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COMMENTARY

The future of work and learning hinges on social and relational processes

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Beier et al. (2025) argue that industrial and organizational (I-O) psychologists should take a person-centered approach to studying lifelong learning and skill development rather than a traditional organization-centered approach to workplace training and development. We agree that this paradigm shift is critical for understanding the nature of 21st century adult learning. However, we argue that person-centered approaches must also explicitly incorporate social and relational processes. The focal article acknowledged the impact of societal trends on access to/quality of social learning opportunities (e.g., reduced access to informal learning for remote and /or nonstandard workers). We extend this argument with a systematic treatment of the role of social/relational processes in lifelong learning and skill development. Specifically, we consider learning through the lens of a multilevel, person-centered adult learning ecosystem framework (Lyndgaard et al., 2024). Below, we identify key social and relational aspects of lifelong learning at three levels of analysis captured by our ecosystem framework. We then discuss obstacles to implementing these person-centered approaches in I-O research, informed by classic organizational theory (Kerr, 1975).

The adult learning ecosystem

Consistent with the focal article's call to "understand the determinants, facilitators, and barriers to adults learning in online learning environments" (p. 31), in this commentary our discussion of the relationship between social and relational processes and lifelong skill development is informed by our framework of the adult learning ecosystem (Lyndgaard et al., 2024), with basic tenets described here to provide context for subsequent sections. The framework was synthesized from research on working adults engaged in an online master's degree in computer science. Because it takes the frame of lifelong learning rather than workplace training, it is well-suited for exploring person-centered learning experiences among those within or seeking to join the workforce. The ecosystem metaphor organizes (a) multilevel learning processes that shape lifelong learning, (b) criteria by which to evaluate learning effectiveness, and (c) personal and contextual variables that may moderate these processes.

- *Microlevel learning* refers to the core cognitive/metacognitive components of knowledge acquisition and skill learning, which are engaged in episodic learning experiences.
- *Mesolevel learning* refers to the protracted motivational and social resources/experiences that shape adults' continued engagement in learning over time.
- *Macrolevel learning* refers to processes that account for adults' capacity to transfer lifelong learning for work/career goal achievement in the context of other life demands.

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Table 1. Guiding Questions to Evaluate Organizational Support for Lifelong Learning

	Guiding questions
Microlevel	1. To what extent are workers in close proximity with colleagues as they complete daily tasks? 2. Can work tasks be designed to encourage greater collaboration or opportunities for feedback?
Mesolevel	1. How do positive social workplace learning experiences contribute to the development of adult learning self-efficacy? 2. Is mentoring formally embedded in job tasks, or does the job design allow for natural, generative social interactions to develop over time?
Macrolevel	1. Do workers have chances to engage in "stretch" assignments or work tasks that facilitate new learning, even if these might be less "productive" in the short term? 2. What organizational policies help provide the type and amount of flexibility necessary for adults to engage in lifelong learning and skill development that takes place outside of the workplace? 3. What systematic inequities make learning less equitable across portions of the global workforce?

In the following sections, we describe examples of social and relational processes that operate at each of these three levels, starting with the microlevel. Table 1 summarizes examples of evaluative questions related to this discussion, which can guide researchers and practitioners on how to create environments where social learning can thrive across levels.

Social interaction facilitates microlevel knowledge and skill acquisition

Self-directed learning often entails self-managing a series of learning episodes with the intention of mastering a given skill. Although this may be appropriate for well-defined declarative knowledge or procedural skills, an understudied type of learning episode is the everyday informal interactions in which individuals generate knowledge through analyzing and reflecting on work-related experiences with a peer or leader. These discursive learning processes have been termed as "coactive vicarious learning" (CVL) by Myers (2018). CVL yields knowledge that cannot be generated through a single worker's intrapersonal understanding of an experience, or their passive observation of a peer's experience.

Similar to how repeated episodes of hands-on practice help to proceduralize skill learning in traditional microlevel learning contexts, repeated CVL interactions augment individuals' *capacity* to learn by refining perspective-taking abilities, forming transactive memory (i.e., awareness of what coworkers know), and increasing self-efficacy (Myers, 2018). In CVL, experience is construed as the primary input of learning episodes and social interactions as the mechanism through which new knowledge is generated (Myers, 2018). An important implication of this view is that access to high-quality coworker relationships is a key moderator of learning. Organizations should consider whether the structural context of employees' work allows for quality relationships to form (Myers, 2018).

Social networks build and sustain mesolevel learner motivation over time

Across the life course, the salience of growth motives is gradually exchanged and replaced with social/affiliative motives (Carstensen et al., 1999; Kanfer & Ackerman, 2004). Adults' social networks promote protracted engagement in learning through effects on well-being, learning beliefs, and persistence (Lyndgaard et al., 2024). In the context of lifelong learning and skill development, mid- and late-career individuals may prefer to opt in to opportunities that provide meaningful social connections and satisfy generative motives rather than opportunities that emphasize exclusively growth-oriented outcomes (e.g., promotions). With this trajectory in mind, mentoring may become an especially attractive opportunity for adults to contribute and seek out

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knowledge. However, life course declines in *self-efficacy for development* (the belief that one can learn/develop to advance their career; Maurer, 2001) can inhibit mesolevel learning processes. Self-efficacy is a crucial element of goal striving because it not only influences goal choice but also perseverance (Bandura, 1991). Engaging in learning within a supportive social network exposes adults to critical information that informs their efficacy beliefs (Maurer, 2001). Within communities of practice (CoPs), for example, adults can monitor their performance relative to peers, which acts as feedback to improve the accuracy of self-efficacy judgments. CoPs provide opportunities to watch others overcome challenges, which can reduce anxiety, and lastly, they are places to give/receive encouragement (Goodwin, 2019). These experiences help adults feel more efficacious (i.e., believe that if they put in effort, they can learn).

Social support in the environment impacts macrolevel learning resources

Finally, person-centric lifelong learning perspectives must consider that social support (or lack thereof) from the work and family domains alters the amount of time available for learning and adults' ability to transfer knowledge and skills to their current or future jobs (Lyndgaard et al., 2024). Family members can support lifelong skill development by recognizing that across the life course, individuals need to lean into different roles (i.e., employee, parent, partner, learner) to reduce interrole conflict (e.g., work–family–school conflict; Hammer et al., 1998) and promote career sustainability. Supervisors can support learning by increasing flexibility in work arrangement and content, which has added benefits for motivation (e.g., job crafting; Rudolph et al., 2017). Acquiring or integrating new skills takes time and effort, which may not be immediately attractive to employees juggling multiple performance criteria. Supervisors may be able to incentivize extra effort by supporting employees' ability to choose projects they *want* to join (to generate interest in the application of newly acquired skills or the opportunity to learn on the job) and/or discretion to adjust project timelines (to account for learning curves).

The I-O literature has previously focused on systematic differences in nonwork demands (e.g., gender differences in caregiving demands) that make learning engagement more stressful or challenging. As Beier et al. highlight, however, global trends and disruptions also introduce novel difficulties in accessing skill training, especially for vulnerable populations (e.g., those displaced by natural disasters). These populations not only face increased difficulty in accessing skill training opportunities to begin with but, because of compounding macrolevel contextual factors, may also have less support from family and community networks during the active phases of engaging in learning and skill development opportunities.

On the folly of rewarding organization-centered methods while hoping for person-centered theory

As noted previously, research on skill learning (e.g., training) remains largely organization-centered in ways that obscure the role of social and motivational processes in lifelong learning. We posit that this focus may not be a function of researchers' opposition to a person-centered approach but rather a function of the research incentive structure. In this section we employ Kerr's (1975) classic propositions on the causes of misalignment in organizational reward systems to identify four obstacles to a person-centered psychology of lifelong learning. We encourage future research to explore these issues in more detail than possible in this commentary.

Cause 1: Overemphasis on "Objective" criteria

In organization-centered training research, the ultimate criterion is typically performance, defined in terms of increased productivity, demonstrated gains on post-training assessments, and/or

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return on investment. Although scholars value long-term outcomes in evaluation studies, most training evaluation studies examine short-term, microlevel criteria (Kennedy et al., 2013). These criteria are attractive because they are relatively easily quantified and nominally focus on skill learning outcomes (e.g., short-term training performance). However, these criteria do not fully capture the nature of *lifelong* learning, which is often messy, difficult to operationalize, and the cumulative effects of which may not be fully realized for a period of years. A person-centered approach to studying this topic expands the criterion beyond the short-term microlevel by including relational or motivational outcomes of learning over time (e.g., the strength of learning-related social networks; development of self-efficacy; see mesolevel questions in Table 1). For instance, CVL emphasizes social relationships as the foundation for increasing individuals' *capacity to learn* (Myers, 2018). The capacity for *future* learning is critical because, like other person-centered theories in I-O (e.g., affective events theory; Weiss & Cropanzano, 1996) and lifespan psychology (e.g., Kanfer & Ackerman, 2004), the research incentive shifts from a primary/sole emphasis on inter-individual differences to also encompass intra-individual change trajectories.

Cause 2: Overemphasis on highly visible behavior

The influence of social/relational processes in adult learning are dynamic and difficult to assess. That is, social/relational processes are understudied in part because it is difficult to assess learning behaviors that (a) unfold over long periods of time, (b) occur informally, or (c) may take place outside of a physical central workplace (e.g., online degree programs, see macrolevel question 2 in Table 1). Further, little data exists regarding the impact of remote/hybrid work arrangements on social learning processes. Nonetheless, postpandemic studies show that workers are concerned about the impacts of remote work on early-career development and onboarding (Lipton, 2023), due in part to perceived social challenges. Employees and managers also cite decreased collaboration and impaired relationships with coworkers as risks of hybrid work (Wigert et al., 2023), meaning that workers may be missing out on building the relational capacity for knowledge sharing interactions (e.g., CVL; see micro and mesolevel questions in Table 1).

We suggest that part of the disincentive for studying these processes lies in assessment challenges. Recent technological and measurement advances can help organizational scientists dig deeper into person-centered learning processes. The field of learning analytics, for example, seeks to analyze and predict learning behaviors and outcomes by harnessing the data-storage capabilities of learning management systems and virtual learning environments (Clow, 2013). These platforms not only track how learners interact with course materials (i.e., microlevel learning), but also when/how they connect with other learners. These social interactions are critical to measuring mesolevel processes, especially when aggregated over time. Similar approaches (e.g., social network analysis) could be extended to knowledge sharing behaviors on enterprise or public sites. One particularly appropriate recommendation from Beier et al. was to expand the range of methodologies for studying learning, including qualitative designs. A recent survey of learning sciences researchers found that a majority of respondents use mixed methods/qualitative designs (Yoon & Hmelo-Silver, 2017), providing insight into the use of such methods in person-centered lifelong learning and skill development research.

Causes 3 and 4: Conflicting values in reward systems

The two remaining causes identified by Kerr (1975) include (a) inconsistency between rewarded behavior and the rewarder's public values and (b) the presence of additional goals/values that conflict with the desired behavior. In the context of lifelong learning, the former occurs when organizations reward rapid output in the short-to-medium term at the expense of development while publicly claiming to value employees' continuous learning (see macrolevel question 1 in

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Table 1). Relying on proceduralized processes often takes less time and energy than learning to complete tasks in new ways or learning new skills. From a person-centered perspective, this tradeoff is likely to be damaging to workers' development to the extent that they feel pressured to default to automated, routinized behaviors to maximize short-term productivity. The latter cause leads us to ask what values in I-O psychology cause conflict with a person-centered emphasis on lifelong learning/skill development. We caution against a perception, however, that this shift calls for a choice between traditional workplace training *or* self-directed lifelong learning. Both will be necessary to prepare workers for future changes.

Conclusion

We agree with Beier et al. that person-centered approaches are needed to adapt to changes in the nature of work. In this commentary, we sought to supplement the focal article with a discussion of social and relational learning processes that we view as part of this sea change. We also identified systemic roadblocks to this goal, based on classic organizational theory. We argue that the most effective way to promote equitable lifelong learning and skill development is to prioritize and incentivize research questions and methodologies framed from a person-centered rather than organization-centered perspective, thereby "altering the reward system" (Kerr, 1975, p. 781). Now and in the future, I-O psychologists should understand that learning *is* work (Fischer, 2000) and should be rewarded accordingly.

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