

Employee-driven learning and innovation (EDLI) as a phenomenon of continuous learning at work

Soila Lemmetty

*School of Educational Sciences and Psychology,
University of Eastern Finland, Joensuu, Finland, and*

Stephen Billet

*School of Education and Professional Studies,
Griffith University, Brisbane, Australia*

Abstract

Purpose – This paper aims to examine employee-driven innovation (EDI) intertwined with learning, creating a new description combining these two concepts: employee-driven learning and innovation (EDLI). This paper provides insights into the nature of EDLI based on the existing theories and perspectives. It seeks to elaborate EDLI as an ongoing process in and through work.

Design/methodology/approach – The paper draws on Jaakkola's (2020) guidance for structuring a conceptual article. The authors first describe the theoretical starting points related to EDI and then elaborate its relationship with learning at work, with the aim of structuring the key elements involved, drawing on and interpreting existing theory and knowledge.

Findings – In summary, advanced here are five premises for describing EDLI at work: (1) EDI and workplace learning are strongly intertwined phenomena, (2) learning in the EDI process occurs simultaneously at the intra-personal and inter-personal levels as a reciprocal process of adaptive and innovative learning, (3) innovations are only manifested in and are relevant to the specific cultural-historical and social context of particular enterprises, (4) the continuity of innovations and learning processes is enabled by participation and (5) triggers from outside the workplace, behind the innovation and the specific consequences (that transcend workplace boundaries) of the innovation anchor aspects of the process outside the workplace or work practice.

Originality/value – The paper advances a description and justification of EDLI. As such, it extends, connects and updates previously established theoretical models and explanations of this about EDIs. Based on the premises advanced here, the theoretical and practical contributions are discussed and the research gaps and needs for further research identified.

Keywords Employee-driven innovation, Continuous learning, Conceptual research, Theoretical article, Workplace learning, Work life

Paper type Conceptual paper



Introduction

Innovation plays a key role in enabling workplaces to respond to emerging challenges, new opportunities and changes in their client or customers' preference or requirements (Anderson *et al.*, 2014). Therefore, both private and public sector enterprises need to promote and engage the creative potential of all their staff to identify, initiate and enact innovations. For these reasons, the concept of employee-driven innovation (EDI) has gained an increasing role in innovation research and debate related to the world of work in recent years. At the same time, the role of employees' learning is increasingly central in everyday thinking and action at work and in other areas of life. Learning is the process by which change is achieved (Knowles *et al.*, 2020): individual learning is a change in individuals' thinking or actions (Billett, 2004), while change in workplaces can be seen as being about remaking or transforming practices, processes or actions of a wider group (Tannenbaum, 1997). When referring to learning at work, the focus is typically on change in thinking and actions of individuals and groups that occur either at work or because of work. Here, learning is seen as embedded in everyday work practices, and the workplace is, thus, seen as a central site and place for learning (Billett, 2004; Evans and Waite, 2010). Many studies (see e.g. Anderson *et al.*, 2014; Brandi and Hasse, 2012; Høystrup, 2012; Smith, 2017; Billett *et al.*, 2021; Wihlman *et al.*, 2014; Ellström, 2001; Lemmetty and Collin, 2020; Cangialosi *et al.*, 2020) show that continuous learning at work increases and promotes innovation and innovative behaviour, and vice versa, which is why EDI should be linked to learning in everyday work (Billett *et al.*, 2021; Smith, 2017; Derrick, 2020).

Research on EDI has developed over the past decade and has produced useful concepts for elaborating what it constitutes. Importantly, EDI is inherently embedded in the processes of learning at work and is, therefore, a key form of change of two kinds: individuals' learning and workplace innovations, both arising through and across working lives. In this way, researchers on learning and EDI (Billett *et al.*, 2021; Brandi and Hasse, 2012; Ellström, 2010; Høystrup, 2010, 2012; Smith, 2017; Derrick, 2020) have engaged in critical and constructive discussions on what EDI constitutes and how learning should be seen as an integral part of these innovation processes. However, there remain major gaps in research on innovation and learning. For example, innovation has been studied through individual personality traits or old measures that do not provide a reliable picture of innovative action in modern working life (Anderson *et al.*, 2014; Pajuoja, 2022) rather than socio-cultural perspectives that capture the socially shared character of such activities. Some evidence supports the view that the kind of work is more influential than individual characteristics in the manifestation of innovations in work practice (Smith, 2017). Indeed, innovations at work are not usually approached as a practice-based phenomenon linked to employees' learning (Derrick, 2020) or from the socio-cultural context of the workplace or work practice (Billett *et al.*, 2021). Moreover, previous research on innovation has partly ignored the fact that, in addition to subjective learning (i.e. personal-specific outcomes), learning also produces objective outcomes such as new ideas, skills or models that are pertinent to others (Ellström, 2010). These shortcomings potentially limit the kinds of analyses to which the learning-innovation relationship is subjected. Thus, an essential question for research in this area remains: in what way does EDI connect to the phenomenon of continuous learning at work?

This article aims to provide insights into the characteristics of employee-driven learning and innovation (EDLI) as an intertwined phenomenon based on the existing theories and perspectives. It seeks to elaborate EDLI as an ongoing process in and through work by addressing two questions: (i) How can workplace learning and EDI be explained as an intertwined phenomenon? And (ii) how can EDLI be approached as a continuous learning

process? The article adopts Jaakkola's (2020) structuring and guidance for presenting a conceptual case. Described and justified first are the theoretical starting points related to EDI, and then its relationship with learning at work is elaborated, with the aim of structuring the key elements involved, drawing on and interpreting existing theory and knowledge.

Employee-driven innovation at work

Innovations at work are adopted here as being those new constructs and practices that are enacted in enterprises to realize benefits and enhance value – and these are becoming an integral part of contemporary working life. They go beyond what Schumpeter (1934) described them – as new things or combinations of existing knowledge, resources or other factors that generate *economic benefits* – but also now as everyday activities that transform work, enterprise performance and work outcomes, with human and social value (Høyrup, 2010). In the 21st century, innovation is no longer just about achieving competitive business advantage but about addressing a range of both small and large social challenges (Edwards-Schachter, 2018). This includes problems variously related to individuals' employment, well-being or changes to workplace practices or organisational culture (Høyrup, 2010). Innovations have also often been viewed as the generation of novel methods, ideas and products or innovative activities and processes (Anderson *et al.*, 2014; Schumpeter, 1934), not just ideas. Hence, innovation has been broadly associated with creativity, sometimes even synonymously, although creativity is more strongly associated with ideation, while innovation is often referred to the bringing together of ideas and their implementation (Amabile, 1996). Thus, innovation encompasses implementation and achieving practical outcomes. So, the innovation process is seen as encompassing all three stages: the formation, promotion and implementation of the (creative) idea (Scott and Bruce, 1994). Schumpeter's (1934) original definition of innovation as "a new thing that creates economic value" is often taken as an approach to the study and evaluation of innovation. Based on this definition, two fundamental criteria have been set for innovation: novelty and value (Høyrup, 2010), but also in terms of social, cultural and personal outcomes instead just economic ones.

In responding to the rapid changes in the world of work through innovations, workplaces of all kinds need to increasingly harness the creative potential of their entire workforce: their knowledge and expertise, as well as their diverse experiences of everyday work processes and stakeholders (Ellström, 2010). As foreshadowed, there is a growing interest from research and the everyday life of workplaces that *employees* – at all levels in the enterprise and in all job roles – possess extensive knowledge, experience and skills related to everyday work processes, practices, products and customer or user needs (Ellström, 2010; Høyrup, 2010; Vøxted, 2018). These employees usually understand work practices – including related challenges and gaps – and gather knowledge from clients, colleagues and other networks (Kesting and Ulhøi, 2010). Thus, they possess potential to innovate for and through their work (Vøxted, 2018; Tidd and Bessant, 2009; Amabile, 1996). Actualizing this potential is important not only for individual employees but also for workplaces' viability as a whole and, therefore, employees continued employment and progress (Ellström, 2010; Høyrup, 2010; Vøxted, 2018). Both routine and innovative practices are necessarily employee-driven, as it is employees who perform work tasks, face new challenges and respond to these new tasks (Billett, 2012). Whilst this might appear limited individually, collectively, the potential is far greater, including being generative of large-scale impacts and significant innovations (Holmquist and Johansson, 2019; Tidd and Bessant, 2009; Høyrup, 2010). Therefore, securing employees' involvement in fostering innovation is important for enterprises (Holmquist and Johansson, 2019).

EDI (Høyrup, 2010; Billett *et al.*, 2021) refers to the outcome that results from employee-initiated and enacted innovations. It constitutes a creative activity in the workplace because it requires novel responses in which ordinary workers play a central role (Renkema *et al.*, 2022; Kesting and Ulhøi, 2010; Høyrup, 2010). The phrase “Ordinary worker” has been used in EDI studies to refer to any member of an organisation’s staff: an employee, a manager or a consultant (Smith, 2017). Here, however, it refers to employees whose work roles is not specifically to generate new ideas or to develop and produce innovations, but they often do (Kesting and Ulhøi, 2010). EDI has been described as comprising both the generation of ideas and their implementation, so it is not just about individuals’ single moments of inspiration but also about the promotion, further development and implementation of an innovative concept or practice (Smith, 2017; Flocco *et al.*, 2022). However, employee engagement does not necessarily imply or constitute a strong role for the employee at every stage of the process (Billett *et al.*, 2021). Instead, EDI has been structured into three categories based on the level of the employee’s role in the overall process (Høyrup, 2010, 2012): the first level of bottom-up innovations has been described as bottom-up innovations that are fully initiated and implemented by employees. Second-level EDIs (a mix of bottom-up and top-down innovations) are initiated by employees and supported by management. At the third level (top-down innovations), innovation processes move from the top down, where the innovation process is initiated by management, but with delegation to and involvement of employees at different stages of the process. EDI can occur spontaneously and unplanned in the everyday workplace or be equally built for it in a deliberate and planned activity such as a hackathon or innovation day (Høyrup, 2012; Flocco *et al.*, 2022; Ellström, 2010). Yet, other literature has typically approached EDIs as something bound up in the everyday working – and originating from disruptive or problematic situations at work and evolves as a practice-based response in real time (Ellström, 2010; Tidd and Bessant, 2009; Høyrup, 2010; Smith, 2017). Either way, they are valuable.

EDIs can be technological, product, marketing or organisational innovations in nature, and thus, they can focus on work processes, products, services, organisational policies, practices or individual activities, but they are centred on harnessing the innovative capacity, ideas, skills, time, creativity and participation of employees (Høyrup, 2012) to develop new understanding and organisational action (Høyrup, 2010). Based on this, EDI is, therefore, defined as employees’ new ideas that generate new, shared and sustainable practices (Kristiansen and Bloch-Poulsen, 2010). It is, hence, essentially a humanistic and social innovation that can also generate economic value through, for example, reduced costs, increased employment and improved well-being at work (Høyrup, 2010). Thus, the value of EDI can be manifold, but the economic value comes primarily from the human and social value. EDIs can appear new to the actor, the workplace, the community or society at large and thus be either radical or incremental (Høyrup, 2012). Regarding the value of innovation and, thus, its definition, Kristiansen and Bloch-Poulsen (2010) present three criteria for EDI it must:

- (1) bring value to the organization;
- (2) improve the organisation of work; and
- (3) improve the quality of working life from the employees’ perspective.

They emphasise the value of the third criterion by stating that new practice should improve the quality of working life, and if this is not the case, the outcome cannot be seen as an innovation. The quality of working life aspect is linked to the social and human nature of innovation, but, in practice, it can be problematically at odds with the other two criteria.

Even if employees are known to have the potential to innovate and many creative ideas but are not empowered to implement them (Voxted, 2018), many ideas remain untested and do not lead to either kinds of change [i.e. learning or work transformations (Holmquist and Johansson, 2019)]. Research has found that organisations can have difficulty engaging employees in innovation work, which can be seen as separate from their daily jobs (Moosa and Panurach, 2008; Bäckström and Lindberg, 2018), and sought to identify factors that enable EDI. These factors have been described as being both individual and linked to the culture and practices of the organisation. Individual factors that facilitate innovation have been described as, for example, creativity, previous work experience, a positive attitude towards work (González-González and García-Almeida, 2021) and employee agency (Haapasaari *et al.*, 2018). At the organisational level, factors such as managerial support, autonomy, collaboration (Smith, 2017; Ulhøi and Kesting, 2012), a clear vision and the organisation and dissemination of innovation activities (e.g. through documentation) (Voxted, 2018) have been seen to contribute to the emergence of EDI. A major challenge in supporting and enabling innovation is its context-specific nature: innovation plays an important role in both private and public organisations across a range of industries, but research on different contexts is still limited (Derrick, 2020). A particular limitation is the focus on learning in these accounts. It follows, therefore, that learning needs to be embedded in these considerations of employee innovations.

Embedding learning to employee-driven innovation – towards the description of employee-driven learning and innovation

In the research and literature on EDI, learning has been described as something without which innovation cannot occur (Ellström, 2001, 2010). Thus, the initiation, implementation and maintenance of innovation are itself described as learning (Billett *et al.*, 2021), which makes it necessary to advance EDLI together rather than just innovation. This is because learning at work is a prerequisite for EDI, as it enables employees to become attached and engaged in their work and to find new ways of doing their job (Høytrup, 2012). Moreover, individuals' existing knowledge and skills are a key starting point for innovation (Voxted, 2018; Høytrup, 2012; Billett, 2012), especially when they are combined collectively in a group (Laviolette *et al.*, 2016). However, innovation is also the starting point for learning something new, i.e. it can be seen not only as an outcome but also as a driver of learning (Høytrup, 2012; Ellström, 2010). In the following, highlighted in more detail, is how this alternating and continuous process of learning and innovation can be viewed and explained on theoretical terms.

Adaptive learning and innovative learning

EDI researchers often concur that employee learning at work is a key part of innovation and embedded in the innovation process (Billett *et al.*, 2021; Smith, 2017; Høytrup, 2010; Ellström, 2010; Derrick, 2020; Fuller *et al.*, 2018), but how exactly this can be explained? Previous research (Ellström, 2001, 2010; Fenwick, 2003; Høytrup, 2010; see also Holmquist and Johansson, 2019; Lundkvist and Gustavsson, 2018) emphasises the structuring of learning into adaptive learning and innovative learning (also transformative or generative learning), both of which play a central role in the innovation process. Adaptive and innovative learning are qualitatively different (Fenwick, 2003; Ellström, 2001). Adaptive learning aims at learning something “existing” and previously known (Høytrup, 2010). In an organisational context, for example, the induction of new employees is often based on their adaptive learning when the aim is for employees to learn the organisational customs and rules to which they are expected to participate in and contribute. Innovative learning, on the other hand, typically refers to a learning process that produces something new – something that is

not yet known or that leads to a new understanding or outcome (Høyrup, 2010; Ellström, 2010). Ellström (2001, 2010) describes adaptive learning as the control of existing practices and structures in an organisation, whereas innovative learning is more about renewing and questioning these practices and structures.

Innovative learning, which inherently aims for a larger-scale creative change and is often more directly associated with innovation (Holmquist and Johansson, 2019; Lundkvist and Gustavsson, 2018; Fenwick, 2003), is seen as complex and difficult to predict. Such learning is about locating meaning in new situations, questioning and seeking new possibilities (Haapasaari *et al.*, 2018), and is exploratory in nature, experimentation and risk-taking (Fenwick, 2003). In addition to innovative learning, adaptive learning is also relevant to innovation and provides insight into the problem of implementing creative ideas described earlier in this article, i.e. how a suggestion for innovation in the workplace progresses to practical implementation. According to Voxted (2018), the key to implementation is learning transfer, i.e. the transfer or integration of existing knowledge into a new understanding or context. From a learning perspective, learning transfer does not necessarily focus on learning something completely new, but is about putting what is already known into a new context, a process that describes adaptive rather than innovative learning. Adaptive learning also plays a key role from a work management perspective, as it can free up time for innovative learning (Høyrup, 2010).

In their study, Billett and colleagues (2022) examined how learning is associated with different types of EDI. They divided the innovations they found into three categories:

- (1) completely new innovations (de novo innovations);
- (2) innovations based on the extension of existing concepts or procedures; and
- (3) innovations that involve the advancement or integration of previous processes into new processes.

Accordingly, innovations that are entirely new in the workplace, those that require advancing something that has not been tried before, require learning new skills, competencies or attitudes. In contrast, the extension of concepts or procedures develops existing knowledge and understanding by relating it to a new situation, problem or task. From a learning perspective, the promotion of previous processes or their incorporation into new workplace processes means adapting existing knowledge to new circumstances (Billett *et al.*, 2022). In these descriptions, the emphasis on adaptive and innovative learning can be observed by looking at the novelty value. The role of innovative learning would appear to be stronger in de novo innovations, where the change is more extensive, and the novelty value concerns a larger group or the whole organisation. In contrast, the promotion of previous processes appears to be more linked to adaptive learning and transfer of learning.

While some studies may position adaptive and innovative learning as being separate, distinct processes, they should instead be seen as complementary parts of the learning process. Ellström (2010) expands on this view by describing practice-based innovation as a circle of emergent, adaptive and innovative learning, driven by conflicts and tensions between the explicit and implicit dimensions of the work context. In the following section, this aspect of continuity is discussed.

Continuity as a qualitative variation in learning and alternation between individual and group levels

Learning at work can be approached as continuous process. Continuousness in learning focuses on the interrelationship between different learning situations or processes: learning

continues between different situations and actors as knowledge is applied and transferred, and as existing and new knowledge is combined (Albinsson and Arnesson, 2012). Continuous learning is, thus, based on a constructivist concept of learning, according to which learners are active agents who construct understanding, skills and knowledge through their perceptions and experiences (Dochy *et al.*, 2022; Tynjälä, 1999). At the organisational or workplace level, continuity refers to change and the ability and capacity of an organisation to continuously sustain learning processes in response to change and development (Tannenbaum, 1997; Prugsamatz, 2010; Kira *et al.*, 2010). Continuity at the collective level can, therefore, refer to the adaption of individuals' knowledge to the learning of others and thus to the knowledge of the (work) community (Albinsson and Arnesson, 2012). In this case, individual and group learning should occur simultaneously (Kira and Frieling, 2007). So, new learning, for example, approaches, will be more widely used and applied in the workplace, spread and shared, constructing deeper understanding and knowledge (Albinsson and Arnesson, 2012).

In relation to the continuum of learning, Høytrup (2010) describes adaptive and innovative learning as a process at the organisational level, where innovative learning serves as a basis for new innovations (i.e. new ways of working, processes or products to be introduced in the organization). These innovations, once visible and accepted in the organisation, in turn, become learning conditions by enabling adaptive learning by employees as they adapt to the new ways of working they produce (Høytrup, 2010). Thus, when considering links amongst innovations and their links to the workplaces' activities, structures or practices, the processes of adaptive and innovative learning are combined. This emerges when staff first adapt to existing practices, learning the knowledge and understandings linked to them and then enabling them to reflect on and question these practices. The latter reflects the process of innovative learning and may eventually lead to the development of new practices (i.e. innovations), which, in turn, when they become accepted, serve as a starting point for adaptive learning (Ellström, 2001). Thus, in the context of EDI, adaptive and innovative learning together constitute a continuous learning process.

In addition to the alternation of different qualitative learning stages attached to the process, the same process continuum can also be described at the individual, group and organisational levels (Fenwick, 2003; Smith, 2017; Høytrup, 2010; Ellström, 2010). As employees are always the objects of and influenced by the rules and frameworks of the organisation, they are attached to collective practices together with key actors in the organisation, such as colleagues and stakeholders (Smith, 2017). It is not only important to account for the workplaces norms and practices organisation, as external stakeholders such as customers and partners with whom employees interact to gain insights and perspectives that provide impetus for innovative learning shape them (Laviolette *et al.*, 2016). Through these collective practices, employees remake existing and generate different practices (Smith, 2017; Amundsen *et al.*, 2014). For this collective learning to succeed, existing and emerging knowledge and understanding must be made accessible (Høytrup, 2010; Ellström, 2010). From the perspective of the innovation implementation processes, the key is, therefore, to adapt individuals' knowledge and skills through organisational change (Brown and Duguid, 1991): learning generates innovation that can be integrated into community-level action through its acceptance and collective learning. In this way, learning is moving simultaneously at both individual and group levels (Høytrup, 2010), allowing the process to continue and progress within workplaces. This conclusion emphasizes the situatedness of these dual processes of learning and changed practices.

The importance of participation and the cultural-historical context of the workplace

Work, learning and innovation are all interdependent phenomena that emerge from the determined participation of employees in workplace activities and interactions (Billett *et al.*, 2022; Billett *et al.*, 2021). Participation is a multidimensional concept, referring not only to the physical presence of a person in a given situation but to a practice involving many – often simultaneous – actions. Billett (2004) expands the concept of participation, describing it as being at once the acquisition, collection, synthesis, application, reflection and sharing of knowledge. Learning at work is, therefore, not just about performing a task or a process but about participating in work practices – the norms, routines and beliefs (Bourdieu, 1990) – embedded in everyday activities (Billett, 2014). In workplaces, individuals' understandings are transformed as they engage and participate in everyday (communal) thinking and activities within their work (Fenwick, 2003; Billett, 2004). This is why learning through participation at work should be seen as a socio-cultural, contextual and practice-based phenomenon (Billett, 2004). Participation is a key element in the continuum of the innovation and learning process described earlier, as it enables the adaption of knowledge and understanding between people and, thus, individual group and organisational learning (Brown and Duguid, 1991; Høyrup, 2010; Hasu *et al.*, 2014). Participation, therefore, links the individual to the work community and stakeholders, as well as to the cultural and historical context of the workplace, promoting the alternation of adaptive and innovative learning at these levels.

Work practices are culturally and historically constructed, yet also constantly evolving systems of actions (Gherardi, 2009; Billett, 2004). Knowledge and understanding of employees are embedded in practice and learning is also part of the continuous remaking, reconstruction and development of practice (Elkjaer and Brandi, 2014; Gherardi, 2009). Thus, participation is not only about socialisation efforts directed towards individuals into existing practices and culture (Billett, 2004). It is also a reciprocal, social process strongly framed not only by the agency, activity and individual starting points but also by the boundaries, structures and cultures of the social and physical work environment (as such in the particular industry or organisation) (Lemmetty, 2020; Billett, 2000, 2004). As learning and innovation are based on participation in and engagement with culturally and socially derived work practices, the key to this process, from an individual perspective, is the decision and willingness to engage in the process, to learn and to share understanding and knowledge (Renkema *et al.*, 2022; Billett, 2004; Evans and Waite, 2010). However, participation is not only an individual-oriented phenomenon but also includes the opportunities for participation provided by the organisation play a key role (Billett, 2004; Evans and Waite, 2010). In their study, Hasu *et al.* (2014) identify five key drivers of employee participation in organisations:

- (1) management support;
- (2) creating an environment for idea generation;
- (3) decision-making structures;
- (4) incentives; and
- (5) corporate culture.

Through these factors, among others, the organisation creates opportunities for employee empowerment, and hence, participation. Ultimately, that participation is premised on interactions amongst individual agency and the artefacts and social factors of the social and physical environment that constitutes the workplace (Billett, 2004).

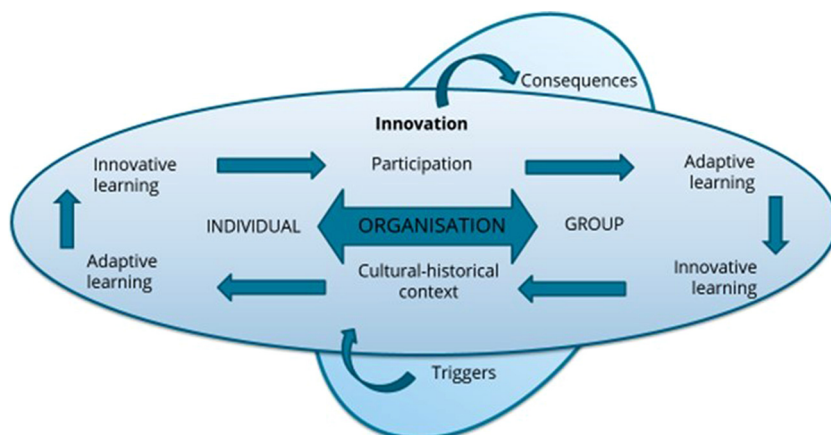
Innovation through participation can be seen as new ways of thinking, behaving or attitudes of employees and, ultimately, professional and workplace practices (Billett *et al.*, 2022) that create social and human value in the organisation (Høyrup, 2010). However, an innovation is not manifested until it is identified as such the particular cultural context in which it is produced (Brandt and Hasse, 2012). Yet, rather than being singular or uniform, the value of innovation differs across industries and different organisations, which justifies seeing innovation as anchored in the cultural-historical context of the organisation. However, Price *et al.* (2012) point out that EDIs can often appear very modest and mundane yet cumulatively produce significant consequences in the long run (see also Holmquist and Johansson, 2019; Tidd and Bessant, 2009; Høyrup, 2010).

Innovations and the learning experiences behind them are also influenced from outside the workplace (Laviolette *et al.*, 2016). These external triggers come, for example, from stakeholders (such as customers) or events that staff members attend in the course of their work. The basis for innovation is, thus, formed not only by the internal activities and practices of the organisation but also by the perceptions and learning experiences that occur outside the organisation (Laviolette *et al.*, 2016). In addition, innovations usually produces effects not only inside but also outside the organisation (Amundsen *et al.*, 2014); hence, the value and consequences of the innovation are also determined by the stakeholders. In this case, the determination can only be made when the consequences of the outcome are known and visible outside the organisation. For example, a new policy or practice may appear to work within an organisation in the short term, but if it complicates the customer relationship or disrupts the organisation's stakeholder engagement in the longer term, returning as a problem for the organisation's operations, it is not a high value innovation. In relation to consequences, it is worth noting that creative activities (such as innovation) are not inherently good or bad but can be evaluated through the actor's intentions and the consequences of the outcome (Kampylis and Valtanen, 2010). All these factors emphasize the relational and situated character of EDLI.

Summary of the case for employee-driven learning and innovation

The learning process linked to EDI includes both adaptive learning and innovative learning: described and shared innovation generates an understanding for individuals and groups of something already invented and known (adaptive learning), which, in turn, becomes the building block and resource for an individual or group to learn something new that does not yet exist (innovative learning). This, in turn, is a prerequisite for the emergence of new innovations. Innovation is realised and actualised in an organisation when it is placed in a cultural-historical and social context through the participation of individuals and the community. The process of continuous learning is, thus, both an individual and a group-level phenomenon, as depicted in Figure 1.

This description reinforces the synthesis presented by Fenwick (2003) that innovations should be viewed through the quality of the learning (e.g. innovative and adaptive), action by actors (e.g. individual, group and organisation) and rhythm of the process (e.g. episodic and continuous). However, the description constructed in this paper adds to Fenwick's (2003) structuring the suggestion through also including to the participatory practices and contextual factors, as they appear as key determinants of learning and innovation processes in the work context. It is also worth noting that external triggers are a key part of innovation processes, as are the consequences of innovations produced within the organisation for the stakeholders and environments outside the organisation that are affected by the innovation. The triggers and consequences are, therefore, key elements to place EDI in the wider social, sectoral or environmental context of the organization.



Source: Authors' own

Figure 1. Employee-driven learning and innovation (EDLI) as a process of continuous learning

Discussion and conclusions

The discussion here presents the background and approaches to advancing the concept of EDI and learning at work as a means of explaining how these co-occur in the conduct of everyday work activities. An account of EDLI as a dual and continuous developmental process in the workplace. As such, we extended, connected and updated previously established theoretical models and descriptions (see e.g. Ellström, 2010; Høyrup, 2010; Fenwick, 2003). Justified by elaborating premises for this duality, the potential theoretical and practical contributions are outlined below, as are the gaps in our knowledge and needs for further research identified.

Theoretical perspectives

Drawing on a review of previous research and existing theories, this article advances five key characteristics of EDLIs:

- (1) EDI and workplace learning are strongly intertwined phenomena;
- (2) learning in the EDI process moves simultaneously at the intra-personal and inter-personal levels as a reciprocal process of adaptive and innovative learning;
- (3) innovations are only manifestly real and relevant in the cultural-historical and social context of particular enterprises;
- (4) the continuity of the innovations and learning processes is enabled by participation; and
- (5) triggers from outside the workplace and behind the innovation as well as the specific consequences, (i.e. that transcend workplace boundaries) of the innovation anchor aspects of the process outside the organisation.

In innovation research, it has been common to locate individual stages or outcomes of the innovation process, which are, however, only glimpses of an ongoing innovation process (Haapasaari *et al.*, 2018). This article brings continuity to the fore through the adaptive and innovative learning cycle described by Ellström (2010) and the individual-group-organizational levels described by several researchers (Fenwick, 2003; Smith, 2017; Høyrup, 2010), thus, making the case that EDI is, at its deepest level, a continuous learning process at

work, hence the need to view it as EDLI. A key prerequisite for continuity is participation: the individuals' agency and willingness to participate and the affordances for this participation provided by the organisation (Hasu *et al.*, 2014; Evans and Waite, 2010; Billett, 2004). Thus, actors participate or learn in practices that are shaped by and enacted in a specific cultural and historical context of the organisation, and more distally by stakeholders outside the organisation. All of this highlights the embeddedness of EDLI in particular work settings (e.g. Brandi and Hasse, 2012) and as construed and constructed by individuals.

Practical and societal views

The elaboration of EDLI at work created in this article may assist organisational actors to understand and locate such processes in their own work contexts. It might also prompt fulsome consideration of the cultural-historical context of organisations and what kind of innovations in relation to it are or could be created in them through employee learning processes. The article places centre-stage the important dual role of participation in workplace learning and the innovations that emerge from it. As a phenomenon based both in individual agency, activity and choice and also on the opportunities offered by the organisation, promoting participation is a key task at different levels of the organisation. The article does not directly focus on the elements that support or guide EDLI, but its various sections highlight some key elements identified in previous research that have contributed to explaining innovations at work and their alignments with workers' learning. However, given the highly contextual nature of the phenomenon, the means to support it also need to be defined on an organisational and context-specific basis. Activities linked to EDI are a key form of continuous learning in the workplace. The review points to everyday, sometimes unconscious, innovation activity in workplaces, often directly or indirectly linked at work organisation, organisational practices and structures (Billett *et al.*, 2021). It is in these circumstances that employees develop their occupational capacities, including the ability to innovate. While participation is a key element of innovation, it needs also to be seen as a key driver of continuous learning in the through work. Encouraging and supporting employee participation and involvement can foster the creative potential of employees (Lemmetty and Collin, 2019). It also enables it, thereby creating a virtuous circle that responds to both the learning needs of society and the development needs of organisations. Given the salience of the concept, there is more that is required to be known about it.

Research gaps and future needs

Previous research provides a fairly thorough picture and understanding of EDLI that goes with it, especially at a theoretical level. It allows describing the phenomenon as a continuous learning process within an organisation, which is also linked to the external context of the organisation. However, research in this area has been carried out by a very limited number of experts and very few empirical studies have yet been published. So, firstly, there is need for more and encompassing base of practical inquiries. For example, more in-depth and comprehensive empirical research on participation – not only from the perspective of joining activities but also from the broader and deeper perspectives of knowledge acquisition, collection, sharing, making visible and reflection (Billett, 2004) – is needed to understand the participatory practices attached to the innovation process and the relationships between the actors producing them, as well as how best to support, evaluate and guide participation from different perspectives (Hasu *et al.*, 2014; Høyrup, 2012). Secondly, understanding further the impact of diverse organisational cultures (Brandi and Hasse, 2012) and other

conditions for innovation (Wihlman *et al.*, 2014; Billett *et al.*, 2021) is also needed to better understand why innovation processes do not always proceed to the desired outcome. Based on these perspectives, it would be also important to examine leadership for learning and innovation and to consider participation-supported leadership as a part of the frameworks for organizational development. Innovation processes differ across contexts, with the definition of their value being organisation-specific and based on organisational history, culture, boundaries, stakeholders and strategies. For this reason, research on the nature and origins of innovation is needed in different sectors, for different target groups and in different organisations.

Work innovation processes have typically been examined by dividing them into two stages, idea generation and idea implementation, which have typically been considered separately in studies (Anderson *et al.*, 2014). Thirdly, more practical inquiries are needed on how employees' ideas evolve and move to implementation and the stages (Renkema *et al.*, 2022) through which new practices become routines (Derrick, 2020). Thus, it may be necessary to conduct longitudinal studies of innovation processes and practices (Anderson *et al.*, 2014; Haapasaari *et al.*, 2018; Smith, 2017) from the individual motivation behind the innovation and the wider organisational conditions to the outcomes of the processes. These longitudinal investigations would also allow the study of the consequences of innovation. The long-term consequences of EDI have not been assessed much in previous studies (Hasu *et al.*, 2014), as the focus has often been on the immediate outcome rather than on what (positive or negative) consequences it has produced in the long term (Haapasaari *et al.*, 2018; Smith, 2017) and for whom. Instead of a critical examination, research typically approaches innovation in an inherently positive light, although innovations can also have harmful and undesirable outcomes for both individuals and organisations – even societies (Kampylis and Valtanen, 2010; Josefsson and Blomberg, 2020; Coad *et al.*, 2021). Critical research on EDI and its short- and long-term consequences for different actors and groups would be important, not only for the viability of organisation but also for individuals' well-being as they negotiate simultaneously the role of learners, or for sustainability in society, for example, Coad *et al.* (2021).

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Corresponding author

Soila Lemmetty can be contacted at: soila.lemmetty@uef.fi