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Predictors of employees' self-reported future learning ability and disengagement at work

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Abstract

Purpose – The purpose of this study is to examine the relationship between job characteristics that foster learning (experience with and demand for continuous learning at work, skills variety and autonomy) as potential predictors of self-reported outcomes, such as future learning ability and employee disengagement at work for a cohort of employees with no or very limited job change experience. Further consideration was given to employees' experiences at work (meaningfulness and recognition at work) as potential mediators in this relationship between job characteristics and employee outcomes.

Design/methodology/approach – A cross-sectional design was applied. Participants (N = 284) were recruited from Northern Germany and asked to complete a paper-and-pencil survey. The results were subsequently analyzed using path models to examine direct and indirect effects associated with mediation.

Findings – Path model analysis indicated that job characteristics promoting learning at work are positive predictors of self-reported future learning ability and negative predictors of disengagement. Both meaningfulness and recognition predict future learning ability as well. However, these variables only operated as significant mediators in the relationship between job characteristics and employee disengagement (but not self-reported future learning ability).

Originality/value – The study outlines the importance of job characteristics and employee experience to understand employees' beliefs about their learning ability and engagement at work. The findings highlight the importance of meaningfulness and recognition for employees, as well as the role of learning-supportive job characteristics.

Keywords Job characteristics, Meaningfulness, Recognition, Learning ability, Disengagement

Paper type Research paper

Introduction

Jobs and job characteristics have significantly changed during the past decades due principally to innovations, technologizing and digitalization (Cangialosi *et al.*, 2020; Cortes *et al.*, 2020). Employees have to adapt continuously to changing job requirements (Beer and

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Mulder, 2020; Park *et al.*, 2020). Both, employees' job characteristics and experience at work can shape the extent to which employees are engaged, continuously learn on the job and maintain their ability to acquire new knowledge. This paper considers the interplay of job characteristics and work experience in relation to two outcome variables of interest as follows: future learning ability and disengagement at work.

Employees can form beliefs about their future learning ability by assessing their past learning track record. This notion builds on a classical understanding of enactive mastery experiences (i.e. positive achievements) by Bandura (2012). Past mastery expectations set the stage for the future and repetitive disappointments lower them. In an ideal learning environment, repeated successful experiences produce a strong efficacy in expectations, which then helps employees to manage the negative effects of some failures. However, it is not only positive experiences that are helpful but also the opportunity to apply one's skills regularly. This kind of work environment also supports lifelong learning and helps employees to maintain and enhance their learning ability (i.e. their future learning ability and the subsequent self-efficacy). In short, "future learning ability" in this study, therefore, captures employees' self-belief or expectation so that they are able to acquire new competencies and knowledge in the future. This is especially so in the face of obstacles, where such beliefs and expectations are important in mastering – difficulties (Bandura, 2012).

In addition to fostering employees' skills and triggering positive perceptions about one's learning ability, engagement, as well as disengagement at work are impacted by the job's characteristics and employees' experience at work. Engagement in this context is defined as a positive, as well as fulfilling, work-related state of mind where employees feel dedication, absorbed and dynamic at work (Schaufeli *et al.*, 2002). Conversely, disengagement reflects the degree to which work is not engaging and appears boring (Harju *et al.*, 2016).

The contribution thus addresses two knowledge gaps. There is a greater need to explore the joint effects of job characteristics and employees' experiences (Bailey *et al.*, 2019). In addition, more research is needed to understand whether meaningfulness at work and recognition perceptions are shaped by external factors in the workplace rather than factors internal to the employee (Chaudhary, 2020) and how these variables influence employees' behavioral involvement at work (Montani *et al.*, 2020).

Job characteristics: skill variety, autonomy, learning experience, and demand for learning

Skill variety and autonomy are two job characteristics that have been studied widely to understand their effect on a range of employee outcomes (Blanz, 2017; Hackman and Oldham, 1975). Skill variety can be defined as "the degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents of the employee" (Hackman and Oldham, 1975, p. 161).

Autonomy refers to the "extent to which employees have a major say in scheduling their work, selecting the equipment they will use and deciding on procedures to be followed" (Hackman and Lawler, 1971, p. 265). Thus, both skill variety and autonomy are both important variables of the job characteristics model (JCM; Hackman and Oldham, 1975). At the same time, both variables are important predictors of how employees experience their job and manage challenges with work, such as when health limitations or disabilities endanger or impact previous performance. One further imperative aspect of job resources is recognition at work, which relates to organizational or supervisory support. This factor is important in terms of achieving goals at work in the face of ongoing job demands. At the same time, it can also "stimulate personal growth and development" (Demerouti *et al.*, 2001, p. 501), which is key for learning and adapting (Lesener *et al.*, 2019). This means that both skill variety and autonomy together with experience with continuous learning demand for further continuous learning; all

of these are important job characteristics. Accordingly, this should be regarded jointly (and will consequently be used as a composite score in the current study).

Past research has linked skill variety and autonomy positively to engagement and negatively to work-related boredom (van Hooff and van Hooft, 2017). There is some evidence that skill autonomy and skill variety set the stage for learning to occur in the workplace. Environments that empower employees also report more informal learning (Khandakar and Pangil, 2019). Further evidence for this comes from Kwon and Cho (2020). Those authors showed that skill variety and autonomy were positively correlated with learning while skill variety also predicted learning and job involvement. This is also reflected in work that has shown that skill variety increases employees' sense of purpose at work (Weston *et al.*, 2020), which may also increase employees' engagement at work.

The second area of interest in this study concerns the extent to which learning opportunities are present in the workplace. It is well known that the lack of learning opportunities and the lack of control over one's content of work – similar to autonomy – decreases engagement and increases boredom (Guglielmi *et al.*, 2013). Learning at work predicts involvement (Kwon and Cho, 2020). Similarly, employees who seek work challenges also report more engagement and less boredom (Harju *et al.*, 2016). This suggests that the demand for and experience with learning, similar to skill variety and autonomy, can potentially lead to employees forming more positive expectations about their future learning ability and promote their engagement at work. According to the evidence, we hypothesize that when job characteristics support learning at work (including the experience of and demand for learning, skill variety, and autonomy):

H1. Job characteristics positively predict employees' self-reported future learning ability (*H1a*). In addition, we propose that such job characteristics can increase engagement, and thus can function as negative predictors of disengagement at work (*H1b*).

Experience at work: meaningfulness and recognition

Two variables were identified as potentially relevant in relation to learning ability and disengagement.

The first variable here is meaningfulness. Meaningfulness is the degree to which employees perceive their work as meaningful and the degree to which they feel recognized at work. Meaningfulness in work can be defined as the congruence of one's purpose in life with work activities (Han *et al.*, 2021). Meaningfulness in this paper is defined by the degree to which an employee feels satisfied when their contributions on the job are received positively (Kaur and Mittal, 2020). This means that meaningfulness is considered as a reflection of the value of work, assessed by employees in relation to their own standards (Spreitzer, 1995). In this case, meaningfulness represents employees' perceptions that are shaped by factors within the workplace, rather than a motivational attitude or psychological state (see also a review of different definitions reviewed by Bailey *et al.*, 2019). Only if a job is meaningful to employees and they have the right skills and resources available to them (including the autonomy they need) will they be able to tackle obstacles. Indeed, the Job Demands and Resources model (Bakker and Demerouti, 2017) recognizes the role of job characteristics and resources. This model and its related area of research have received a great deal of attention over the past few years (for more information, please consider the meta-analysis published by Lesener *et al.*, 2019).

The second variable of interest is recognition. Recognition refers to the extent to which employees receive approval, appreciation and praise for their efforts (Montani *et al.*, 2020). Meaningfulness and recognition are often explored together as work becomes more meaningful when employees receive praise, recognition and acknowledgment from others

(Bailey and Madden, 2016; Montani *et al.*, 2020). Vice versa, when individuals do not feel appreciated or recognized, work is often perceived as pointless (Bailey and Madden, 2016). While meaningfulness relates more to one's own purpose in life and to what extent this overlaps with their work activities (Han *et al.*, 2021) recognition is more an external factor in terms of organizational or supervisory support also proposed by the JD-R (Bakker and Demerouti, 2017).

Both meaningfulness and recognition have been investigated in relation to several outcome variables. In a meta-analysis, Allan *et al.* (2019) found that meaningful work correlated significantly with a number of desirable outcomes, such as work engagement, commitment and job satisfaction. Montani *et al.* (2020) similarly noted that meaningfulness was related to employees showing more in-role and extra-role behaviors, and thus involvement at work. Similarly, meaningfulness has been linked to feelings of accomplishments and growth (Pavlish and Hunt, 2012). This suggests that the meaningfulness of work plays an important role in how disengaged employees feel at work. This is also in line with Kahn (1990), who suggested that meaningfulness is an antecedent to engagement and further research that found positive relationships between meaningfulness and employee engagement (Kaur and Mittal, 2020).

Similarly to meaningfulness, recognition has also been shown to relate positively to employee involvement on the job (Montani *et al.*, 2020) and learning over time via competence development and empowerment (in line with empowerment and information sharing; Liu, 2018). However, when employees lack opportunities and are not being recognized, it is likely that they will also start to feel less confident in their learning abilities and experience greater disengagement over time. Clearly, lower meaningfulness and lack of learning opportunities may potentially reduce the attractiveness of these roles for many professionals (Järvensivu, 2020).

We, therefore, argue that in line with the JCM (Hackman and Oldham, 1975), the meaningfulness of work – in addition to recognition – may operate as a predictor of employees' self-reported future learning ability and disengagement at work. In the absence of research that connects our selected variables directly, we propose that:

H2. Positive experiences such as meaningfulness and recognition at work are positive predictors of self-reported future learning ability (*H2a*) and negative predictors of disengagement at work (*H2b*).

Further evidence suggests that these predictors may also operate as potential mediators. Fletcher (2019, p. 1222) found that "meaningfulness positively mediated the relationship between perceived opportunities for development and job engagement." The interconnections between all experience and job characteristics, as well as outcome variables, thus suggest that meaningfulness – and also recognition – may operate as partial, if not full, mediators in the relationship between our job characteristics and outcome variables. Such a mediation effect is also in line with the JCM, which proposes that meaningfulness mediates the relationship between job characteristics and work outcomes (Hackman and Oldham, 1975). In addition, this mediation suggestion also recognizes the potential that meaningfulness, as rated by employees. is influenced by external variables and sources found in the workplace (Chaudhary, 2020; Montani *et al.*, 2020). Accordingly, we propose that:

H3. Experiences such as meaningfulness and recognition at work partially mediate the relationship between job characteristics and self-reported future learning ability (*H3a*) on the one hand and disengagement at work (*H3b*) on the other.

Employee transitions back to work: implications for learning and engagement

Our literature review and hypotheses are based on literature that mostly focuses on employees facing no exceptional barriers to learning. In this study, we focus specifically on a group of employees who have been absent from work due to serious illness, which means that they face health-related obstacles that endanger and limit their current and future participation at work – including their ability to participate in learning activities or opportunities to maintain, enhance or build their self-efficacy when tackling new work challenges. We are not aware of any research that has focused specifically on the work-related learning perspectives among employees who have experienced significant health-related workplace absences and have participated in medical rehabilitation.

Employees who are facing medical issues often miss out on formal training and informal knowledge exchanges, often prior to and during their absence. In addition, many employees who are absent and partake in physical rehabilitation often experience long periods of poor well-being before work, which may limit their participation in the workplace and is also likely to affect their level of engagement. Poor health and disability may not necessarily affect their future working (and learning) ability, but such employees will certainly have to consider the real possibility that they may not be able to continue working in the same role in the future (Kandar *et al.*, 2020). To regain their working ability, many German employees participate in medical rehabilitation programs. The programs offered to these employees not only consider their need to improve workability, health and well-being at work but also they try to increase employees' understanding of the various psychological mechanisms behind self-regulation to help them manage demands and resources more effectively in the future. The latter aspect of self-regulation also once again requires a person to use different skills and the ability to exercise some autonomy to adapt effectively to new circumstances (Markus *et al.*, 2021).

Nevertheless, when reentering the workplace, many employees who are at risk due to poor health and disability often face more challenges in terms of catching up with training programs, accessing appropriate resources and obtaining the right support that will enable them to maintain their health and performance at work. As a result, it will be very important that these employees have the skills, opportunities and ability to engage in self-regulatory processes to access and use helpful resources (Markus *et al.*, 2021). As a result, their beliefs and expectations, their opportunities and skills, will all play a critical role in shaping their engagement and their self-perceived future learning ability. Accordingly, we aim to examine the learning experiences of employees in the context of transitions back to work while facing their workability challenges. Specifically, we focus on how employees with a history of medical issues perceive their future learning ability and disengagement at work – as driven by how they also evaluate their job characteristics and how they view the meaningfulness and recognition they receive at work. By understanding both the predictors of future learning ability and disengagement, we will be able to better understand how we can help employees to sustain their work ability, performance and future perspectives at work.

Methods

Study procedure

This study was part of a larger research project conducted between January and May 2017 that investigated employees' work experience, working conditions, engagement at work, health behaviors and personal health perceptions (Rinn *et al.*, 2021). The current research paper focuses on the work-related variables of this research project. Prior to starting participant recruitment, the study received ethical approval by the German Association of Psychology. All participants were recruited during their medical rehabilitation, which aimed

to improve health condition and fitness for work in the future. The participants were informed about the purpose of the study, the voluntary nature of their participation and the confidentiality of their data by staff at the facility. Following this process, participants completed a paper-and-pencil survey.

Sample description

The sample consisted of 284 participants. The sample included 230 men and 54 women between 29 to 64 years (M = 53.74, SD = 6.44). All participants were working at the time of the survey. At the time of the survey, 40 participants (14.1%) were working part-time for up to 32 h. Another 129 participants worked more than 32 h a week (45.4%). The remaining 115 participants (40.5%) did not provide any information about working hours. Out of 284 participants, 145 (51.1%) have never changed jobs while 139 (48.9%) changed jobs at least once.

Measures

The following items are translations from the corresponding German measures, which were taken from the "Transitions and Old Age Potential Study" (Sackreuther *et al.*, 2016, see also findings of the study published in English by Fasbender *et al.*, 2016). All items were collected in German and translated to English for this report.

Job characteristics. Job characteristics included four items, each referencing one job characteristic as follows: demand and experience, continuous learning, skill and autonomy. Experience with continuous learning was measured as follows: "Learning at work and in courses is part of my work life" (M = 3.69, SD = 0.93). Demand for continuous learning at work was measured by asking participants respond to: "My work requires me to continuously learn new things" (M = 4.00, SD = 0.76). Skill variety was captured by requiring a response to: "My work requires me to employ a variety of different skills" (M = 4.50, SD = 0.71). Autonomy was captured in the following statement: "I have the opportunity to make my own decisions at work" (M = 3.98, SD = 0.85). The response options were identical for all items. All items were used to create one composite that captured learning experience via job characteristics.

Experience variables (mediators). The two mediators were assessed using one item each. Meaningfulness was measured by asking participants to respond to the following statement: "My work is very meaningful to me" (M = 4.66, SD = 0.59). Please note that we translated the item from German to English for this analysis. Recognition at work was measured with the following item: "I receive the recognition at work that I deserve" (M = 3.67, SD = 0.84). The response options included five-point response options ranging from (1) "Does not apply at all", to (5) "Absolutely applies".

Outcome variables. The outcome variables of interest included several one-item measures. To assess perceived future learning ability, participants were asked to respond to the following question: "How easy do you think is it for you to acquire new competences and knowledge?". The response option ranged from (1) "very hard" to (5) "very easy" (M = 3.04, SD = 0.90).

Disengagement, more specifically boredom, was measured using the statement: "My work bores me or doesn't challenge me enough" (a statement similar to an item also used to assess workplace boredom by Reijseger *et al.*, 2013). The five-point response options ranging from (1) "Does not apply at all", to (5) "Absolutely applies" (M = 2.49, SD = 0.73).

Demographic and background variables. A number of variables were identified as potential covariates. This included gender, age, experience with job change (a dichotomous variable differentiating individuals who have had the same job throughout and those who

had changed their job at least once in their career) and working hours (a categorical variable differentiating between those working part-time, full-time and those who provided no such information). Educational background was not a variable of interest given the mature nature of the sample.

All participants were employees who were covered by insurance from the Deutsche Rentenversicherung Oldenburg-Bremen (German Pension Fund Oldenburg-Bremen). Most of the participants were working in blue-collar roles (e.g. they worked in the retail sector, in construction work and meat processing). The medical rehabilitation program focused on improving and increasing their work ability as all study participants faced health issues or disability, which – if unaddressed – could thwart them from continuing in their current roles or their ability to continue working *per se*.

Results

Data screening and preliminary analyzes

Data screening and correlation analysis (Table 1) showed no evidence of multicollinearity as all variables correlated below 0.7 (Hair *et al.*, 2006). In the next step, we created a composite as all variables represented learning opportunities via job characteristics (Table 1). The new composite had good reliability, with all items correlating with one another as expected ($\alpha = 0.74$, $M = 4.04$, $SD = 0.61$). To prepare subsequent analyzes, Mahalanobis' distance was computed to identify potential outliers. As a result, 12 outliers were identified, which were subsequently excluded from the analysis, resulting in a sample size of 272 for the regression analysis.

We used path analysis to analyze the results (LISREL 9.20). Several fit indices were selected to assess the model. This included the comparative fit index (CFI; Bentler, 1990), values above 0.95 suggest a good fit. In addition, GFI values of 0.93 or above for larger values can also indicate a good fit (Cho *et al.*, 2020). In addition, we used the root mean square error of approximation and its confidence intervals (RMSEA; Browne and Cudeck, 1993). A good fit is dedicated if the RMSEA is below 0.08. Finally, we used the standardized root mean square residual (SRMR; Jöreskog and Sörbom, 1989), with values below 0.05 indicating a good fit (see also Hu and Bentler, 1999), with some leeway in the case of larger samples above >100 where researchers may use 0.08 as SRMR cutoff value (Cho *et al.*, 2020). Another indicator is the extent to which, the χ^2/degrees of freedom value falls below 5, which suggests acceptable fit (Marsh and Hocevar, 1985). In addition, we include the AIC stands for Akaike Information Criterion (Akaike, 1987). Similar to RMSEA, a smaller value suggests a better fit as it can help to compare the model fit.

The analyzes used covariance matrices and the maximum likelihood estimation method (ML). Results using this method assume multivariate normality (Browne, 1974), which was observed in the data. Path models were computed for each of the outcome variables. Preliminary analyzes indicated no interaction effect between meaningfulness and regression in relation to future work ability or disengagement, so the subsequent analyzes were computed without an interaction term. The results of these are summarized in two tables each (Tables 2 and 3 for the dependent variable (DV1), learning ability; and Tables 4 and 5 for DV2, disengagement at work).

Predicting learning ability. The first path model tested partial mediation and was computed with all potential paths between job characteristics, the two mediators and learning ability (DV1, Tables 2 and 3). The χ^2/degrees of freedom value fell below 5, which suggests an acceptable fit (Marsh and Hocevar, 1985). The analyzes generated various fit indices that suggested acceptable fit (e.g. SRMR < 0.080, GFI > 0.93), although the RMSEA was rather low and CFI was >0.95. However, further modifications did not improve the

Table 1.
Correlations between items, the job characteristics composite and age

Study variables	1	2	3	4	5	6	7	8	9	10
(1) Experience w. continuous learning (JS1)	1									
(2) Demand for continuous learning (JS2)	0.50**	1								
(3) Skill variety at work (JS3)	0.41**	0.50**	1							
(4) Autonomy at work (JS4)	0.33**	0.35**	0.43**	1						
(5) Meaningfulness (M1)	0.31**	0.31**	0.43**	0.31**	1					
(6) Recognition at work (M2)	0.30**	0.22**	0.11	0.20**	0.28**	1				
(7) Future learning ability (DV1)	0.09	0.13*	0.18**	0.20**	0.09	−0.03	1			
(8) Disengagement (DV2)	−0.32**	−0.12*	−0.28**	−0.19**	−0.36**	−0.31**	0.04	1		
(9) Composite (job characteristics)	0.77**	0.77**	0.75**	0.71**	0.45**	0.29**	0.20**	−0.31**	1	
(10) Age	0.11	−0.09	0.05	−0.02	0.10	0.16**	−0.13*	−0.15**	0.02	1

Notes: * $p < 0.05$, ** $p < 0.01$. N = 272. JS stands for Job characteristics. The composite includes variables 1) to 4). M stands for mediator, DV for dependent variable

results of the original model. The second model excluded a direct link between job characteristics and learning ability (DV1) to test full mediation. However, by excluding this path, the model fit also declined significantly.

The direct effects for the original model (assuming partial mediation) with the outcome variable learning ability are outlined in Table 3. The results indicate that job characteristics are significant predictors on learning ability. This lends support for *H1a*. The same results were reported for the reduced model when this excluded a direct link between job characteristics and learning ability.

The direct effects of the mediators on learning ability were also examined. The results showed that meaningfulness at work was not a direct predictor of learning ability (*H2a*, Table 3) while recognition was only just significant in the case of the original model ($t = -1.97$, $p = 0.05$; Figure 1, see next page). Yet, as soon as a direct path between job characteristics and learning ability was excluded in the reduced model, no significant direct effects were observed. As a result, *H2a* was not supported. The indirect effects were examined as well. The original model indicated that the job characteristics did not have a significant indirect effect (*H3a*) on learning ability when both mediators were included in the model ($\beta = -0.11$, SE = 0.07, $t = -1.68$, $p > 0.05$). This was also the case for the reduced model ($\beta = 0.01$, SE = 0.05, $t = -0.15$, $p > 0.05$). The same results were obtained when we tested the indirect effect using Hayes (2013) Process Macro (version 2.16.2) in SPSS 25 with the individual mediators alone. Job characteristics continued to have no significant indirect effect results with the single mediator meaningfulness in the model ($\beta = -0.03$, $z = -0.79$, SE = 0.04, $p > 0.05$). The same trend was observed when we ran the mediation model with

Model	χ^2	df	p	RMSEA (CI)	CFI	SRMR	GFI	AIC	$\Delta\chi^2$
Original	47.00	12	<0.001	0.104 (0.073–0.136)	0.91	0.053	0.95	419.47	
Reduced	55.26	13	<0.001	0.109 (0.080–0.140)	0.89	0.071	0.95	425.73	8.26*

Notes: The original model included a direct path between job characteristics and DV1 (learning ability). The reduced model excluded this direct path. Fit declined (based on $\Delta\chi^2$, *$p < 0.01$) when we excluded the direct path between job characteristics and DV1 (learning ability) in the reduced model. CI = confidence interval

Table 2.
Model fit for learning ability path models

Model	Variable relationships	Hypotheses	Stand. coefficient	SE	*t*-value
Original	*Job charact.s → M1*	*H1a*	0.49	0.11	6.86*
	Job charact.s → M2	*H1a*	0.32	0.11	4.59*
	Job charact.s → DV1	–	0.24	0.14	2.79*
	M1 → DV1	*H2a*	−0.07	0.07	−0.94
	M2 → DV1	*H2a*	−0.13	0.06	−1.97*
Reduced	*Job charact.s → M1*	*H1a*	0.49	0.11	6.87*
	Job charact.s → M2	*H1a*	0.32	0.11	4.63*
	Job charact.s → DV1	–	–	–	–
	M1 → DV1	*H2a*	0.04	0.06	0.63
	M2 → DV1	*H2a*	−0.07	0.06	−1.21

Notes: *$p < 0.05$. Job characteristics was measured using a composite including all four JS variables. M1 = meaningfulness, M2 = recognition at work. DV1 = self-reported future learning ability. SE = standard error

Table 3.
Direct coefficients and hypothesis testing for learning ability

only recognition as a single mediator ($\beta = -0.05, z = -1.71, \text{SE} = 0.03, p > 0.05$). As a result, *H3a* was not supported. As a result, there is no support for a partial or full mediation effect.

Predicting disengagement at work. The second path model for disengagement was computed including all potential paths (Tables 4 and 5) between job characteristics, the two mediators and disengagement (DV2), again in line with partial mediation and our earlier analysis. The χ^2/degrees of freedom value for both the original and reduced model were below 5, which suggests an acceptable fit (Marsh and Hocevar, 1985). Most fit indices were acceptable given the sample size (e.g. SRMR < 0.080, GFI > 0.93), although the CFI was

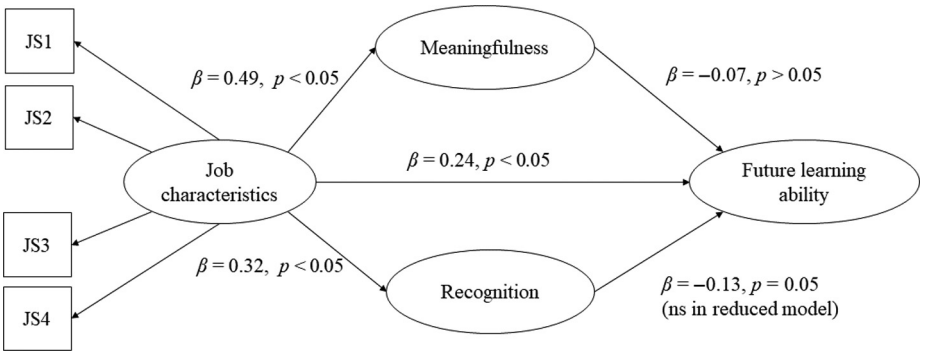


Figure 1.
Original learning ability model featuring path coefficients for all direct effects

Model	χ^2	df	p	RMSEA (CI)	CFI	SRMR	GFI	AIC	$\Delta\chi^2$
Original	57.89	12	<0.001	0.119 (0.089–0.150)	0.90	0.058	0.95	248.82	
Reduced	60.20	13	<0.001	0.116 (0.087–0.146)	0.90	0.062	0.95	249.14	0.32

Table 4.
Model fit for disengagement path models

Notes: The original model included a direct path between job characteristics and DV4 (disengagement). The reduced model excluded this direct path. Fit based on $\Delta\chi^2$ did not improve ($p <$ ns) when we excluded the direct path between job characteristics and DV4 (disengagement) in the reduced model. CI = confidence interval

Model	Variable relationships	Hypotheses	Stand. coefficient	SE	*t*-value
Original	*Job charact.s and M1*	*H1b*	0.49	0.11	6.90*
	Job charact.s and M2	*H1b*	0.32	0.11	4.65*
	Job charact.s and DV2	–	−0.11	0.12	−1.51
	M1 and DV2	*H2b*	−0.36	0.06	−5.72*
	M2 and DV2	*H2b*	−0.19	0.06	−3.41*
Reduced	*Job charact.s and M1*	*H1b*	0.49	0.11	6.87*
	Job charact.s and M2	*H1b*	0.32	0.11	4.63*
	Job charact.s and DV2	–	–	–	–
	M1 and DV2	*H2b*	−0.41	0.05	−7.66*
	M2 and DV2	*H2b*	−0.22	0.05	−4.06*

Table 5.
Direct coefficients and hypothesis testing for disengagement

Notes: *$p < 0.05$. The indirect effect includes both mediators. Job characteristics was measured using a composite including all four JS variables. M1 = meaningfulness, M2 = recognition at work. DV2 = self-reported disengagement at work. SE = standard error

lower and the RMSEA was higher than expected. However, further modifications did not generate any improvement. Excluding the direct link between job characteristics and disengagement (DV2), in line with full mediation, did not lead to a significant change in model fit.

The direct effects for the original and reduced model with the outcome variable disengagement are outlined in Table 5. The results for the directs path coefficients showed that job characteristics had significant and positive direct effects on meaningfulness and recognition as proposed in *H1b*. This result was obtained in both the original and reduced model. Job characteristics did not have a significant direct effect disengagement in the original model (Figure 2), a requirement for partial mediation. Further direct effects showed that meaningfulness and recognition each had a significant negative direct effect on disengagement, in support of *H1b*.

In support of *H3b*, the results indicated the expected significant indirect effect of job characteristics on disengagement, in support of full mediation. This was the case for the original ($\beta = -0.37$, $t = -5.06$, SE = 0.07, $p < 0.05$) and the reduced model ($\beta = -0.42$, $t = -5.93$, SE = 0.07, $p < 0.05$). This also explained why the results for the reduced model were largely identical to the results reported for the original model. Further analysis of full mediation using Hayes (2013) Process Macro in SPSS 25 individually with each mediator alone showed the confirmed indirect effect ($p < 0.002$). In short, both meaningfulness and recognition individually played a significant mediating role between learning experience at work (composite) and disengagement at work in support of full mediation (in partial support of *H3b*).

To check if every single one of the four job characteristics individually had a significant indirect effect, a number of additional mediation analyzes were run using SPSS 25 to assess the reliability of all findings. The results confirmed the above results except in one instance (skill variety was not a significant indirect predictor of disengagement when recognition was the mediator). The mediation results, therefore, suggest quite robust direct and indirect effects.

Group specific sampling effects. Subsequent comparisons and analyzes showed that female participants reported lower future learning ability ($M_{female} = 2.80$, $SD = 1.08$) than their male counterparts ($M_{male} = 3.10$, $SD = 0.82$; $t = 2.198$, $p = 0.029$). Older participants also reported lower future learning ability than younger participants ($\beta = -0.141$, $p < 0.05$). Those who had never changed jobs reported lower future learning ability ($M_{nojobchange} = 2.90$, $SD = 0.83$) than those who had changed jobs at least once ($M_{jobchange} = 3.20$, $SD = 0.91$;

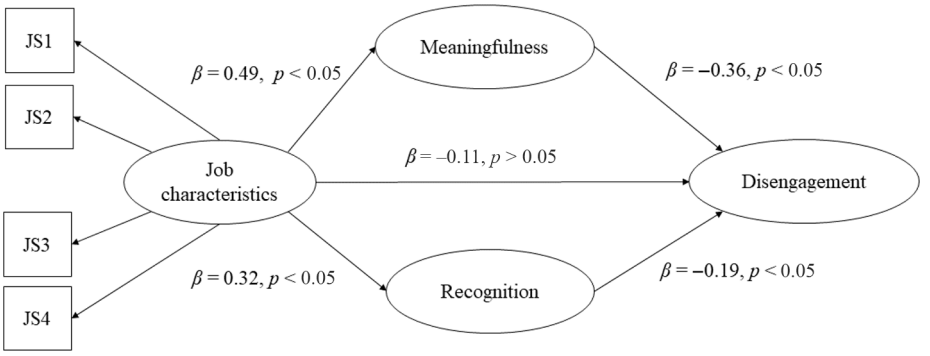


Figure 2.
Original disengagement path model featuring path coefficients for all direct effects

$t = -2.827$, $p = 0.005$). This suggests that having gone through a job change, this can positively impact the future learning ability of employees. Further analysis showed that those who had stayed in one job did not feel as disengaged ($M_{\text{nojobchange}} = 2.31$, $SD = 0.68$) than those who had changed their jobs in the past ($M_{\text{jobchange}} = 2.66$, $SD = 0.75$; $t = -4.05$, $p < 0.001$). This suggests that disengagement may arise among job changers, possibly because the same individuals also reported higher future learning ability.

Discussion

The current study aimed to explore the separate and joint effects of job characteristics and employees' experiences on two outcome variables as follows: employees' self-reported future learning ability and their disengagement at work. There is plenty of evidence that the two job characteristics, skill variety and autonomy can have a positive effect on employee outcomes at work, related to engagement and learning (van Hooff and van Hooft, 2017; Kwon and Cho, 2020). As predicted, our first set of results demonstrated that job characteristics, which can promote learning (such as the experience of and demand for learning, skill variety and autonomy) are – when aggregated into one composite – positive direct predictors of both meaningfulness and recognition at work when the outcome variables were learning ability (*H1a*) or disengagement (*H1b*). This shows that the presence of specific job characteristics can have positive effects on meaningfulness and recognition and carry the potential to shape self-reported disengagement at work. The research also confirms other findings about job characteristics. For example, skill variety can operate as a negative predictor of disengagement, in line with Guglielmi *et al.* (2013). This is also in line with Cangialosi *et al.* (2020), who noted the importance of task-related learning potential in the workplace to foster innovation and continuous learning in changing settings.

Another hypothesis examined the extent to which positive experiences, such as meaningfulness and recognition at work are direct positive predictors of self-reported future learning ability and negative predictors of disengagement at work. Recognition was indeed a significant but very weak direct predictor of learning ability (*H2a*), but this was not the case for meaningfulness at work. However, both variables were significant direct predictors of disengagement (*H2b*). These findings complement other work (Allan *et al.*, 2019; Pavlish and Hunt, 2012) and demonstrate that employee experience, such as meaningfulness and recognition at work can influence employees' involvement at work, expanding our knowledge about their role in the workplace (Montani *et al.*, 2020).

Mediation effects were also examined in relation to the two outcome variables. Job characteristics – when aggregated – were not significant indirect predictors of learning ability as predicted (*H3a*). But the correlations of the three individual job characteristics suggest that the nature of the job does matter (if not in all cases) when we exclude recognition and meaningfulness from the analysis. For example, three out of four job characteristics variable correlated positively with future learning ability (Table 1). More support was obtained for the mediation effect associated with the second outcome variable, disengagement at work (*H3b*). As hypothesized, job characteristics – when aggregated – were significant indirect negative predictors of disengagement (*H3b*). This also reflects negative correlations of all four individual job characteristics with disengagement.

One point that is noteworthy here is that an employee's experience of at least one previous job change reported higher future learning ability. Accordingly, a job change may trigger learning, and thus indirectly increase employees' self-assessments regarding their future learning ability. This is encouraging, especially given that the sample included many mature workers that had little job moving experience overall. Similarly, the fact that those who had remained in one and the same job for their entire career to date also reported less

disengagement provides evidence for a strong self-selection effect whereby some more engaged individuals may also be less inclined to change jobs. The causality of this hypothesis would be worth exploring in future experimental research.

Furthermore, no mediation was observed in relation to future learning ability (*H3a*) but we found a full mediation effect for disengagement at work (*H3b*). This result demonstrates the joint effect of job characteristics and employee experiences on employees' perceptions and engagement at work (Bailey *et al.*, 2019) and shows that perceptions of meaningfulness at work and recognition perceptions are indeed also shaped by external factors in the workplace, such as job characteristics (Chaudhary, 2020).

General practical implications

The results of this research contribute to studies in workplace learning by demonstrating the importance of experience and demand for learning, skill variety and autonomy for both meaningfulness and recognition at work, as well as considering learning ability or disengagement among a group of employees who face obstacles when it comes to their workplace and training participation.

Based on these results, a number of practical recommendations can be formulated. First, the current study shows the importance of both meaningfulness and recognition as pathways to increasing employees' confidence in their own learning ability and engagement at work. Assessing the degree to which both are part and parcel of managerial and feedback practice could also lay the groundwork for similar studies in other organizations. Similarly, appropriate job design that fosters autonomy and allows room for employees to employ and learn different skills, as well as opportunities for learning, should also be pursued whenever possible to reduce disengagement, and thus boredom (van Hooff and van Hooft, 2017).

It is important to recognize that some professional roles will offer more learning opportunities, autonomy and skill variety than others (Bailey *et al.*, 2019). Self-selection into the roles will also play a role as employees may have different boredom thresholds and expectations regarding the learning requirements and demands that they will be facing at work. This means that a number of contextual and experiential variables ought to be considered when preparing interventions for different occupational groups. Ensuring that these employees are experienced learners at work and are consistently prompted to keep learning will play an important role in helping them catch up. Context also matters, of course. It should be noted that our sample was part of a group of participants who were surveyed after returning to work following an absence due to long-term illness. These employees often face situations where new processes and technologies have been implemented. Accordingly, Main *et al.* (2016) suggest that employees who have been absent due to significant health issues should receive the proper combination of interventions that include coaching, education or skills training.

Practical recommendations for managing employee transitions

The results further suggest a number of practical implications for how organizations support employees' transitions and return to work before, during and after medical rehabilitation. For example, employers may wish to investigate how employees can be better supported to participate in workplace learning even if they go part-time, are absent for long periods of time or are getting ready to transition back into work. For example, new technologies provide many options to facilitate relevant learning especially in cases where health issues are involved, through remote learning or on-the-job training (Cangialosi *et al.*, 2020; Cortes *et al.*, 2020). Only if employers increase the opportunities for these employees to

catch up, will such employees be able to regain and maintain their workability through participating in various learning and training initiatives.

Medical rehabilitation programs can be helpful; however, employers should also focus on helping their employees with their re-entry into their workplace as many returning employees experience challenges upon re-entry (e.g. worsening job prospects, lower occupational status, mental health issues; see also Kandar *et al.*, 2020). Based on our insights in this domain, we propose that the degree to which a job offers a supportive learning environment – and specifically the extent to which learning is feasible at work – often requires more attention from line managers and organizations. Employees who return to work following medical issues will benefit from opportunities that allow them to adapt and challenge themselves given their new capabilities or limitations. Creating a learning-friendly culture (Kwon and Cho, 2020) that allows these employees to test themselves, build their self-efficacy and enhancing their work ability can play a significant role in keeping them engaged, motivated and performing well.

Employees returning to work after long-term illness typically are confronted with the need to reevaluate their skills, competencies and capabilities, as well as role fit. Many colleagues or managers may not be aware of this and keep both job demands and resources to a minimum, which may also limit the opportunities for many returning to engage in new self-regulatory approaches to better manage both demands and their health. Such contextual aspects are rarely considered by medical rehabilitation programs. Some excellent ideas and guidance are already available for employers in different countries (e.g. reintegration approaches in Europe, see Mittag *et al.*, 2018; or work coordinators in Australia, see Lane *et al.*, 2017). Our findings, therefore, also point out the wider social and cultural importance of work on employees are traditionally more disadvantaged, excluded or often ignored as a specific target group in sectoral, occupational and organizational training efforts.

Limitations

A few additional methodological shortcomings apply to cross-sectional samples, the use of one-time assessments (rather than longitudinal as recommended for the measurement of boredom at work, see van Hooff and van Hooft, 2017) and one-item measures. Given the narrow focus of our research variables and the nature of the research projects, this approach was chosen to minimize the cognitive load and fatigue for our participants. By choosing one-item measures, we limited the degree to which we captured full constructs. Using one-item measures is also a critique in the research around meaningfulness (Bailey *et al.*, 2019).

The authors, therefore, acknowledge some of the conceptual challenges. Capturing the complexities and nuances of meaningfulness, meaningful work and (dis-)engagement in relation to learning represents a highly complex project, one which requires a recognition of the multidimensionality of variables and the limitations of quantitative methods in this context. This is further exemplified in some of the challenges we faced. For example, one of the challenges concerned the language differences, as well as the definition of meaningfulness and meaningful work (Bailey *et al.*, 2019). In our study, we used one item to assess meaningfulness as a reflection of the value of work to an individual in line with Spreitzer's (1995) work, rather than considering it a psychological state that arises on the basis of the job characteristics as originally proposed by Hackman and Oldham (1975).

While meaningfulness is likely to be shaped by job characteristics, it is likely that other factors are also influencing meaningfulness. Similarly, while engagement and boredom are distinct concepts (Reijseger *et al.*, 2013). In this study, our label "disengagement" was based on the wording of our one-item disengagement measure and suggested disengagement due

to boredom. As a result, it could be argued that this label may represent an oversimplification, which could have been addressed if we had used published scales measuring both engagement and boredom. Further research in this area may wish to implement such a procedure to overcome our limitations.

Limitations may also arise in terms of the analyzes we ran. The demand for learning may, for some employees, be motivating and increase their engagement at work. However, some employees may find such a learning requirement at work tiring and exhausting, resulting in disengagement and in employees losing their confidence in their own learning ability. The current use of single-item measures in the study did not provide enough information to measure such effects.

Future research directions

Future research wishing to replicate our study should consider assessing the potential tipping point at which the demand for learning at work is leading to negative effects for employee engagement and perceived learning ability. Such work should also address another limitation when it comes to how learning is referenced. Further work in this area may wish to identify the different forms of learning (e.g. informal, incidental, vs formal learning) and their more nuanced, individual relationships to our outcome variables.

In the current study, employees reported on their current learning ability and disengagement. However, these employees were also just about to return to work. Future work may wish to examine how self-evaluations of learning ability and disengagement are affected using different theoretical perspectives as well, such as the JD-R model (Demerouti *et al.*, 2001). In our current analysis, we were not able to fully capture all aspects of the JCM (Bakker and Demerouti, 2017). Future research may explore, which theories are more applicable or whether the investigated theories require adaptions.

Finally, of course, it is worth noting that the insights gained are based on a specific context of employees returning to work after a long-term illness. The experiences, struggles and challenges of employees as they return to work and learn to navigate, as well as adapt to the work environment, represent worthwhile research directions (see also Lane *et al.*, 2017). One recommendation here is that future studies adopt a number of approaches (e.g. both qualitative and/or mixed methods approaches) to capture these employees' experiences more comprehensively.

Conclusions

Our results show that future learning ability can be improved among workers with little experience of changing jobs by paying close attention to their job characteristics, the degree to which they find their work meaningful and receive recognition at work. Disengagement at work may be prevented by supporting job characteristics, which, in turn, also improve meaningfulness, one of the two key mediators between job characteristics and disengagement. The mediation effect via recognition further demonstrates that job characteristics can enhance the perception of recognition, which will counteract disengagement. This suggests that employers have several mechanisms to promote engagement, learning and reduce disengagement by auditing job characteristics and reviewing the effectiveness of their mechanisms set up to deliver recognition and provide a degree of meaningfulness for employees at work.

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