Organisationsberatung, Supervision, Coaching
https://doi.org/10.1007/s11613-025-00953-y

Does learning empowerment matter? Development and initial validation of the work-related learning empowerment scale

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Received: 15 May 2025 / Accepted: 13 June 2025

Abstract The concept of *New Learning* emphasizes the psychological empowerment of learners as a prerequisite for effective work-related learning. However, a validated measure to assess empowerment specifically in the context of work-related learning has been lacking. This study introduces the Work-Related Learning Empowerment Scale (WRLES) and investigates its predictive value for key learning and career-related outcomes. Based on a two-wave online study ($N = 258$, recruited via Prolific), we developed and validated a new instrument through exploratory and confirmatory factor analysis. The findings indicate a three-factor structure—self-determination, meaning, and competence—with high reliability and evidence of convergent and discriminant validity. WRLE significantly predicted job satisfaction, work engagement, and both informal and self-regulated learning.

Keywords Psychological Empowerment · New Work · New Learning, work-related learning · Validation

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Published online: 18 August 2025

Ist Learning Empowerment bedeutsam? Entwicklung und erste Validierung der Skala zum arbeitsbezogenen Learning Empowerment

Zusammenfassung Das Konzept des *New Learning* betont das psychologische Empowerment von Lernenden als Voraussetzung für arbeitsbezogenes Lernen. Bisher fehlte ein validiertes Instrument zur Erfassung von Empowerment speziell im Kontext des Lernens am Arbeitsplatz. Diese Studie stellt die *Work-Related Learning Empowerment Scale* (WRLES) vor und untersucht deren prädiktiven Wert für Lern- und Karriereoutcomes. Durch eine Online-Studie mit zwei Messzeitpunkten (N = 258, über Prolific rekrutiert) wurde das Instrument mittels exploratorischer und konfirmatorischer Faktorenanalyse validiert. Die Ergebnisse zeigen eine dreifaktorielle Struktur – *Selbstbestimmung, Bedeutsamkeit* und *Kompetenz* – mit hoher Reliabilität sowie konvergenter und diskriminanter Validität. WRLE sagte signifikant Arbeitszufriedenheit, Arbeitsengagement sowie informelles und selbstreguliertes Lernen vorher.

Schlüsselwörter Psychologisches Empowerment · New Work · New Learning · Arbeitsbezogenes Lernen · Validierung

1 Introduction

The world of work is undergoing profound and ongoing transformation. These complex changes have led to a reconceptualization of work (e.g., Ashford et al. 2007; Spreitzer et al. 2017), including a new set of work characteristics, such as digitalization, flexibility, and self-organization, with the concept of psychological empowerment as its psychological foundation (Schermuly 2019). These developments have also changed how knowledge is acquired, emphasizing continuous, employee-driven learning as essential for both employees and organizations (Schaper et al. 2023). Rapid technological change and shifting economic demands also necessitate that employees learn new skills more quickly (World Economic Forum 2023), making traditional instructor-led training (i.e., formal learning) less sufficient. Consequently, informal and self-regulated learning are gaining importance (Decius et al. 2024b; Kortsch et al. 2024), with a focus on integrating continuous learning experiences into daily work life (Beier et al. 2025; Graßmann and Decius 2023).

These changes have been taken up in the concept of *New Learning* (Decius et al. 2022; Foelsing and Schmitz 2021). In this regard, the psychological empowerment of the learner has been positioned as a key factor in New Learning (Foelsing and Schmitz 2021). Psychological empowerment has been conceptualized as a construct comprising the four dimensions of meaning, competence, self-determination, and impact (Spreitzer 1995). In combination, they have been shown to lead to a wide range of positive attitudinal and behavioral outcomes (Seibert et al. 2011; Llorente-Alonso et al. 2024). Psychological empowerment has furthermore been proposed to enable employees to identify and make use of learning opportunities in the flow of work (Decius et al. 2022). Although the relevance of psychological empowerment is emphasized in conceptual models of New Learning (Decius et al. 2022; Foelsing

and Schmitz 2021), several open questions remain. While psychological empowerment in the context of work in general has been extensively studied, its application to work-related learning remains underexplored. Existing studies have adapted empowerment concepts to educational or training settings (Frymier et al. 1996; Creon and Schermuly 2022) but differ in their conceptualizations and dimensional structures. These inconsistencies, along with the reliance on study-specific instruments, highlight the lack of a validated, comprehensive measure of work-related learning empowerment (WRLE).

To address these issues, our study pursues two goals. First, we introduce and investigate a newly developed scale to measure the construct of *Learning Empowerment* in the workplace, the *work-related learning empowerment scale (WRLES)*. Secondly, since the longitudinal effects have so far been underresearched (Llorente-Alonso et al. 2024), we will provide longitudinal data investigating the predictive value of WRLE for three types of work-related learning (i.e., formal, informal, self-regulated). We thereby aim to contribute to the empirical foundation of New Learning and offer practitioners in human resource development and organizational learning relevant insights for promoting learning through psychological empowerment.

2 Theoretical background and hypotheses

2.1 New learning and psychological empowerment

As continuous and lifelong learning through and for work have become increasingly important to meet the challenges of the changing world of work (Kraiger and Ford 2021), traditional approaches—often characterized by formal learning—are being replaced or complemented by more learner-centered forms of development. More emphasis has been put on flexible learning forms, such as informal (Decius et al. 2019) and self-regulated learning (Sitzmann and Ely 2011). The concept of *New Learning* has emerged to reflect this shift, drawing conceptual inspiration from New Work (Bergmann 2019; Schermuly 2019). *Psychological empowerment* has been used as the theoretical foundation of New Learning (Decius et al. 2022; Foelsing and Schmitz 2021). From this psychological perspective, New Learning places strong emphasis on the autonomy and motivation of the individual, highlighting the agency of the learner. Learners are viewed as psychologically empowered actors who perceive learning opportunities in their environment, form learning intentions, and engage in formal, informal, or self-regulated learning activities (Decius et al. 2022).

Taken together, New Learning understands learning as "a socially-embedded process in which the protean and empowered learner seeks and utilizes learning opportunities to engage in meaningful formal, informal and self-regulated learning to achieve subjectively valuable learning outcomes and personal growth. New Learning takes place in a new societal and organizational context brought forth by digitalization and characterized by dynamic change, uncertainty, and complexity" (Decius et al. 2022, p. 5232). Despite its growing practical relevance, New Learning remains a relatively new and still under-theorized concept. Therefore, we want to investigate

how psychological empowerment can be specifically operationalized and measured in the domain of work-related learning.

2.2 Conceptualization and dimensionality of work-related learning empowerment

Psychological empowerment with its dimensions meaning, competence, self-determination (sometimes also referred to as autonomy), and impact (Spreitzer 1995) has not only been scholarly studied across various organizational contexts as demonstrated by several meta-analyses (e.g., Seibert et al. 2011; Llorente-Alonso et al. 2024), but has also been increasingly recognized in organizational practice (Schermuly 2019; Foelsing and Schmitz 2021). Several studies have confirmed the originally proposed four-factor structure of Spreitzer's empowerment scale (e.g., Spreitzer 1995; Albar et al. 2012; Boudrias et al. 2004). On the other hand, some studies also question this structure as other factor structures have also been found (e.g., Hancer et al. 2005; Fulford and Enz 1995). Additionally, Spreitzer herself formulated the question, if "the potency in empowerment [is] in the gestalt or the individual dimensions" (Spreitzer 2008, p. 64) and conceptualized empowerment as a second-order factor to account for the shared variance of the individual dimensions and connected the dimensions additively (Spreitzer 1995). Seibert et al.'s meta-analysis (2011) yielded evidence for the identification of psychological empowerment as a unitary second-order latent construct, leading the authors to conclude that psychological empowerment can be conceptualized as "a single second-order construct made up of the four cognitions of meaning, competence, self-determination, and impact" (p. 995).

Building on the studies of psychological empowerment and the theoretical foundations of Thomas and Velthouse (1990) as well as Spreitzer (1995), we define *work-related learning empowerment (WRLE)* as learners' positive motivational beliefs regarding their work-related learning (such as, meaning, competence, self-determination, and impact). To date, very few studies have examined psychological empowerment in the context of learning (Frymier et al. 1996; Creon and Schermuly 2022). Only Frymier et al. (1996) investigated the factorial structure by applying the concept of psychological empowerment to the educational classroom setting. They based their conceptualization of student empowerment on Thomas and Velthouse's (1990) model–which is similar to that by Spreitzer (1995)–with the four factors of meaningfulness, competence, choice (self-determination), and impact, and developed an instrument to assess psychological empowerment in the classroom. However, contrary to the assumptions, in their results choice did not emerge as a separate factor, yielding a three-factor solution, with choice items loading on the impact factor. They did not find a second-order factor. In this respect, the dimensional structure in learning contexts is not yet clearly understood.

Based on the above, we formulate our first research question:

RQ1 What is the factorial structure of WRLE?

2.3 Outcomes of WRLE

To theorize the outcomes of WRLE, we draw on the sustainable career framework by De Vos et al. (2020), which conceptualizes career sustainability through a dynamic fit between person and context, reflected in the three dimensions of happiness, health, and productivity. This model offers a useful lens to structure the expected effects of WRLE, as it emphasizes the long-term alignment of individual needs, well-being, and performance—that are not only related to learning and career.

WRLE may contribute to sustainable career outcomes by enabling individuals to take ownership of their development. When employees feel psychologically empowered to learn, they experience their learning as meaningful and aligned with personal values, which supports *job satisfaction*—a core indicator of happiness (Fisher 2010). In terms of health, WRLE is expected to strengthen *work engagement*, a key psychological resource. Work engagement reflects a positive work-related state characterized by vigor, dedication, and absorption (Schaufeli et al. 2002). Engaged employees feel energized and connected to their work (Bakker et al. 2014), which signals resilience and mental well-being—core aspects of the health dimension. Furthermore, by promoting proactive learning behaviors—including *formal, informal, and self-regulated learning*—WRLE may enhance productivity and employability in dynamic work contexts (Decius et al. 2024b).

Therefore, we examine whether WRLE can be linked to positive outcomes across all three sustainability domains.

RQ2 To what extent does WRLE predict outcomes in terms of happiness (i.e., job satisfaction), health (i.e., work engagement), and productivity (i.e., formal, informal, and self-regulated learning)?

3 Method

3.1 Study design and sample

The data collection for this study was part of a larger multi-wave online study on the topic of work-related learning. The data was collected from June 2024 to February 2025 on the Prolific platform. Online panel data have been shown to yield comparable results to conventional data collection procedures and are economical for scale development (Lutz 2016; Porter et al. 2019; Walter et al. 2019).

For the present paper, we used data from two times of measurement (T1 = December 2024 and T2 = February 2025) which were 8 weeks apart. The sample used in the present study consisted of $N = 258$ working adults. Participants were compensated £3.33 (T1) resp. £2.96 (T2) (approx. $3) for their time. To ensure data quality, we excluded data from participants who did not pass the two attention checks (e.g., "Please select 'agree' to ensure data quality."). In this final sample, 44.96% of participants identified as female, the mean age was 44.1 years ($SD = 11.1$ years). The sample was highly educated with 15.5% having a high school diploma or equivalent degree and 82.2% having at least a bachelor's degree. The participants

Table 1 Factor Loadings resulting from the EFA ($N = 129$)

Item code	Item text	Factor 1	Factor 2	Factor 3	Uniqueness
EP04_08**	I was able to decide on my own how to go about my own learning activities at work	0.994	–	–	0.127
EP04_09*	I've had considerable opportunities for independence and freedom in how I learned at work	0.991	–	–	0.123
EP04_07*	I had significant autonomy in determining how I learned at work	0.971	–	–	0.142
EP04_11	I had a great deal of control over how I apply what I've learned to my job	0.812	–	–	0.296
EP04_12	My work-related learning enabled me to have significant influence over what happened at work	0.625	–	–	0.425
EP04_03**	The work-related learning I was engaged in, was meaningful to me	–	1.046	–	0.021
EP04_02*	My work-related learning activities were personally meaningful to me	–	0.994	–	0.105
EP04_01*	The work-related learning I was engaged in, was very important to me	–	0.948	–	0.133
EP04_10	My work-related learning had a large impact on what happened at work	–	0.456	–	0.474
EP04_05**	I felt self-assured about my capabilities to perform my work-related learning activities	–	–	1.004	0.037
EP04_06*	I mastered the skills necessary for my work-related learning	–	–	0.837	0.324
EP04_04*	I was confident about my ability to learn in my job	–	–	0.835	0.275
Reliability ω		0.947	0.956	0.925	–

Rotation method is promax. Only loadings above 0.4 are displayed (otherwise a dash appears in the cell).
* indicates the items of the final scale (WRLES)
** indicates the items of the short version of the final scale (WRLES-3)

worked in services (30.23%), industry (21.71%), the public sector (18.61%) trade and commerce (10.10%) or indicated that they worked in another sector (18.21%).

3.2 Measures

3.2.1 Work-related learning empowerment

To measure WRLE, we adapted the twelve items from the Psychological Empowerment Scale by Spreitzer (1995), to the domain of work-related learning. Specifically, we transferred the four dimensions of psychological empowerment—meaning, competence, self-determination and impact—to the context of work-related learning activities in general, that is, without reference to specific learning forms (such as formal or informal). To do this, we replaced terms such as "work" or "job" with "work-related learning (I was engaged in)." For example, the original item "The work I do is very important to me" was adapted to "The work-related learning I was engaged in was very important to me." Similarly, "I can decide on my own how to go about doing my own work" was changed to "I was able to decide on my own how to go about my own learning activities at work." Our adaptation aimed to capture the extent to which employees perceived themselves as empowered in their learning processes—i.e., whether they found their learning meaningful, felt competent and autonomous in the learning process, and perceived their learning as having an impact on their work (see Table 1 for the items). The twelve items had to be rated on a 7-point Likert scale from 1 = "Strongly disagree" to 7 = "Strongly agree", with reference to the last four weeks.

3.2.2 Work-related learning (T2)

We measured the three forms of work-related learning (i.e., formal, informal, and self-regulated learning), using established scales, which we adapted where necessary.

We used nine items to measure *formal learning*, which we adapted from Dixson's (2010) Online Student Engagement Scale to fit online as well as face-to-face formal learning formats. The subscales skill based, emotional and participatory engagement in formal learning were measured with three items each. The subscale referring to performance (e.g., "getting good grades") was excluded with regard to the workplace setting. Examples are "I looked over course notes to make sure I understood the material" (skills), "I found ways to make the course material relevant to my job" (emotion), "In courses or events, I participated actively in small-group discussions (face-to-face or via email/online chats)" (participation). Items were rated on a five-point-Likert scale (from 1 = strongly disagree to 5 = strongly agree). The reliability was $\omega = 0.950$.

Informal learning was measured with the eight-item version of the informal learning scale from Decius et al. (2023) with a 6-point Likert response format ranging from 1 = "Not agree at all" to 6 = "Fully agree". A sample item is "I wanted to learn something new for myself because then I could solve problems at work faster." The reliability was $\omega = 0.89$.

Self-regulated learning was assessed with four items from Graßmann et al. (2025), rated on a 6-point Likert scale ranging from 1 = "Not agree at all" to 6 = "Fully agree". A sample item is "At work, I adapted my learning strategies to make the most progress in learning." The reliability was ω = 0.93.

3.2.3 Job satisfaction (T2)

Job satisfaction was measured using a single-item-measure based on Matthews et al. (2022). "I am satisfied with my career" was changed to "I was satisfied with my job." The item was supplemented with the reference period of four weeks ("In the last four weeks, ..."). The five-point scale ranged from 1 = "Disagree" to 5 = "Agree."

3.2.4 Work engagement (T2)

Work Engagement was assessed using the ultra-short version of the Utrecht Work Engagement Scale (UWES-3; Schaufeli et al. 2019). The scale consists of three items, each representing one of the core dimensions of work engagement: vigor ("At my work, I felt bursting with energy"), dedication ("I was enthusiastic about my job"), and absorption ("I was immersed in my work"). Respondents rated their agreement on a 7-point scale ranging from 1 = "never" to 7 = "always", with reference to the last four weeks ("Please refer to the last 4 weeks when answering."). The UWES-3 has been shown to be a reliable and valid ultra-short measure of overall work engagement across different occupational and cultural contexts. The reliability was ω = 0.926.

3.3 Analytical strategy

We used JASP (version 0.19.1; JASP Team 2024) for most statistical analyses. Only structural equation modeling (SEM) was conducted with R (version 4.3.1) and lavaan (version 0.6-19). For the scale development we used a two-step approach. In the first step, we randomly divided the sample into two equal groups (each N = 129). With the first half of the sample, we performed an exploratory factor analysis with parallel analysis to check the factorial structure. We then used the second half of the sample to confirm the factorial structure. SEM with the WRLES (T1) and the outcomes examined (T2) was then calculated using the complete sample.

4 Results

4.1 Factorial structure of the work-related learning empowerment scale (WRLES)

The descriptive statistics of the twelve items measuring WRLE in the T1 sample can be seen in the supplementary material at https://osf.io/am9rz. First, exploratory factor analysis (EFA) was calculated using the first half of the sample (N = 129). The Bartlett's test (X^2 = 1641.058, df = 66, p < 0.001) as well as the Kaiser-Meyer-Olkin

Table 2 Model fit of the CFA and latent factor correlations

Model	X^2, df, p	CFI	RMSEA [90% CI]	SRMR	Latent factor correlations
Model 1 (3-factor EFA model)	$X^2 = 177.021$, df = 51, $p < 0.001$	0.93	0.138 [0.116, 0.161]	0.078	Factor 1 ↔ Factor 2: 0.673 Factor 1 ↔ Factor 3: 0.602 Factor 2 ↔ Factor 3: 0.582
Model 2 (4-factor model according to Spreitzer)	$X^2 = 133.977$, df = 48, $p < 0.001$	0.95	0.118 [0.094, 0.142]	0.047	Factor 1 ↔ Factor 2: 0.572 Factor 1 ↔ Factor 3: 0.611 Factor 1 ↔ Factor 4: 0.827 Factor 2 ↔ Factor 3: 0.552 Factor 2 ↔ Factor 4: 0.704 Factor 3 ↔ Factor 4: 0.884
Model 3 (3-factor EFA model with only three items per factor)	$X^2 = 37.739$, df = 36, $p < 0.037$	0.99	0.067 [0.017, 0.106]	0.030	Factor 1 ↔ Factor 2: 0.605 Factor 1 ↔ Factor 3: 0.550 Factor 2 ↔ Factor 3: 0.567

(KMO) index (overall KMO = 0.85, smallest individual KMO = 0.75) indicated that the sample is suitable for conducting an EFA (Hutcheson and Sofroniou 1999). Principal axis analysis with maximum likelihood estimation was used as a factor extraction method and promax rotation as an oblique rotation technique. A parallel analysis revealed three factors, as shown in Table 1. It can be seen that all three competence items composed a single factor (factor 3). Factor 2 is composed from all three meaning items (EP04_03, EP04_02, EP04_01) and one impact item (item EP04_10), with the meaning items loading significantly higher on the factor. Factor 1 is composed of all three self-determination items (EP04_08, EP04_09, EP04_07), which also have the highest factor loadings, and two meaning items (EP04_11 and EP04_12).

In a second step, confirmatory factor analysis (CFA) was conducted with the second half of the sample ($N = 129$) to test the factorial structure we found in the exploratory analysis (i.e., EFA, model 1 in Table 2). This method provides various fit indices to assess how well the proposed model represents the observed data. The fit indices were within the acceptable range with a CFI = 0.93 and an SRMR = 0.078 according to accepted cut-off values specified (Hu and Bentler 1999; Kline 2023), although the RMSEA = 0.138 was considerably above the limit. The reliability (McDonald's ω) values were very good (Factor 1: ω = 0.947; Factor 2: ω = 0.956; Factor 3: ω = 0.925).

Additionally, we computed a four-factor model according to the factor structure assumed by Spreitzer (model 2 in Table 3). This resulted in a similar model fit with slightly better fit indices (CFI = 0.95, SRMR = 0.047, RMSEA = 0.118). Because Model 1 and Model 2 are nested, we compared these models statistically. Even though, Model 2 (AIC = 3886.09, BIC = 4006.20) had a significantly better model fit ($\Delta\chi^2 = 43.04$, $\Delta df = 3$, $p < 0.001$) than Model 1 (AIC = 3923.14, BIC = 4034.67) we preferred the three-factor model (Model 1) for two reasons: First, Model 1 is less complex und thus more parsimonious in terms of number of factors, and second, because further analysis revealed that some of the factors showed latent correlations

Table 3 Average variance extracted and shared variance of the final model (model 3)

	1	2	3
1. WRLES Self-determination	0.84	0.37	0.30
2. WRLES Meaning	–	0.92	0.32
3. WRLES Competence	–	–	0.80

The average variance extracted (*AVE*) of each factor is presented on the diagonal. The shared variance (*SV*) is presented above the diagonal

above 0.80 (i.e., correlations between factor 4 with factors 1 and 3). This may indicate problems with discriminant validity (Rönkkö and Cho 2020).

Therefore, in order to obtain the final scale (i.e., the WRLES) with a clear factor structure that is also short and therefore application-friendly, we additionally calculated a three-factor model based on Model 1, in which we only included the three items with the highest loadings per scale (see factor loadings in Table 1). Thus, we excluded items EP04_11, EP04_12, and EP04_10 (i.e., the items of the impact factor according to Spreitzer) before calculating the model. These items contained phrases that expressed not only impact but also self-determination (e.g., EP04_11: "great deal of control," EP04_12: "enabled me to have significant influence over what happened at work") and were therefore not particularly discriminating. This model (model 3) showed a very good model fit, with all fit indices considered falling within the cutoff limits (CFI = 0.99, SRMR = 0.030, RMSEA = 0.067). Since the items of the three scales of the final factor structure correspond exactly to the items of Spreitzer's concept, we name the factors accordingly: Factor 1 = Self-Determination, Factor 2 = Meaning, Factor 3 = Competence. The reliability values were also very good (Factor 1/WRLES Self-determination: $\omega = 0.941$; Factor 2/WRLES Meaning: $\omega = 0.973$; Factor 3/WRLES Competence: $\omega = 0.925$).

4.2 Convergent and discriminant reliability

For examining convergent and discriminant validity, we calculated the values for average variance extracted (AVE; Fornell and Larcker 1981) and shared variance (SV) (i.e., the inter-construct squared correlation) across the factors. If the AVE values are greater than the SV value between two factors of interest, this provides evidence for discriminant validity (Farrell 2010). As can be seen in Table 3, the AVE values of all three factors are at least 0.80, thus exceeding the 50% rule of thumb (Hair et al. 2010). We therefore can assume convergent validity of the WRLES. Furthermore, the SV values range between 0.30 and 0.37 (see Table 3). This means that all AVE values are greater than the corresponding SV estimates, which indicates discriminant validity (Hair et al. 2010).

4.3 Short measure (WRLES-3)

In order to provide researchers with an additional measure that reflects general work-related learning empowerment and can be used in larger studies that do not allow for the nine-item version, we also offer a short scale consisting of three items. This makes sense for questions that focus less on the influence of learning empowerment

with its sub-facets and more on the whole, as the correlation between the three factors is between 0.5 and 0.6. This measure consists of one item per factor, with the item with the highest loading in Model 1 (items with two asterisks, see Table 1) being selected. The three-item short Work-Related Learning Empowerment Scale (WRLES-3) has a reliability of $\omega = 0.767$.

4.4 WRLES and different outcomes

To investigate the predictive validity of the WRLES we used SEM. Prior investigation revealed that there were many missing values in the formal learning scale (between $N = 89$ for item 1 and $N = 139$ for item 5) because the participants indicated that they did not participate in such an activity. Therefore, we excluded this scale before calculating the model. A model with WRLES Self-determination, WRLES Meaning, and WRLES Competence at t1 and the t2 outcomes for happiness (i.e., job satisfaction), health (i.e., work engagement), and productivity (i.e., informal and self-regulated learning) had a good model fit ($X^2 = 676.540$, $df = 255$, $p < 0.001$; CFI = 0.93, RMSEA = 0.080; SRMR = 0.058). The loadings are displayed in Fig. 1. WRLES Self-determination had only significant relations with job satisfaction ($\beta = 0.146$, $p = 0.028$) and work engagement ($\beta = 0.154$, $p = 0.015$), WRLES Meaning had significant ($p < 0.001$) relations with all outcomes, while WRLES Competence had no significant relations with the outcomes.

An additional SEM with WRLES-3 as a predictor instead of the three WRLES factors revealed a poor model fit ($X^2 = 542.856$, $df = 143$, $p < 0.001$; CFI = 0.89, RMSEA = 0.104; SRMR = 0.065). Only after model modifications (allowing correlations of the informal learning items IL3 and IL4 as well as IL4 and IL5), the model fit was acceptable ($X^2 = 399.110$, $df = 141$, $p < 0.001$; CFI = 0.93, RMSEA = 0.084; SRMR = 0.055). In this model the WRLES-3 had significant relations to job satisfaction ($\beta = 0.626$, $p < 0.001$), work engagement ($\beta = 0.757$, $p < 0.001$), informal learning ($\beta = 0.655$, $p < 0.001$), and self-regulated learning ($\beta = 0.605$, $p < 0.001$). Correlations of all variables can be seen in the online supplement (https://osf.io/am9rz).

5 Discussion

In the context of rapid technological change and increasing demands for adaptability, continuous, informal and self-directed learning has become essential (Kauffeld et al. 2025). The concept of *New Learning* responds to these developments by emphasizing psychological empowerment. However, empirical research on how to operationalize and measure work-related learning empowerment remains scarce. To address these gaps, our study pursued to investigate the newly developed *Work-Related Learning Empowerment Scale* (WRLES) and sought to provide longitudinal data on the predictive value of WRLE.

This study makes two major contributions. First, we developed and validated the Work-Related Learning Empowerment Scale (WRLES), offering a reliable and concise measure of psychological empowerment in the context of work-related learning. The final structure comprises three factors—*self-determination, meaning*, and *com-*

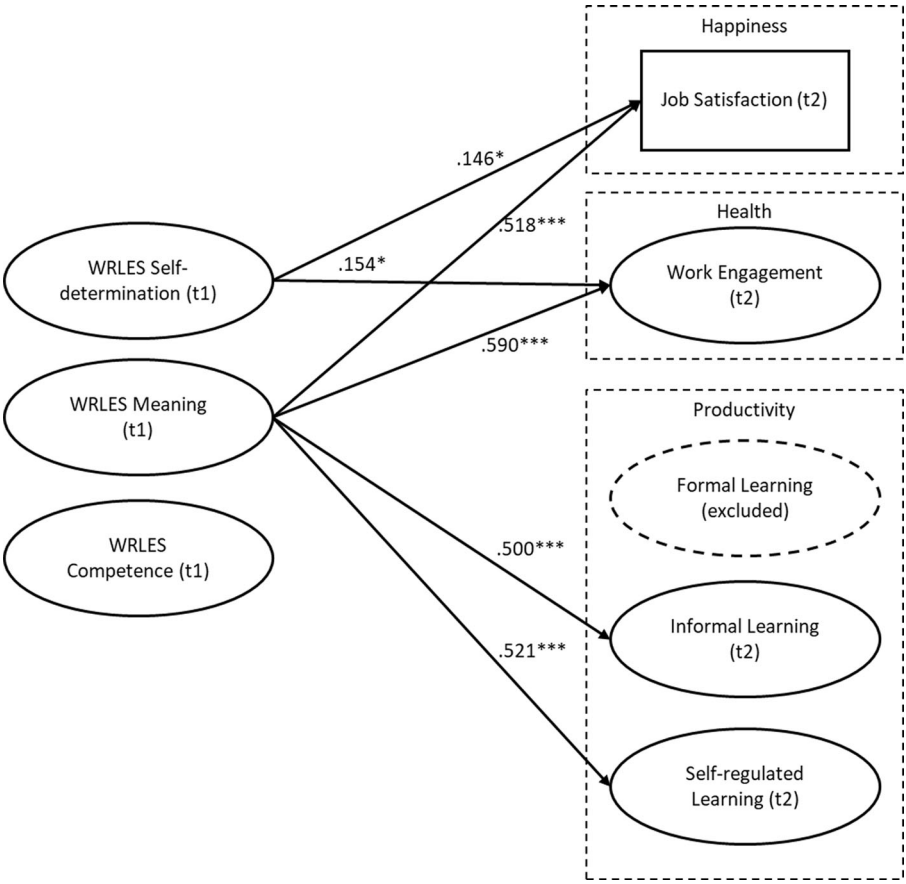

Fig. 1 Results of the structural equation model. (Only significant ($p < 0.05$) paths are displayed. ***$p < 0.001$, *$p < 0.05$)

petence—reflecting core dimensions of psychological empowerment. Notably, the *impact* dimension, originally proposed by Spreitzer (1995), could not be clearly distinguished in the learning context and was therefore excluded from the final model, contributing to both theoretical clarity and practical usability. We also introduced a brief version of the scale (WRLES-3) that captures overall work-related learning empowerment with one item per dimension. This responds to previous remarks (e.g., Spreitzer 2008), which suggests the possibility of a higher-order empowerment construct and offers a practical solution for studies where brevity is required.

Second, WRLE was shown to be a significant predictor of relevant learning and career outcomes, guided by the Sustainable Careers Framework (De Vos et al. 2020). While the WRLES subscale competence had no significant associations, the WRLES subscales self-determination and meaning predicted job satisfaction and work engagement (happiness and health dimensions of sustainable careers) and WRLES meaning was additionally associated with informal and self-regulated learning (productivity). The short version (WRLES-3) had similar associations with

the investigated outcomes. This underscores the value of psychological learning empowerment for promoting sustainable employability and well-being.

5.1 Theoretical implications

This study makes several theoretical contributions. First, our results contribute to the theoretical foundation of New Learning by applying the concept of psychological empowerment to the field of work-related learning. Our findings specifically show that learning-related beliefs are related to relevant learning and career outcomes. Our findings substantiate the role of psychological empowerment as a foundational mechanism of New Learning (Decius et al. 2022). The findings also support the idea that psychological empowerment is not just relevant in general work settings but—driven by the WRLES meaning dimension—also plays a key role in work-related learning behavior, especially in dynamic and self-directed environments (Kauffeld et al. 2025). Second, we contribute to the ongoing debate on the dimensionality of psychological empowerment. While many studies treat it as a unitary construct (e.g., Seibert et al. 2011), our study shows first indications that, within the learning domain, a parsimonious three-factor structure—comprising self-determination, meaning, and competence—offers the best empirical and conceptual fit. The impact dimension, often central in work contexts (Spreitzer et al. 1997), did not emerge clearly. The effects of the WRLES subscale *meaning* are particularly noteworthy, as this was the only subscale found to be associated with all outcomes considered. This can be explained by the central role of meaning in maintaining motivation and commitment (e.g., Deci and Ryan 2000; Hackman and Oldham 1976). In the context of work-related learning, meaningfulness can help individuals connect learning activities to their personal identity and long-term career goals, thereby promoting sustainable employability and well-being. These findings align with Spreitzer's (2008) view that empowerment may function both as a gestalt—we would add that in a learning context, this may be driven by the meaning dimension—and through distinct dimensions with different antecedents and outcomes. Third, the WRLES-3 short scale allows work-related learning empowerment to be assessed as an overall construct, reflecting the theoretical idea of a higher-order empowerment factor. This dual approach—distinguishing subdimensions while enabling holistic assessment—can inform future research on motivation, learning, and self-development at work.

5.2 Practical implications

This study also has implications for human resource development practitioners in organizations. First, we offer starting points for practitioners what psychological empowerment can mean in the context of work-related learning and why it is important. In a dynamic world of work, the responsibility for learning will increasingly shift towards the learner, requiring a sense of psychological agency and motivation on the part of the learner (Beier et al. 2025; Decius et al. 2022). Second, the WRLES offers a practical tool to assess and foster psychological empowerment in learning processes. By identifying which dimensions of empowerment are lacking—be

it self-determination, competence, or meaning—targeted interventions can be designed to strengthen learning motivation and initiative. The aspect of meaning can, for example, be addressed through a learner's direct supervisor as well as on the organizational level through respective communication measures, such as including learning in value or strategy statements. Building learning competence could for example already be included into onboarding programs for new employees (Mitschelen and Kauffeld 2025), or supported through guided learning circles in which learners can explore and reflect on different learning strategies. These individual-level interventions can complement organizational-level interventions, such as building communities of practice (see Kortsch et al. 2023a) or fostering a strong learning culture (Kortsch and Kauffeld 2019). A learning culture can also compensate for a lack of psychological empowerment in New Learning (Kortsch et al. 2023b). This underscores the importance of cultivating a supportive learning culture as a key lever for work-related learning.

5.3 Limitations and future research

This study has several limitations. First, the sample consisted mainly of highly educated participants from an online panel, which may limit the generalizability of the findings. Future research should aim to replicate the results across different occupational groups and cultural contexts. Second, the *impact* dimension, originally proposed by Spreitzer (1995), could not be clearly distinguished in the learning context and was excluded from the final model. However, this may be due to conceptual overlaps with *self-determination* items, which future studies should investigate more systematically. The question also arises here as to whether learning behavior and learning transfer are confounded in these items. Third, due to a high number of missing responses, formal learning had to be excluded from the outcome analysis. Although bivariate correlations suggest meaningful associations, structural modeling was not possible. One plausible reason is the short interval of eight weeks between measurement points, during which most participants did not engage in formal learning. Previous research has also reflected on this well-known measurement problem of formal learning, and we support the call for the development of a more accurate operationalization of formal learning (Decius et al. 2024b). Until such advancements are made, future studies should consider extending the time frames to better capture such learning activities. Finally, it should be noted that the study focused exclusively on work-related (psychological) learning empowerment. Future studies should also incorporate the original scale for psychological empowerment in order to demonstrate the incremental validity of the WRLES compared to general psychological empowerment.

In terms of future research directions, psychological empowerment could be further examined in structured learning settings and across different learning formats. Moreover, the role of psychological empowerment in cognitive and metacognitive learning processes deserves closer attention. The *Self-regulated Informal Learning Cycle* (SILC; Decius et al. 2024a) offers a promising framework for this, as psychological empowerment may facilitate the intentional and reflective phases of informal learning. An open question remains regarding which levers organizations can uti-

lize to enhance WRLE. One potential approach, aligned with previous research (Decius et al. 2024c), is to consider the suitability of different learning method clusters—emerging from self-directed e-learning as well as classroom-based learning in both physical and virtual settings—from a self-determination perspective as a starting point. Finally, the topic of environmental sustainability in learning contexts—so far largely neglected—could be explored more deeply. As sustainable behavior becomes more relevant in the workplace (Zacher et al. 2023), future studies might examine how empowered learners engage in "green learning" and contribute to long-term organizational and ecological goals (Kauffeld et al. 2025; Lorber et al. 2025).

Funding Open Access funding enabled and organized by Projekt DEAL.

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