ would have increased power to 0.774, the relationship between supervisor support and motivation to learn was lower than expected. In a recent meta-analysis, a corrected mean correlation of 0.35 between supervisor support and motivation to learn was reported (Chung et al. 2022). The relationship between supervisor support and motivation to learn could be moderated by the type of e-learning content. For the transfer phase, a mediated effect of supervisor support on training transfer via motivation to transfer was only found for soft skill and not for hard skill trainings (Massenberg and Kauffeld 2015). Hence, the missing link between supervisor support and motivation to learn could be related to the hard skill content of this study (i.e., business processes within a banking software) where supervisor support could be less relevant compared to other support variables such as peer support.

Finally, transfer design (i.e., an e-learning design that promotes learning transfer by providing realistic practice opportunities and other transfer-enhancing activities) was positively associated with motivation to learn as hypothesized ($\beta = 0.383$, $p < 0.001$). However, motivation to learn was neither related to planning to learn ($\beta = 0.087$, $p = 0.119$) nor to the utilization of e-learning in the specific organizational setting of this study. A further unexpected finding of this study was that transfer design was positively related to personal capacity for learning ($\beta = 0.112$, $p < 0.05$). This additional significant path can be cautiously interpreted, in the sense that participants who experience the e-learning exercises as practice-oriented are more likely to make time for learning.

5.1 | Theoretical Implications

In their seminal work, Baldwin and Ford (1988) proposed a systemic view of learning and learning transfer. According to

this influential framework, the learning and learning transfer process is influenced by individual characteristics of the trainee, training design variables, and the organizational work environment. Unlike traditional classroom training, e-learning has the unique property of taking place at the workplace and thus showing attrition rates not found in traditional classroom training (Kashive et al. 2021; Long et al. 2009). As engaging in e-learning activities is a prerequisite for individual learning and transfer success, this study investigated how individual, e-learning design, and work environment variables were associated with e-learning utilization. While previous IT success models prioritized system quality (e.g., Davis et al. 1989; DeLone and McLean 2003; MacDonald et al. 2001), the results of this study indicate that individual self-regulatory variables (i.e., planning to learn and volition to learn) are related to e-learning utilization. Hence, future theories on the usage of workplace self-paced e-learning should consider the extent to which trainees consciously organize their learning process and employ volition to retain attention and effort towards learning activities in the face of potential distractions or setbacks. Such a phase perspective encompassing action regulation beyond initial motivation has already been suggested for the transfer phase of learning (Seiberling and Kauffeld 2017; Quesada-Pallarès and Gegenfurtner 2015; Richter and Kauffeld 2020). Furthermore, future models of workplace self-paced e-learning should take both organizational support and potential organizational learning barriers, such as a low personal capacity for learning, into account. Finally, quality features should also be considered as transfer design was positively related to the participants' motivation to learn in this study. Hence, overall, the results of this study indicate that building theory on e-learning utilization may benefit from adopting the systemic view suggested by Baldwin and Ford (1988) for learning and learning transfer. However, one unexpected finding of this study was that motivation to learn did not play a significant role in the given setting of mandated e-learning on banking software. This finding contradicted previous research findings in which motivation to learn acted as a mediating factor in the participation of workplace self-paced e-learning (Garavan et al. 2010). Thus, the relative impact of motivation to learn, planning to learn, and volition to learn on e-learning utilization, as well as the specific path of mediation, may differ depending on the learning situation. As e-learning participation was mandatory in this study, planning to learn and volition to learn may have been more essential for e-learning utilization than motivation to learn. Thus, when developing a system's view of workplace self-paced e-learning, it should be acknowledged that every learning scenario is linked to a unique organizational learning system (Holton et al. 2003).

5.2 | Practical Implications

Nowadays, workplace self-paced e-learning is being widely employed in organizational training and development (Freifeld 2023). However, low completion rates demonstrated that e-learning is not always effective (e.g., Long et al. 2009; Schmidt and Koch 2022). If learners do not utilize the allocated

e-learning courses, neither learning success nor the desired organizational advantages will occur (Sitzmann and Weinhardt 2019). As a result, companies risk losing significant investments in e-learning design and delivery, if learners are unable or unwilling to use the e-learning courses supplied. In the context of mandated e-learning on new banking software, the findings of this study revealed that learners' planning activities and volition to learn were closely related to the utilization of provided e-learning courses. In this study, higher degrees of planning appeared to compensate an adverse work environment in terms of low time resources for learning to some extent. Furthermore, supervisor support was associated with higher levels of planning and personal capacity for learning (i.e., available time resources for learning). As a result, firms that invest in e-learning programmes should view e-learning as a process that only begins with assigning e-learning courses to employees in a learning management system. Whether provided e-learning courses are used seems to be determined by both individual volitional variables and the learning environment. Companies should thus involve supervisors in the implementation of e-learning initiatives. Supervisors, for example, should ensure sufficient time for learning and encourage planning efforts to guarantee that e-learning programmes succeed. Simultaneously, e-learning designers and HR managers should encourage planning activities and the use of volitional action regulation throughout the e-learning experience.

5.3 | Limitations

Some limiting factors regarding the interpretation and generalization of the found results should be considered. First, a greater response rate would have been preferable as low return rates could result in nonresponse bias. With 381 questionnaires, less than half of the 1000 questionnaires distributed could be included in the statistical analyses. Although the strata did significantly differ in their response rates, they did not show significant differences regarding the variables of interest in this study.

Second, the data for this study was collected from a single e-learning setting within a single firm. Thus, the observed findings may be representative of the banking business and/or mandatory software training. While teaching new software is a common use case for workplace self-paced e-learning (Freifeld 2023), many companies provide e-learning on a voluntary basis. Thus, data collection from multiple e-learning settings in a variety of industries is required to evaluate the generalizability of the results.

Third, the data was entirely self-reported. This seemed suitable despite the known issues (e.g., leniency, self-serving bias) because the primary focus of this study was on the learners' subjective motivational, volitional, and work environment perceptions. Answering the questionnaires was entirely voluntary, and by ensuring anonymity throughout the procedure, the risk of social desirability was reduced. Instead of a questionnaire scale, another method for measuring e-learning utilization would have been to use the processing status recorded in the learning management system. This alternate strategy did not

appear appropriate in the context of this study. For example, in some instances, trainees completed the majority of a team's e-learning courses to meet learning tasks and not 'waste' valuable sales time. Because of these workarounds, the learning management system data did not accurately reflect the e-learning activities of all enrolled employees.

Fourth, the present study investigated only a segment of the complex e-learning process. This study sought to determine how trainee (motivation to learn, planning to learn, volition to learn), workplace (supervisor support, personal capacity for learning), and e-learning design characteristics (transfer design) were associated with e-learning utilization. To gain a better understanding of the motivational and volitional processes within workplace self-paced e-learning, future studies should include additional input (e.g., organizational learning culture, peer support, content validity), process (e.g., time spent working on e-learning material, fostering of additional informal learning activities on the e-learning topic at the workplace), and output factors (e.g., learning success, transfer success) (Decius and Decius 2022; Richter et al. 2020; Tynjälä 2013; Welk et al. 2023).

Finally, the empirical associations observed between supervisor support, personal capacity for learning, transfer design, motivation to learn, planning to learn, volition to learn, and e-learning utilization should be taken with caution as causes and effects. All data was collected at one measurement took place one month after the IT changeover. To derive causal inferences from the structural equation model, supervisor support and transfer design, motivation to learn and personal capacity for learning, planning to learn, volition to learn, and e-learning utilization would have had to be measured at five subsequent measurement time points. However, such a complex procedure was not feasible in the given context of a large business merger. Similarly, the found moderator effect of planning to learn on the relationship between personal capacity for learning and e-learning utilization should be interpreted with caution. The statistical tests were performed by testing the interaction personal capacity for learning \times planning to learn. At the statistical level, it is therefore not possible to clearly determine whether personal capacity or planning to learn was the moderator. Thus, future studies should employ experimental and longitudinal research designs to further validate the findings of this study.

6 | Conclusion

The findings of this study suggest that the utilization of workplace self-paced e-learning is influenced by the workplace context in which e-learning takes place (supervisor support, personal capacity for learning), the planning of the learning process, and a learner's volition to learn. Future research should replicate these findings about the potential role of volitional processes in workplace self-paced e-learning in a wider range of organizational contexts, investigate these volitional processes in greater depth, and develop volitional interventions that can be integrated into both e-learning design and organizational HR development practice.

Acknowledgements

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Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Author wishes not to share data. The data was collected in cooperation with a German banking cooperation that expects confidentiality under all circumstances.

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Appendix A

TABLE A1 | Scales and corresponding items (study ‘The Influence of Planning and Volition on E-Learning Utilization During Technology Transitions’).

Scale (Cronbach's α)	English translation	German item
E-learning utilization (0.71)	I have completed all e-learning courses planned for my learning path up to the system changeover.	Ich habe alle für meinen Lernpfad bis zur System-Umstellung vorgesehenen WBT absolviert.
	I worked through all the e-learning courses thoroughly.	Die WBT der Integrationsqualifizierung habe ich gründlich durchgearbeitet.
Motivation to learn *(0.79)	I was motivated when I thought about what I can learn in the learning courses.	Ich war motiviert, wenn ich daran dachte, was ich alles in der Integrationsqualifizierung lernen kann.
	I could hardly wait to take part in the learning courses and learn a lot.	Ich konnte es kaum erwarten, an der Integrationsqualifizierung teilzunehmen und viel zu lernen.
	I believed that the learning courses would help me to acquire new knowledge.	Ich glaubte, die Integrationsqualifizierung würde mir helfen, neues Wissen zu erwerben.
Planning to learn (0.82)	I have scheduled the completion of the individual learning courses in my weekly schedule.	Die Bearbeitung der einzelnen Maßnahmen habe ich fest in meinen Wochenablauf eingeplant.
	For each individual learning course, I knew when to work on it.	Für jede einzelne Maßnahme wusste ich, wann ich sie bearbeite.
	I had a precise learning plan for completing the learning courses.	Für die Absolvierung der Lernmaßnahmen hatte ich einen genauen Lernplan.
Volition to learn **(0.70)	Although it is difficult to complete all learning courses, I have tried everything to succeed.	Auch wenn es schwierig ist, alle Qualifizierungsmaßnahmen zu absolvieren, habe ich alles versucht, dass es gelingt.
	I was determined to complete all learning courses.	Ich hatte mir fest vorgenommen, die Lernmedien vollständig zu absolvieren.
	I was determined to complete the learning program, even if I had to overcome resistance.	Ich war fest entschlossen, die Lernmedien zu absolvieren, auch wenn ich Widerstände überwinden muss.
Supervisor support *(0.86)	My supervisor appreciates it when I take the time to work on the e-learning material.	Meine Führungskraft schätzt es, wenn ich mir Zeit für die Bearbeitung der Lernmedien nehme.
	Comprehensive preparation for the IT changeover was very important to my supervisor.	Meiner Führungskraft war eine umfassende Vorbereitung auf die Kunden- und Produktmigration sehr wichtig.
	My supervisor shows interest in what I learn in the e-learning courses.	Meine Führungskraft zeigt Interesse an dem, was ich in der Integrationsqualifizierung lerne.
Personal capacity for learning *(0.86)	I had no difficulty finding the time to deal with the content of the learning program.	Ich hatte keine Schwierigkeiten, die Zeit zu finden, mich mit den Inhalten der Integrationsqualifizierung zu befassen.
	I had enough time to work on the learning media.	Für die Bearbeitung der Lernmedien hatte ich ausreichend zeitliche Freiräume.
	I was given enough time to work on the e-learning courses.	Mir wurde genügend Zeit zur Verfügung gestellt, um die Inhalte der Integrationsqualifizierung zu bearbeiten.
Transfer design *(0.83)	The activities and exercises used in the e-learning courses helped me to apply my learning on the job.	Die Aktivitäten und Übungen, die in den WBT benutzt werden, helfen mir, das, was ich gelernt habe, bei der Arbeit anzuwenden.
	The e-learning courses used lots of examples that showed me how I could use my learning on the job.	In den WBT der Integrationsqualifizierung werden viele Beispiele verwendet, die mir zeigen, wie ich das Gelernte bei der Arbeit anwenden könnte.
	The way in which the e-learning courses communicated the contents of the training made me feel more confident to be able to apply the acquired knowledge.	Die Art und Weise, wie in den WBT die Fortbildungsinhalte vermittelt wurden, gibt mir Vertrauen, das Gelernte auch anzuwenden.

Note: * Adapted from the German learning transfer system inventory (Kauffeld et al. 2008). ** Adapted from Seiberling and Kauffeld (2017); the volition to learn scale should be optimized in future studies by testing the additional item: Setbacks spur me on to make even more learning efforts (German item: Rückschläge spornen mich an, mich noch mehr um die Bearbeitung der Trainingsinhalte zu bemühen).