



Set your mind on it: The mediating role of mindset in the relationship between a learning-from-error climate and work-related flow

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Abstract

This study aims to investigate whether and how a learning-from-error climate is associated with work-related flow experiences by employees. Drawing on the tenets of Job Demands-Resources theory, we propose that this relationship is mediated by a work-related growth mindset. The study tests a mediation model by conducting structural equations modelling. Data were gathered in two waves from 159 employees within a Dutch financial organization. Results demonstrate that work-related mindset significantly mediates the relationship between a learning-from-error climate and work-related flow. In this study, we address the call for studies that empirically assess the influence of organizational climate on work-related flow in a multiwave study design. Specifically, we highlight the relevance of understanding how individual dispositions can shape the effects of a learning-from-error climate on work-related flow.

Keywords Organizational learning · Work-related mindset · Work-related flow

Introduction

Flow at work refers to having the experience of being absorbed in a work-activity that challenges one to use one's full potential (Csikszentmihalyi, 1975, 1990, 1997; Bakker, 2008; Csikszentmihalyi & Csikszentmihalyi, 1988). The experience of flow generates much pleasure in conducting the activity. Experiencing flow at work has been associated with

various beneficial organizational outcomes, such as employee happiness, increased motivation and performance (e.g. Demerouti, 2006; Engeser & Rheinberg, 2008).

Various studies have explored factors that influence flow in a work context, such as job characteristics (Demerouti, 2006), leadership (Sosik et al., 1999; Lovelace et al., 2007; Zubair & Kamal, 2015), and job resources (Fagerlind et al., 2013; Mäkikangas et al., 2010; Salanova et al., 2006). Despite these studies much is still unknown. Prior research has mainly focused on work-related flow as an outcome of job characteristics rather than an outcome of organizational context variables, such as the organizational climate. An exception is the cross-sectional study of Fagerlind et al. (2013), which showed that an organizational innovation climate that values new thinking and innovative work is associated with an increased likelihood of work-related flow. This research suggests that there may be a role for an organizational learning climate in stimulating work-related flow, specifically a climate in which employees are stimulated to learn from errors and mistakes. However, the possible impact of organizational learning climate on work-related flow is still unmapped. We address this empirical gap, by undertaking a two-wave study that examines whether and how an organizational learning climate influences work-related flow.

Furthermore, we argue that a work-related mindset of employees acts as a catalyst in this relationship. Work-related mindset can be captured by the concept of (growth)

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mindset of Dweck (2006). An employee's mindset is considered to vary on a continuum from fixed mindset to growth mindset (Burnette et al., 2013; Dweck, 2012; Caniëls et al., 2018) and may vary depending on the situation (Kray & Haselhuhn, 2007). Mindset taps into the implicit beliefs of individuals on the plasticity of basic personal traits and characteristics, such as intelligence and ability (Dweck, 2006). Work-related mindset refers to the implicit beliefs of employees about their ability and competence at work. A growth mindset refers to the implicit belief of employees that their abilities are malleable and that they can grow and develop over time. A fixed mindset denotes the implicit belief of employees that their abilities are static and not open to change (conform Dweck, 2006).

Based on the tenets of the Job Demands-Resources (JD-R) model, we assess whether and how work-related mindset mediates the relationship between learning climate and work-related flow. The key variables of our study are investigated in a two-wave study among 159 employees. The time interval between the two waves was four months. We conduct structural equations modelling to test our mediation model.

Theoretical Background and Hypothesis Development

Work-Related Flow

Flow is characterized by a strong focus, deep concentration and intense involvement in a specific activity, even when there are no concrete external rewards (Csikszentmihalyi, 1975, 1990, 1997; Csikszentmihalyi & Csikszentmihalyi, 1988). A flow experience may develop when, during an activity, an individual experiences a balance between challenges and skills (Nakamura & Csikszentmihalyi, 2002; Moneta & Csikszentmihalyi, 1996; Engeser & Rheinberg, 2008). This may happen, for example, when being immersed in writing an in-depth report, searching a solution to a problem, or any other challenging work activity. Work-related flow is defined as "a short-term peak experience at work that is characterized by absorption, work enjoyment and intrinsic work motivation" (Bakker, 2008, p. 401).

In 2007, the work-related flow inventory (WOLF) was developed and validated (Bakker, 2008) which specifies work-related flow as a three-dimensional construct, containing absorption, enjoyment, and intrinsic motivation. Since the introduction of the WOLF, flow has been increasingly studied in work contexts (for a systematic literature review, see de Moura Jr and Bellini (2019)). Studies have even demonstrated that flow experiences occur more often at work than during leisure activities (Csikszentmihalyi & LeFevre, 1989). It seems that conditions for flow are met more often throughout

workdays than throughout non-workdays. This may have to do with the structuring of energy that is required by work place activities and that is also necessary for a flow experience (Ceja & Navarro, 2011). Especially activities at work that require multifaceted abilities seem to trigger flow (Fullagar & Kelloway, 2009).

Flow research has demonstrated that flow enhancing factors may be related to persons or to organizations. Concerning person-related factors, studies have shown the importance of commitment (Rivkin et al., 2018), self-efficacy (Salanova et al., 2006) and the utilization of a variety of skills (Fagerlind et al., 2013; Fullagar & Kelloway, 2009). However, studies also show that whether a potential flow experience comes to full bloom or is prematurely cut short is to a substantial extent determined by the organizational environment (Nakamura & Csikszentmihalyi, 2002). With respect to organization-related factors that enhance flow, prior research has coined organizational resources (Salanova et al., 2006; Zito et al., 2019; van Oortmerssen et al., 2020), motivating job characteristics (Demerouti, 2006), and autonomy level (Fullagar & Kelloway, 2009; Fagerlind et al., 2013).

Learning-From-Error Climate as Predictor of Flow

The JD-R model (Schaufeli & Bakker, 2004; Bakker & Demerouti, 2017) infers a key role for organizational resources that employees can exploit to optimize their possibilities to cope with the demands of their daily work activities. Job resources are considered to be not only functional for achieving work goals, but also for reducing demands and stimulating growth, learning and development (Bakker & Demerouti, 2007). The presence of job resources can initiate a motivational process which engenders employees' well-being and which protects employees by attenuating detrimental effects of job demands on health (Bakker & Demerouti, 2017).

One of the organizational resources that is likely to influence growth, learning and development is the general attitude towards mistakes within the organization, i.e., the learning-from-error climate. When the attitude towards errors and mistakes within the organization is one in which the focus lies on learning from errors and mistakes, this can be characterized as a learning-oriented organizational climate (Caniëls & Baaten, 2019; Van Dyck et al., 2005; Putz et al. 2012; Grohnert et al., 2019). In such an organizational climate, employees perceive that one is allowed to learn from experiences instead of being punished for mistakes. Failure and mistakes are used to provide directions for improvement instead of being used as a reason for punishment (Caniëls & Baaten, 2019; Cattaneo & Boldrini, 2017; Cangialosi et al., 2020).

The JD-R model poses, among others, that the presence of organizational job resources may stimulate employees to learn

and grow in their job, which in turn may lead to motivation and feelings of accomplishment (Bakker & Geurts, 2004). Studies that used the JD-R model to investigate the relationship between work-related flow and organizational resources have found that job resources were strong antecedents of work-related flow (Bakker, 2005; Salanova et al., 2006; Zito et al., 2016). Drawing on these ideas, we argue that a learning-oriented organizational climate is an organizational resource that is likely to increase work-related flow, as it increases the chance that employees experience a balance between task-related difficulties and their personal skills. Typically, work-related flow may develop when an employee perceives a balance between on the one hand the challenges associated with a certain task and on the other hand the relevant skills he or she possesses. The presence of organizational resources, such as a learning-from-error climate, increases the chances for such a balance to be perceived. For example, a social support climate was found to increase flow (Salanova et al., 2006). Moreover, research has shown a reciprocal causal relationship between a social support climate and work-related flow, suggesting that organizational resources and flow boost each other through an upward spiral (Salanova et al., 2006). A positive organizational approach to errors creates room for conducting challenging work tasks, without being held back by fear of failure. Such a climate adds to psychological safety (Caniëls & Baaten, 2019), which is needed to indulge in challenging, complex work tasks that are conducive to flow (Fullagar & Kelloway, 2009). Therefore, we expect that:

Hypothesis 1: Learning-from-error climate is positively associated to work-related flow

Work-Related Mindset

Given the hypothesis that a learning-from-error climate is positively associated with work-related flow, it is worthwhile to gain insights about the mechanism that may be conducive to this relationship. We pose that growth mindset may be the mechanism via which the organizational climate influences flow experiences at work.

The central principle within mindset theory concerns an individual's perspective on whether people's abilities and competences are malleable (growth mindset) or static (fixed mindset) (Dweck, 1999). Individuals who entertain a fixed mindset mainly value positive feedback that is supportive of their views, which makes them vulnerable to negative feedback. Negative information is likely to be taken at face value without trying to extract relevant information from the negative remarks or events (Ehrlinger et al., 2016; Murphy & Dweck, 2016). In contrast, individuals with a growth mindset have the implicit belief that positive as well as negative information may help them to

develop, learn and adapt (Ehrlinger et al., 2016; Murphy & Dweck, 2016).

Traditionally, mindset theory was applied in the context of learning and education (e.g., Boyd, 2014; Asbury et al., 2015), providing strategies to children and teachers to facilitate learning and development (Limeri et al., 2020). Moreover, mindset interventions were designed to stimulate the development of a growth mindset among students (Yeager et al., 2019; Sisk et al., 2018). In recent studies, the relevance of mindset theory has been confirmed for an organizational setting (Bakker, 2008; Chase, 2010; Heslin & Keating, 2016; Caniëls et al., 2018).

Although conceptualized as a "trait"-like, stable over time individual attribute (Robins & Pals, 2002), mindset is malleable to priming (Dweck, 1999). Indeed, several experimental studies have successfully manipulated mindsets (Chiu et al., 1997; Plaks et al., 2001) and interventions promoting growth mindsets with organizational leaders have proved successful after six weeks (Heslin et al., 2005). Considering that we focus on the work-specific mindset, we argue that the learning-from-error climate perceived at work over a period of time, is likely to have a positive, "priming" influence on individuals' beliefs that they can change their competency at work (therefore increasing their growth mindset at work). This idea is in line with the tenets of the JD-R model, which posits that organizational resources, such as a learning-from-error climate, may foster dedication to the task at hand as well as belief in positive outcomes for the employee as well as the organization as a whole (Bakker & Geurts, 2004).

Work-Related Mindset as Mediator between Learning-from-Error Climate and Flow

Although several types of organizational climates have been tested in organizational settings (i.e. Tjosvold et al., 2004; Nerstad et al., 2013), the relationship between such climates and the individual employee's mindset has not been well-established. To our knowledge, only a few studies assessed a relationship between climates and mindsets, and these studies were predominantly conducted in a context of sport and physical education. Ommundsen et al. (1998) found that perceiving a mastery climate in their particular sport was related to athletes' beliefs that the purpose of sport is to teach lifetime skills, which suggests implicit beliefs about personal growth, i.e. a growth mindset. Relatedly, Ommundsen (2001) found specifically that perceiving mastery climate in a physical education class was positively related to student's growth mindset about physical education, while perceiving performance climate positively related to fixed mindset in students. In an organizational setting, it is likely that a climate with a focus on personal development, i.e. a learning-oriented

climate, induces implicit beliefs about being able to improve oneself, i.e. growth mindsets.

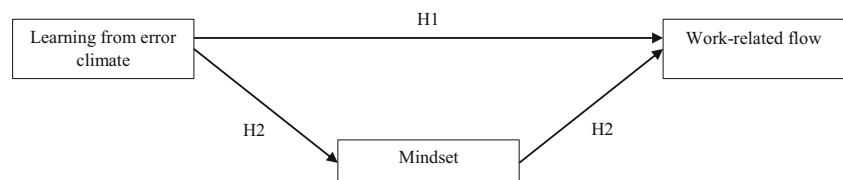
The link between mindset and work-related flow is plausible given the three dimensions of work-related flow (Bakker, 2008): intrinsic motivation, absorption, and enjoyment. We argue that growth mindset can contribute to all these dimensions as follows. Numerous studies have shown that growth mindset is related to more focus on the process than the outcome, suggesting the presence of *intrinsic motivation*. For example, Robins and Pals (2002) showed that growth mindset was related to adopting mastery goals rather than performance goals, which means by definition focusing on the process and mastering the task, rather than an outcome. Heyman and Dweck (1992) reviewed studies connecting goals and intrinsic motivation and concluded that mastery goals promoted intrinsic motivation, while performance goals undermined it. Previous research with children (Diener & Dweck, 1978, 1980) has shown that those orienting towards mastery experienced more active involvement in a difficult task, which was signified by their verbalizations focused on problem solving, suggesting *absorption* (Diener & Dweck, 1978, 1980). Simultaneously, those focusing on failure and showing hopeless response (related to fixed mindset) interrupted their task with irrelevant verbalizations, suggesting they may have had difficulty concentrating. Mueller and Dweck (1998) primed children into the growth mindset state (by praising them for effort) or fixed-mindset state (by praising their intelligence) and found that those in the growth mindset condition showed high *enjoyment* in the difficult task and an intense willingness to persevere. Based on the above, we argue that growth mindset, as conducive of those states when one focuses on improving oneself and mastering the task rather than comparing oneself to others, will be more supportive of achieving flow states.

Considering the arguments above, we expect that a learning-from-error climate is positively related to growth mindset at work, which in turn is positively associated with work-related flow. Hence, we hypothesize:

Hypothesis 2: The positive relationship between a learning from error climate and work-related flow is mediated by work-related mindset

Figure 1 shows the hypothesized relationships in a conceptual model.

Fig. 1 Conceptual model



Method

Sample and Procedure

Data was collected in two waves from a sample of all mid- & back office employees (385) of the mortgages service-centre of a Dutch financial service organization whose top management values the HR practices that are the subject of this study. Both surveys were self-administered, with waves being four months apart. Before disseminating the link to the online questionnaire, we asked two professionals and two subject-matter experts to reflect on the survey layout and the clarity of the questions. This procedure led to small changes in the survey layout (larger font size, increased line spacing) to facilitate the readability of the items.

The survey was accompanied by a cover letter, which emphasized the relevance of the study. We explained that respondents would remain anonymous and that no individual-level information would be provided to anyone. It was clear to respondents that data would only be used at an aggregated level. We stressed that answers should reflect honest opinions of the respondents and therefore there were no right or wrong answers. Participation in the study could be withdrawn at any time. There was no reward (tangible or intangible) offered to participants in the study. Respondents needed to explicitly provide their informed consent in order to start the survey.

Data on learning-from-error climate, mindset and various control variables were collected at time 1 (T1). Data on our dependent variable, work-related flow, was collected four months later, at time 2 (T2). In total 385 employees received the questionnaire in the first wave. Two reminders were sent, each after one week. We received 278 (72.2%) valid responses in the first wave. The second wave generated 207 complete responses of which 159 could be matched to respondents from the first wave, yielding an overall response rate of 41.3%. The remaining sample consisted of 52.8% male respondents, which is in line with the gender distribution within the organization. Respondents were on average 42.7 years old (SD = 11.2) and were tenured on average for 14.6 years (SD = 11.5).

Measures

The questionnaire consisted of multiple-item scales, validated in prior research. Scales ranged from '1' (strongly disagree) to

'7' (strongly agree) and were labelled verbally instead of numerically to avoid acquiescence bias (Kulas et al., 2008). The outcome variable was assessed in the second wave (T2), while the predictor and mediator were assessed in the first wave (T1) to limit possible effects of common method bias.

Work-related flow was assessed at T2 using thirteen items from Bakker's (2008) work-related flow inventory (WOLF), which covers three sub-dimensions, namely absorption, work enjoyment and intrinsic work motivation. An example item is "I get carried away by my work". The scale's reliability was $\alpha = .91$.

Learning-from-error climate was assessed at T1 by seven items developed by Tjosvold et al. (2004) to assess the learning-from-error climate in the organization. An example item is "We do not let mistakes recur unnecessarily". The estimated reliability was $\alpha = .78$.

Work-related mindset was assessed at T1 by four items adapted from Dweck's implicit theory of intelligence (Dweck et al., 1995). Dweck's original scale contains eight items, of which four are negatively worded and should be reverse-coded. Although the use of reversed-coded items is sometimes advised to remedy response bias (e.g., Paulhus, 1991), scholars have observed repeatedly that reversed-coded items lead to complications, such as unexpected factor structures (Weijters et al., 2013; Netemeyer et al., 2003). Therefore, we limited our set of items to the positively worded ones. Furthermore, we adapted Dweck's items to reflect the work-context. This procedure is common, see for example Kray and Haselhuhn (2007). An example item is "No matter who you are, you can significantly change your ability level in the workplace". The estimated reliability was $\alpha = .86$.

With respect to control variables, we measured gender as a dichotomous variable coded '0' (male) or '1' (female). Age was assessed in years. Education level was measured in seven categories ranging from '1' (lower education), up to '7' (doctorate degree). We measured tenure by the number of years of experience in the current job.

Analytical Strategy

All statistical analyses were conducted in the open-source statistical software R version 4.0.0 (R Core Team, 2018). To assess whether multicollinearity could be a problem in our dataset, we calculated the variance inflation factors (VIFs). All the VIF values are below 10 (the highest VIF was 1.1). Moreover, all correlations are below the threshold of 0.70 (Tabachnick & Fidell, 2001), indicating that the likelihood of multicollinearity is low. Measures were mean-centred to facilitate interpretation of the results. To examine the hypothesized mediation effect, we conducted structural equations modelling by using the R package Lavaan (Rosseel, 2012; version 0.6–6), which facilitates bootstrapping.

Results

Confirmatory Factor Analysis

Prior to our analyses we have assessed the factor structure of our dependent variable, i.e., work-related flow. Confirmatory factor analysis confirmed the three-factor structure of the scale. Model fit was assessed by examining several fit indices for evaluating goodness-of-fit in Structural Equations Modelling, as recommended by Kline (2005). An acceptable fit is indicated by an SRMR value below .80 and an RMSEA value below .08 (Kline, 2005; Byrne, 2013). The three-factor model showed a better fit with the data (chi squared = 137.431; $df = 62$; RMSEA = .087; CFI = .918; TLI = .897; SRMR = .097) than the one-factor model (chi squared = 201.184; $df = 65$; RMSEA = .115; CFI = .852; TLI = .822; SRMR = .096). The model fit of the three-factor model was further improved when we allowed two items within the work enjoyment dimension to correlate (chi squared = 119.030; $df = 61$; RMSEA = .077; CFI = .937; TLI = .919; SRMR = .073). In addition, the Vuong (1989) closeness test confirmed that the three-factor model fits better than the one-factor model ($p = .000$).

From these CFAs we can conclude that flow is a multi-dimensional construct i.e., it consists of three underlying dimensions. Multi-dimensional constructs are commonly measured as a formative combination of the multiple dimensions, while each of the underlying dimensions are measured using several reflective indicators (Edwards, 2001). Hence, for our study we combined the mean scores of each dimension to create an overall measure of flow.

Correlation Analysis

In Table 1 we show the means, standard deviations and correlations between key constructs in our study. As expected, age and tenure are highly correlated ($r = .75$). Furthermore, education level correlates negatively with age ($r = -.30$) and tenure ($r = -.40$), which is explained by the fact that older employees with a high tenure started working in the back office of the organization. Generally, they have a lower level of education than the younger employees who more recently started working in the organization. Due to increasing digitization in financial services, higher entry requirements have been set for starting employees, in terms of training levels. Although older employees have been continuously retrained by organization-internal courses, they more often have a lower-level diploma. Table 1 also shows that control variables do not structurally associate with any of the key variables (correlations are all below .3). Following recommendations by Becker (2005), we leave the control variables out of the further regression analyses, in order to increase the power of our tests.

Table 1 Means, standard deviations, and correlations with confidence intervals

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Flow T2	4.31	0.89						
2. Mindset T1	5.19	0.85	.32**					
3. Learning Climate T1	5.59	0.65	.22**	.33**				
4. Gender	0.47	0.50	-.06	-.08	.01			
5. Age	42.66	11.22	.04	.10	.06	-.12		
6. Education level	4.12	1.19	.14	-.05	.15	-.14	-.30**	
7. Tenure	14.58	11.52	-.03	.07	.05	-.01	.75**	-.40**

M and *SD* are used to represent mean and standard deviation, respectively. * indicates $p < .05$. ** indicates $p < .01$

Regression Results

We tested our hypotheses by conducting structural equations modelling (Lavaan package in R). Table 2 reports our findings. A significant positive relationship was found between learning climate and mindset ($b = .43, p < .001$). We also found a significant positive relationship between mindset and flow ($b = .29, p < .001$). The 95% bias-corrected confidence interval (CI) for the indirect effect from learning climate to flow through mindset (derived from 1000 bootstrap samples) did not contain zero (CI = [0.044; 0.23]), while the direct effect from learning climate on flow was insignificant (CI = [-0.035; 0.38]). These findings provide no support for a positive significant relationship between learning climate and work-related flow. Hence, hypothesis 1 is not supported by our data. However, the pattern of results demonstrates that mindset fully mediates the relationship between learning climate and flow, thereby supporting hypothesis 2.

Discussion

The aim of this study was to gain insights about a possible mechanism via which a learning-from-error climate may

influence work-related flow. In our study, we have drawn on the JD-R model to explain flow experiences at work, as flow can be linked to well-being at work (Bakker, 2008; Zito et al., 2016). Work provides the opportunity to experience states of well-being, i.e. flow (Zito et al., 2019). The JD-R model has been used more often to assess the role of organizational resources for work-related flow (e.g. Bakker, 2005; Salanova et al., 2006; Zito et al., 2016) and confirmed that job resources are strong antecedents of work-related flow. We built on these studies by examining the specific role of learning-from-error climate as an organizational resource that may induce well-being, by engendering work-related flow. Moreover, we investigated the mediating role of mindset, as a growth mindset indicates the extent to which employees believe that they can achieve development of work-related skills and growth at work, and therefore are able to balance work challenges with personal skills.

Consistent with our theorizing, our findings show that growth mindset fully mediates the relationship between a learning-from-error climate and work-related flow. This finding suggests that organizations endorsing learning-from-error climate tend to have employees experiencing more flow at work through stimulating their individual beliefs about their capacity to develop work-related skills.

Table 2 Mindset as mediator in the relationship between learning climate and work-related flow

Independent variables (centered)	Coefficient	Standard error	95% bias-corrected CI
Total effect			
Intercept	2.66***	0.60	[1.479; 3.85]
Learning Climate -->Flow	0.29***	0.11	[0.085; 0.50]
Partial effects toward mindset (a)			
Learning Climate -->Mindset	0.43***	0.11	[0.21; 0.66]
Partial effects from mindset to flow (b)			
Mindset -->Flow	0.29***	0.089	[0.10; 0.47]
Direct effect (c')			
Learning Climate	0.17	0.11	[-0.035; 0.38]
Indirect effects (a*b) through			
Mindset	0.12***	0.047	[0.044; 0.23]

Unstandardized coefficients are reported, independent variables were centered

* $p < .05$, ** $p < .01$, *** $p < .001$

In our sample, we find that (growth) mindset is positively and significantly related to flow at work. This finding concurs with results from studies that investigate the connection between mindsets and perceptions of challenge. Several studies have shown that challenging situations create a perception of threat for fixed-mindset individuals (Zhao et al., 2017; Cimpian et al., 2007). Considering that flow theory assumes a delicate balance between skill level and the level of challenge, it could be the case that growth mindset individuals have a bigger “range” of tolerance for challenge before they feel threatened, thus allowing them to experience flow easier than their fixed-mindset counterparts.

Relatedly, it has been demonstrated in prior studies that individuals with growth mindset have an internal locus of control about their skills, meaning they believe they can actively interact with an environment and increase their level of competence by applying effort (Blackwell et al., 2007), thus suggesting they might be experiencing less stress and anxiety when encountering challenges at work. This suggestion is supported by early research from Dweck and colleagues showing that growth mindset was related to more strategy-oriented/mastery thinking as opposed to helpless responses when individuals were exposed to difficult tasks (Dweck, 1999; Robins & Pals, 2002). Furthermore, Ommundsen et al. (2005) specifically found that individuals with fixed mindset experienced lower sense of control about their academic results than growth mindsetters. This evidence suggests that growth mindsetters’ implicit beliefs that they can learn and improve matches with organizations that endorse a learning-oriented climate, in which errors and mistakes are considered possibilities for development.

We find that having a growth mindset fully mediates the relationship between a learning-from-errors climate and work-related flow. This finding extends prior studies that suggest that mindsets may be an important indicator of the sort of emotions individuals experience, specifically the level of enjoyment. Research has shown that perceiving low control is associated with negative affect (Pekrun, 2006). King (2017) found that students with fixed mindset reported more negative affect, while Robins and Pals (2002) showed those students felt more shame and distress with regard to their academic performance. Likewise, Zhao et al. (unpublished manuscript cited in Dweck, 1999) presented students with vignettes about hypothetical failure and found that confronted with those, fixed-mindset students scored higher on depression and self-worth inventories than growth mindset students. Finally, an elegant experiment by Martocchio (1994) manipulated participants’ beliefs about whether a computer skill was acquirable (thus manipulating their fixed and growth mindsets) and found that those in the growth mindset condition experienced a reduction in their pre- to post-training anxiety, while those in the fixed-mindset condition remained anxious. Hence, the experiences of negative emotions may suppress the ability of the

fixed-mindset individuals to experience flow at work as often and fully as growth mindset individuals will, especially in situations of new learning or failure. In those challenging situations, growth mindset individuals will be more likely to sustain their level of enjoyment and stay absorbed in the task, which is a necessary requirement to experience flow.

In sum, we conclude that there may be two explanations of why mindset is the mechanism that transfers a learning-from-error climate to flow experiences, one that is related to cognition (perception of threat and low locus of control), and one that is related to mindsets being an important indicator of the sort of emotions individuals experience (thereby affecting the ability to experience flow).

Theoretical Contribution

Our contribution to the existing literature is threefold. First, we increased current understanding about how organizational context, specifically learning-oriented climate, contributes to work-related flow, thereby addressing the increased interest in learning from errors at work (Putz et al., 2013; Van Dyck et al., 2005). Specifically, we highlighted the relevance of understanding how individual dispositions can shape the effects of a learning-from-error climate on work-related flow. Second, while there is a burgeoning literature on mindset, much research is still needed to elucidate the role of mindset at work. This study filled this gap by highlighting the mediating role of work-related mindset in the relationship between organizational context and outcome. Third, by adopting a two-wave design in which data is collected at two moments in time, we were better able to assess mediation effects than prior studies with cross-sectional designs.

Practical Implications

Our study has implications for managerial practice. Our findings suggest that an endorsing growth mindset catalyses the effect of an organizational learning climate on work-related flow. Therefore, organizations may benefit from addressing the organizational climate in order to stimulate work-related flow, while at the same time implicit beliefs of employees are addressed. Here may lie a task for human resource managers, who could undertake actions to develop employees’ mindsets into a ‘growth mindset’ direction. There may be opportunities for employee-coaching activities in which coaching or mentoring is offered to employees. Additionally, interventions aimed at the cultivation of a growth mindset could be presented to employees and their supervisors (Heslin et al., 2005; Keating & Heslin, 2015). These interventions are characterized by an emphasis on the process that employees carry out to accomplish a certain level of performance, rather than a focus on an employee’s innate talent (Keating & Heslin, 2015).

Additionally, it may be worthwhile to cultivate organization-wide programs that could help create

organizational contexts in which growth mindsets can flourish (Dweck & Yeager, 2019). Moreover, developmental human resource practices may be targeted at encouraging a positive organizational climate that endorses learning from mistakes. Especially suitable could be practices that target the provision of non-threatening peer-feedback (e.g., multi-source feedback, peer-mentoring) and learning opportunities (e.g., possibilities for study leave, educational programs, job rotation programs).

Limitations and Avenues for Future Research

Every study has limitations. Firstly, we used self-reported measures. Although this practice is quite common in the management literature (Ng & Feldman 2012), self-reported measures are known to be at risk for common-method bias and other types of bias (Podsakoff et al., 2012). Considering that our variable of interest, work-related flow, may be nearly impossible for others to assess, we decided to remedy common method bias by gathering data about our dependent variable at a later time point than the independent variables. Nonetheless, future research may want to adopt creative research designs that can further curb the room for potential biases. Especially interesting in this respect is the use of experience sampling in combination with diary studies. In an experience sampling study design, employees are asked to fill out a short survey several times each day (Csíkszentmihályi, 2002), which may make it possible to measure flow while it is happening.

Secondly, we adapted the mindset measure from Dweck via a procedure that has been widely accepted in the literature. Yet, future studies may want to dive into adapting Dweck's scale and perform an in-depth validation of a scale specifically for mindset at work, similar to, for example, the mindset scale of Kray and Haselhuhn (2007), which was designed to specifically assess a mindset about negotiation ability; or the stress mindset measure of Crum et al. (2013), which specifically assesses mindsets in the context of stress.

Thirdly, although our questionnaire had to be limited with respect to the number of items, given that we addressed our respondents twice to gather multiwave data, our study could have benefited from adding some potentially valid control variables. For example, the level of self-efficacy could be of relevance, considering that some employees may have a fixed mindset about developing new skills, but simultaneously have a strong belief about their competence in the given tasks they regularly perform. Those employees' flow experiences may not be affected to the same extent as the flow experiences of employees who have a low competence belief. Similarly, the level of challenge and uncertainty on the job may be important. Some jobs may be more unpredictable, whereby having a growth mindset may be a necessary condition for experiencing flow. In other, more routine jobs, with changes seldom occurring, mindsets may be rather irrelevant. In other words,

flow experiences of a financial broker may be more contingent on the mindset than those of a statistician or a bus driver. Finally, some of our argumentation suggests that a growth mindset is likely to be related to higher intrinsic motivation, but we did not directly test that connection. Further studies should include those concepts to allow for generalizations across various interpersonal and contextual factors.

Conclusion

This study has extended current insights and understanding about how organizational context, specifically a learning-from-error organizational climate, contributes to work-related flow. By highlighting the mediating role of work-related mindset in the relationship between organizational context and outcome, we provide insights about how individual dispositions, such as mindset, can shape the effects of a learning-from-error climate on work-related flow. Our main finding is that work-related mindset fully mediates the relationship between learning-from-error climate and work-related flow.

Declarations On behalf of all authors, the corresponding author states that there is no conflict of interest. The authors have no relevant financial or non-financial interests to disclose. To ensure that ethical standards were met, information about study design, planned sample, procedure and the questionnaire were evaluated and approved by a committee guarding the ethical procedure towards respondents. Informed consent was obtained from all individual participants included in the study. Due to the nature of this research, participants of this study did not agree for their data to be shared publicly.

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