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Through the lens of Vygotsky's Cultural–Historical Development Theory, the Equitable Food Initiative (EFI) moves traditional informal workplace theories into the cultural, intersubjective realm.

Sowing the Seeds of Change: Equitable Food Initiative Through the Lens of Vygotsky's Cultural–Historical Development Theory

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If you ate today, thank a farmer. (Bumper Sticker)

You may have seen this bumper sticker promoting the significant role of farmers in our daily lives. Did you know, however, that farm work is one of the unhealthiest and underpaid occupations in western society (Noble, Obinna, & McGarraugh, 2014)? These conditions are rooted in a global food supply chain that relies on immigrant labor to keep wages low. Other dynamics, such as distributor and consumer pressure to minimize cost, limit the earnings that owners might otherwise invest in decent wages and working conditions. Though it may be easy to overlook the plight of the farmworkers, the bumper sticker reminds us that we are all vulnerable to the unsafe conditions on the farm.

In 2008, Oxfam, a global consortium committed to ending hunger and alleviating poverty, convened a group of stakeholders from across the produce growing and distribution sector to discuss its *Decent Work Initiative* and to brainstorm how the industry might work to increase profits and improve working conditions on the farm. Proposed was a comprehensive, multilevel strategy to set standards and foster transformation in the culture of the farm work. Culture in this chapter is a broad concept that refers to the set of conventions and social practices associated with particular fields or activities, like farming, that influence, but do not determine the behavior and interpretations of individuals in the group (Spencer-Oatley, 2008). The logic underlying this proposal was: (1) certify farms that grow produce to the highest levels of food safety and labor standards; (2) retailers pay premium for food from certified farms to reduce the risk of lawsuits and damage to their brand due

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to an increase in foodborne illness linked to unsafe produce; (3) growers invest the premium in increased wages and improved working conditions for farmworkers (Noble et al., 2014).

This was the start of the Equitable Food Initiative (EFI), which for the last 10 years has engaged food buyers, growers, farmworker unions and advocacy groups, consumer advocates, pest management scientists, and experts in organization and workforce development in a continuous, informal learning cycle directed at one question: *How can we as stakeholders in agriculture, assure that all elements of an emerging global fresh produce supply chain benefit from safe and just treatment of the workforce, provide safer produce to consumers, and ensure the viability of the land necessary for sustained production and environmental protection?*

This chapter will trace the trajectory of the EFI from its beginnings in a one-off meeting of stakeholders to its current day status as a global initiative fostering transformational change in the fresh produce industry. The case will illustrate how informal learning occurred on multiple levels (individual, team, organizational, industry, and society) and across multiple planes (functional and role boundaries and lines of authority) as actors in the EFI engaged in new forms and levels of social interaction across the industry's ecosystem. The informal learning in this case is deep and systemic because, not only has it helped individual actors learn and develop, but it has changed the daily activities and relationships that constitute the culture of the industry and the historical nature of farm work. By drawing on Vygotsky's Cultural–Historical Development Theory (CHDT) to account for these cultural–historical shifts, this chapter extends the theory of informal learning to the realm of culture.

The chapter will begin with an analysis of Vygotsky's CHDT to establish how learning in this perspective is a historical, culturally sourced activity that occurs simultaneously on three tightly coupled planes: the social, culture, and historical. An analysis of the implications of CHDT for informal workplace learning will be followed by a discussion of the EFI that will emphasize how, through the informal learning and the introduction of new social structures and conceptual tools, the effort is leading to the development of new social relationships and shifts in the industry's culture.

Cultural–Historical Development Theory

Inspired by Hegel's and Marx's dialectical materialism, Vygotsky sought to understand the social origins of higher mental functions, such as thinking, speech, volition, as well as their effects on the formation of an individual's psychological system (Shepel, 1999). Historical dialectical materialism is both a theory and method of social research based on the premise that human consciousness and the historical stages of development, as reflected in dominant social structures, reside in a historical dialectical relationship, or a unity of opposites that create historical contradictions, or dialectics, that drive humans to learn and change the conditions of human life. These internal

contradictions may surface and impede the flow of historical human activities, and when they do, people are prompted to learn and change the conditions of action in some way, laying the groundwork for future historical dialectics. These material shifts, according to Marx, are also self-changing because as material conditions for human life change, so too does human nature (Sawchuk, 2003). According to Marx, any cell, or unit of productive human activity in society may, through historical microanalysis, reveal the entire social structure and the historical dynamics that have produced and reproduce the structure over time (Sawchuk, 2003). Historical analysis, according to Marx and Engels (1948/1973), is an "active life process" (p. 47) that requires the engagement in historical dialectics for the purpose of transforming human conditions and nature. Therefore, historical dialectical materialism is a method that both fosters and gives expression to the dialectical character of human life.

Vygotsky's mission was to determine a unit of analysis and a scientific method that could both explain and devise solutions to concrete psychological problems, leading to historical cultural development in people and society (Daniels, 1996). He initially chose word meaning because language is historically constructed, and it is both a social and an individual function. Therefore, Vygotsky determined that language is a historical dialectic as described by Marx (Kozulin, 1996).

Through extensive experimental research, Vygotsky and his colleagues distilled a set of principles that together explain how learning and development unfold within concrete historically conditions. These principles are: (1) generic law of cultural development; (2) cultural mediation of the mind; and (3) dialectical completion of thought and historical activity.

The following analysis revisits Vygotsky's three principles and then discusses the implications of how informal workplace learning is conceptualized.

Generic Law of Cultural Development (Social). Vygotsky's often-cited generic law of cultural development states:

> Any function in the child's cultural development appears twice, or on two planes. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category . . . It goes without saying that internalization transforms the process itself and changes its structure and functions. Social relations or social relations among people genetically underlie all higher functions and their relationships (as cited in Wertsch, 1985, p. 61).

In other words, according to Vygotsky, all higher mental functions are internalized social relations . . . "their composition, genetic structure, and means of action in the world, their whole nature, is social" (Wertsch, 1985, p. 66). A child's internal psyche is formed and develops throughout his/her life as he/she gradually masters the rules of particular social activities. When first learning social activities, individuals will perform "a head taller" because they will engage and perform the task that they do not yet know how to do (Holzman, 2008). Initially, the person will rely on the social group and

more knowledgeable others, as well as on culturally developed models and templates to guide his or her decisions and actions. Gradually and through ongoing social exchange, these culturally derived forms of external regulation are internalized by the individual and transformed into his or her internal tools for thinking (Witte, 2005). Newman and Holzman (1996) specify that internalization transfers responsibility for control of thought and behavior from others onto the child or individual adult who ventures to learn something new.

Mediation (Cultural). Furthermore, the internalization process is culturally mediated by tools, signs, and artifacts that are an integral part of the activity. Vygotsky, following Engels' lead, believed that tools are developed by humans as an element of culture (Shepel, 1999). Just as humans developed instrumental tools to control their external environment, conceptual tools, such as language and mathematics, emerge to extend human cognition. These tools, also known as concepts, help humans to get above concrete situations and to think in abstract, yet structured ways about the problems that impede productive human activity. Since conceptual tools are culturally constructed, they are shaped by the sociocultural settings and institutions within which they emerged (Daniels, 1996). Therefore, the imprint they leave upon the individuals' ways of knowing is said to be situated, for it is aligned with the mindsets, as well as with the learning methods embedded in the particular sociocultural institutions within which the tools were developed and are reproduced (Glassman, 2001).

Dialectical Completion (Historical). If one focused on Vygotsky's analysis of internalization through social relations and cultural tools it would be quite easy to conclude that learning and development are conservative functions that socialize new members of a community into social customs and teach them the appropriate and effective mindsets and behaviors (Glassman, 2001). Theories of learning based on this view naturally emphasize social structure because the frameworks for thinking and acting are set by the existing culture and reinforced by cultural tools and symbols (Glassman, 2001).

This reading of Vygotsky, however, is based in a dualistic psychological paradigm that separates the individual from society, which according to Holzman (2008), Vygotsky refused to accept "... urging instead a method of dialectics" (p. 3). As described earlier, from a dialectical point of view internalization is a dialectical relationship between interpsychological and intrapsycholgoical or the external and internal planes of higher mental functioning (Shepel, 1999). Dialectically, higher mental functions are embedded and reflect the historical, material conditions within a broader system of human activity. The dialectical nature of this system resides in the tension between the conventional ways to take up and utilize culture tools (external), and the need for individual and groups of individuals to complete the activities that rely on these tools (internal). It is within this act of completion that the potential for historical–cultural development, human growth, and innovation resides (Holzman, 2008).

To explain how, according to Vygotsky, human development occurs in the act of completion, Holzman (2008) reminded us that Vygotsky wrote "... . Thought is not expressed but completed in the word .... Speech does not merely serve as the expression of developed thought. Thought is restructured as it is transformed into speech. It is not expressed but completed in the word" (Vygotsky, 1987, p. 251, as cited in Holzman, 2008, p. 39). For Vygotsky this act of completion is a highly social activity—people help each other complete their thinking and actions and in so doing they *co*-create not recreate productive human activity and the associated conceptual tools. Therefore, conceptual tools and the social relations within which they reside are the means, not the end of development. The dialectic unity of thinking and speech, and of internal and external psychological functioning provides people with the cultural tools and materials to reflect, analyze, and question convention, as well as to act in ways that transform rather than recreate their culture and its prevailing modes of thought and activity (Shepel, 1999).

A Cultural–Historical Development Perspective on Informal Workplace Learning

According to Vygotsky, informal workplace learning emanates from social relations, which is contrary to contemporary workplace learning scholarship that considers social relations as one of the many contextual factors that influence learning, such as resources, leadership and management support, structure, job, and culture (Marsick & Watkins, 2014). Likewise, we can no longer understand informal learning as an individual process that occurs as learners engage with others in work practices. Instead, learning is a social process, and what is learned are socially and historically constructed knowledge and activities. Therefore, social relations are not factors, but the very source of informal learning in the workplace (Veresv, 2010) and learning, like many other human processes, is an intersubjective, deeply relational endeavor (Gergen, 2009).

Gergen (2009) elaborates on the intersubjective nature of human life and explains why theories that emphasize either structure and/or agency in learning, for example, cannot fully explain human processes. "... [V]irtually all intelligible action is born, sustained, and/or extinguished within the ongoing process of relationships ... We are always already emerging from relationships; we cannot step out of relationship; even in our most private moments, we are never alone" (Gergen, 2009, p. xv). Gergen's (2009) relational-centered, intersubjective understanding shifts the focus in workplace learning from "... the remote realms of social structure and individual subjectivity to the micro-social patterns, interdependent action, and the realm of the *in-between*" (p. 217).

In the case of informal learning at work, the *in-between* lies in the work, and workplace practices are therefore the point of departure in CHDT-inspired workplace learning research and practice. CHDT scholar-practitioners seek to account for the quality and character of the social interactions and the relational dynamics of the inter- and the intrapsychological dialectic

(social interactional dimension). Additionally, these scholar-practitioners aim to bring awareness to the formative influences of the cultural tools and materials that people use to constitute their social relations, as well as to perceive and make meaning of their experience of work and learning (cultural dimension) (Shepel, 1999; Wertsch, 1998).

Moreover, CHDT research and practice privileges the situation and its historical structures and trajectory (historical dimension). Scholar-practitioners attend to the development gaps in the mediating relations (i.e., who does and does not have access to developmental relations and valuable tools) and cultural tools, as well as the efficacy of these relationships and tools in accomplishing tasks and performing required actions. Informal learning, through the CHDT lens, is the process by which people notice and fill these material gaps (dialectics), and this process is explained and manifested, in part, by the new relations and tools that learners create and the old ones that they use in new ways to fill gaps and improve their performance. This perspective should naturally lead workplace learning scholar-practitioners to explore the developmental gaps and dialectics in the relations and concepts of their research and practice. Moreover, scholars-practitioners might question the utility of the theories that inform their understanding of workplace learning, potentially leading to cultural shifts in the practices, relationships, and knowledge base in the field.

The EFI offers a unique case to explore how a committed team of industry and worker leaders have partnered with organizational and workforce development practitioners to foster cultural–historical development in agriculture and within the broader discipline of workplace learning scholarship and practice. This case reveals dialectical tensions in the concept and practice of informal learning and in so doing, provides an opportunity to extend the focus from individual learning to the realm of culture.

The Equitable Food Initiative

As documented in the 2017 impact evaluation report (Arango & Krishen, 2017), in 2008, Oxfam America, the United Farmworkers, Farmworker Justice, and a number of food safety, pesticide, and animal rights organizations, growers, industry associations, retailers, and investors joined forces in the EFI and embarked on a continuous, informal learning cycle that addressed root causes of the poor systemic safety and labor conditions in the industry. The EFI developed a comprehensive set of labor, food safety, and environmental standards and a participatory process to embed these standards into farming practices, with the overall aim to improve the global fresh produce supply chain. Key to success was a series of efforts to establish new, safety-focused relationships across a highly fragmented and decentralized value chain. In addition to high quality, research-based food safety and labor standards, the system includes coordinated efforts to build new structures and processes that enable farmworkers to cultivate and extend their knowledge of farming and to bring

their voice to improving safety and working conditions on the farm (Arango & Krishen, 2017).

EFI Systems Building. Ten years of research, dialogue, and informal learning across a loosely coupled, global network have enabled results that were not thought possible when the EFI first began. First, the effort required a high measure of collaboration among multiple stakeholders with a long history of deep antagonism toward one another. Second, the effort required a commitment to resolve a wicked problem that few believed that they, as a single agent in a complex system, had the power to solve. Certainly, many individual farms and retailers had taken independent action to improve food safety and working conditions, but these efforts did little to address the broader social, economic, and political challenges within a complex, global produce supply chain.

At an Impasse. In the beginning, the EFI included eighteen participating organizations, each adopting a traditional, independent approach to developing the EFI system. Concurrent to their engagement in EFI activities, each organization conducted independent research to explore the internal constraints to participating fully in the system. The barriers the organizations encountered included antagonistic relationships with other stakeholders, a fragmented value chain, price-driven market strategies that left growers with very low profit margins, and other systemic challenges. This siloed approach, ironically, reinforced many of the traditional constraints and soon coalitions of common interests emerged based on historical economic, social, and political views, which reinforced the myriad conflicting interests embedded in the industry's structure. Actors were not able to see a way forward through the lens of their individual needs and concerns.

A Breakthrough. Nevertheless, the initial group persisted, and through research and dialogue came to a new understanding of the problem. The breakthrough happened when the parties realized that previous approaches to problem-solving led each party to conclude that others needed to change before the conditions in the industry could improve. This attitude, they determined, reflected the traditional, bureaucratic, and hierarchical organizational paradigm that prevailed in the industry, yet was ill-suited for a hyper-turbulent, interdependent, volatile, uncertain, complex, and ambiguous global market environment. By reimagining their individual and collective organizational model as a broader agriculture ecosystem, rather than their long-held self-perception as a linear and loosely coupled network, the stakeholders reached a common understanding of the problem and realized that the solution was far too great of a challenge for any one agent to achieve through private organizational power and resources. It required collective action.

After reframing the problem, the founding group turned their attention to exploring the emerging new market environment, and together, through learning and adaptation, developed a comprehensive strategy to influence the direction of the industry. Through a series of design-based activities, the group coalesced around a collective strategy to develop a tightly coupled network of shared interests (not organizations) in safe and just food. This

reconfigured network was held together by new standards, relationships, tools, and processes. This path forward was codified in the EFI's mission "... to bring together growers, farmworkers, retailers and consumers to transform agriculture and the lives of farmworkers" (Arango & Krishen, 2017, p. 3).

Sustaining the Change. Today, the EFI is achieving tangible, mutually beneficial outcomes. For consumers, it assures safe and just food. For food retailers, it provides a safe and sustainable supply, which protects their brand from costly lawsuits and a bad reputation among consumers. For farmers, it garners premium pricing and increased volume for their products. Finally, for the farmworkers it results in safer working conditions, a greater voice in food safety, improved work environment, bonuses for certified products, and increased pride of craft. These accomplishments have convinced others to join, and the EFI is leveraging its growing critical mass to transform the industry as a whole.

EFI Systems Design. To uproot the long-standing conceptualization of the farming industry as rigid, oppressive, and hierarchical, the EFI crafted a human systems design methodology grounded in socio-technical systems theory (Trist, 1981) and informed by the principles of technological innovation (Acaroglu, 2017) and continuous performance improvement (Acaroglu, 2017). Known in the EFI as disruptive design, the method engages stakeholders in a generative learning process to explore structural interests and reframe relationships and activities across multiple levels (individual, team, organizational, societal) and planes (function and role boundaries, lines of authority, and so on).

Disruptive Design Process. The process is disruptive because it leads stakeholders to question the social structures and processes in the industry and to consider alternatives that improve the conditions and performance of the system as a whole. The process worked as the parties first prototyped the core features of the EFI certification system, then explored the constraints and alternatives as informed by the experience and interests on all levels of the system. Once the features were assessed through these multiple perspectives, the parties engaged in continuous learning to rebuild, pilot, reflect, adapt, implement, and continuously improve the overall design of the system.

The disruptive design method is based on an explicit assumption that every stakeholder at every level of the system faces deep constraints to change. Rather than challenge these constraints, the EFI helps each stakeholder to think more broadly about the whole end-to-end supply chain and to adapt their behaviors in ways that increase communication and interaction with other players in the system. Therefore, the EFI welcomes stakeholders to devise a strategy to integrate into a new structure of the industry without having to give up their culture. As stated by an EFI leader "... we still have a lot of discrimination towards farmworkers that is not going away, but we are bringing farmworkers into the discussions with owners and retailers and people are listening to each other" (personal conversation with EFI leader).

EFI Farm-Based Implementation. After nearly 2 years of prototyping the basic features of the EFI certification system, including the labor, food safety, and pest management standards and auditing procedures, the EFI turned its disruptive design processes to structure new social relationships, develop the mediating concepts and tools, and generate new rules of engagement or norms to embed the EFI standards and facilitate ongoing learning and continuous improvement processes on the farm. EFI leaders and staff are now using these resources to drive change throughout the system.

EFI Farm-Based Structures. The EFI farm-based certification, like other certification systems, employs third-party auditors to conduct regular reviews of practices and standards on EFI farms. However, it extends this approach in two significant ways; it is continuous and participatory. These extensions are accomplished through a farm-based participatory framework premised on the principles of inclusion and labor–management collaboration put into place on each EFI farm to engage supervisors and farmworkers in continuous learning and problem-solving processes. This strategy not only ensures compliance with EFI standards, but also provides a structure to bring new voices into the work system and to tap all available knowledge and expertise to resolve problems on the farm.

The centerpiece of the participatory framework is an inclusive leadership team of supervisors and workers who represent the full spectrum of diversity on the farm, including gender, racial, ethnic, national, and language diversity. Through training and facilitation, the EFI will help form the team and support them in taking responsibilities to oversee the EFI's development as well as in assuring compliance to the EFI standards and the overall success of the farm.

Mediating Concepts and Tools. The new participatory framework is upheld by a workforce development strategy that seeks to create new relationships and skills that provide all workers, regardless of their language and culture, with access to the valuable knowledge on the farm and throughout the supply chain. Together, the EFI framework and the workforce development strategy instill a value for democratic participation while also building capacity among workers to monitor and ensure compliance on an ongoing basis.

The supervisor–worker leadership team tasked with the creation and implementation of the participatory framework is supported by a team of EFI trainers. The trainers use a national EFI competency-based curriculum outlined by growers and farm worker groups and they adapt to the particular needs, cultures, and languages on each farm. Predicated on the principles of popular education (Freire, 1972), the curriculum is accessible to all workers, regardless of literacy or language, while it also encourages workers to raise their voice to change work practices and relationships on the farm. In terms of content, the training introduces and emphasizes business concepts to support workers in their new responsibilities to assure compliance and improve productivity and quality. Farmworkers, for instance, learn about performance, continuous improvement, and problem-solving and are exposed to the language of business meetings, conflict resolution, and proposal defense. These

new concepts and language not only enable interaction and problem-solving among stakeholders, but also help farmworkers draw on these tools and their knowledge and expertise to conceptualize problems in new ways and to effectively communicate their ideas to managers, owners, and customers and stakeholders in the broader value chain.

New Norms to Foster Dialectical Development. According to workers and supervisors, the lynchpin of the training is that it provides structured opportunities and a metaphorical space for farmworkers, who represent the full range of diversity on the farm, to spend significant time interacting as equals with each other and their supervisors and managers to identify and resolve issues in the fields. Arango and Krishen (2017) in a recent impact evaluation of the EFI found that new social relationships on the farm have fostered new capacities on the individual, organizational, and cultural levels to notice and resolve gaps and contradictions in the practices and the culture of the industry. The evaluation found, for example, individual workers and supervisors learn to listen, develop empathy, and build the self-confidence to take on new roles at work and in the community. On the organization level, increased worker engagement and commitment is strengthening management systems, as well as fostering a tighter integration of management processes related to food safety, working conditions, and environmental protection. Traditional management silos are breaking down, while new forms of integrated thinking are emerging within and across the EFI management teams, improving coordination across the value chain. More broadly, the culture on the farm is also enhanced by a new value for the dignity of farm work and diverse farmworker communities. The inclusion of women and other minority groups on farm leadership teams, for example, has created new channels for workers to raise and address grievances related to the use of derogatory language, sexual harassment and violence, as well as racial and ethnic discrimination on the farm. Farmworkers are also using their training to communicate and act as effective leaders in their personal lives, and this is changing how they parent, relate to their partners, and make family decisions. Their new self-confidence is also leading them to step into new roles as teachers, community leaders, and entrepreneurs. Some suggest that these experiences are helping farmworkers to socially integrate into the culture of the United States (Arango & Krishen, 2017).

Therefore, in addition to "formal" popular education designed to impart knowledge related to the standards and new concepts and language, there is evidence that the forms of social interaction and informal learning occurring throughout the new participatory framework are helping learners to extend the formal learning to realize broader impacts in farming, and in farm families and communities.

EFI and Cultural–Historical Development Theory

The EFI's participatory framework is fostering new social relations that enable diverse groups to voice and share their rich, cultural knowledge and to open

the system up to new ideas and tools to foster historical change in the culture of farming. An analysis of this case from the perspective of CHDT will provide the material to extend informal learning theory to the realm of culture.

EFI and Vygotsky's Generic law of Cultural Development (Social Level). Individual and social development, according to Vygotsky, occurs as culturally derived forms of social regulation and are internalized by the individual and transformed into new personal tools for thinking and acting in the world. In the case of the EFI, the new participatory framework and support from EFI facilitators and trainers enable stakeholders to take on tasks that were once beyond the capacity to perform. Gradually, through a highly social, iterative learning cycle, the stakeholders internalized the EFI concepts and norms and began to use them to think and act differently. The impact throughout the system is evident in how stakeholders have adapted in order to fit into the new, emerging system. Farmworkers, for example, not only build new expertise, but also increase their confidence and power to assume responsibility for their work, the safety of their products and customers, and leadership in their community. This development, when considered from the perspective of CHDT, might suggest that individual development is also repositioning the historical, structural role of farmworkers, moving them from low-wage laborers to professionals with positional power to lead and control their work.

EFI and Mediation (Cultural Level). The learning and development in this case is not only sourced by new social relations, but is also mediated by new cultural tools, such as the EFI standards and a new language of business and performance that underlie the farm-based participatory framework. Concepts such as labor-management cooperation, worker voice, diversity and inclusion, performance improvement, continuous learning, and economic equity are being integrated with historical knowledge of farm work to craft new solutions to safety and labor problems throughout the industry.

Through the lens of CHDT, these cultural tools and concepts provide the material for farmworkers to assume new professional positions and identities, and, as we also see, to foster new integrative thinking throughout the industry as a whole. These developments are breaking down structural barriers and making knowledge more transparent and accessible throughout the system. New values for the dignity of farm work and for diversity and inclusion of women and other minority groups on farm leadership teams are changing the abusive and oppressive conditions in the industry.

These shifts in identities, modes of thinking, and values suggest that the EFI is leading people to question conventional practices and deeply held attitudes and biases. These shifts are, in turn, aligning the industry with institutional models more often found in sectors that compete on skill and high-value work in the global economy. In other words, the EFI may be facilitating cultural historical development in farming, transforming it into a knowledge-intensive and professionalized industry.

EFI and Dialectal Completion (Historical Level). Taken together, these findings indicate that the EFI is motivating change in the institutional

template of the industry. However, the EFI is not using this template to drive change to a predetermined end. Instead, each stakeholder and farm leadership team is encouraged to use the new structures and tools to engage in inquiry and to empower themselves to improve their work and lives. A CHDT analysis would suggest that stakeholders are not merely adopting the EFI structures and tools, but rather participants are trying them on, combining them with local knowledge and interests, and using them to think differently about their relationships and to co-create new organizational templates and models suited for the conditions that exist on each farm and throughout the system. From the perspective of CHDT, the EFI has facilitated the formation of new social relations and has provided new concepts and tools to help stakeholders reflect, analyze and question convention, and resolve dialectical tensions that enable them to act in ways that realize the EFI's mission *to transform agriculture and the lives of farmworkers*. In turn, the industrial template and the approach to organizational and workforce development emerging in this case troubles prevailing ideas of what a knowledge industry is and the workplace learning practices directed at filling skills gaps for high-skilled jobs and for developing people in identified talent pools. Here we see a unique, new model of a knowledge industry and new workplace change and learning practices to support the learning and development of a diverse workforce whose jobs that were heretofore classified as low skilled.

Implications for Informal Learning Theory

The analysis of the EFI from the lens of CHDT brings to light at least three implications for informal learning theory, which also align with Vygotsky's principles of cultural development. These include the need to reconsider: (1) the nature of social relations in informal learning; (2) the role of mediating concepts and tools in understanding and positioning developmental gaps in informal learning; and (3) the relationship between formal and informal learning and the implications for the current understanding of both informal and incidental learning.

The Nature of Social Relations. The analysis of the EFI through the lens of CHDT reframes the role of social interaction in informal learning and challenges the conventional theories that, while acknowledging that collaboration with others is essential for learning, privileges the individual when theorizing how learning occurs through social interaction (Marsick & Watkins, 1990/2015). We see from this case that the EFI offers a different perspective because its point of departure is the space between people, planes, and levels within the system. Rather than emphasize individual learning, the EFI is focused on relationships and the wide gaps in social relations and interactions in the industry. Informal learning appears here as a collective phenomenon in which individuals come to realize how their interactions and relationships either aid or inhibit personal and collective intentions to produce quality food. Through participation in the EFI, individuals and groups realize the gaps in

quality and the structure of their relationships and relational dynamics, and they notice how quality work and products require deep structural interdependences on and between all levels, in particular the human level. This emphasis on human relationships is giving rise to new values for the dignity of farm work and the inclusion of marginalized people and cultures. A CHDT analysis would suggest that in this case, informal learning is intersubjective; it occurs as people realize how their own capacities, what they know and can do, feel, and believe, are deeply influenced by others and indeed can only be realized in relationship to others.

The Role of Mediating Concepts and Tools. The intersubjective nature of informal learning implies the need to reposition the location of development gaps in knowledge, mindsets, capacities, and behaviors from the individual to cultural levels of the system. We see here that EFI troubles the historical structures and cultural tools that mediate relationships and productive activities. The intention is not to fill individual gaps in knowledge and skill, for the EFI actors believe that, given the right structures and tools, people will work and learn together in ways that improve their practices and lives. We see this result in the EFI because individuals on all levels have achieved deep learning. However, this learning emerges from within a broader effort to engage all stakeholders in recognizing and closing the developmental gaps on the social and cultural, as well as the individual level.

This repositioning of the development gaps in informal learning to the cultural level provokes the need to reconsider the role of context in informal learning theory. In contemporary notions of informal learning, contextual factors are treated the same as social relations; contextual factors either support or inhibit learning (Marsick & Watkins, 1990/2015). However, we see in this case that the context provides the cultural material to constitute how informal learning is understood in the first place.

For example, EFI revealed that, though the historical oppressive work structures in the agricultural industry ignore farmworkers' learning and knowledge, these structures do not prevent workers from learning and extending their indigenous knowledge of farming. However, agents on other planes and levels did not recognize their learning as such. The EFI, through its focus on gaps in structures and cultural tools, helped stakeholders realize that safe food originated in the fields, which in turn, increased the awareness of the important role of farmworkers in the safety chain. Gradually, through increased interaction, farmworkers voiced their historical knowledge and their abilities to learn and their learning became more apparent. In other words, we see here that the way farmworkers' work and learning is perceived is as either skilled or unskilled, valuable or not, and is sourced by the cultural material within the broader system. CHDT thus concludes that learning, and in particular, informal learning in this case is both contextually supported as well as contextually constituted.

The Relationship Between Formal and Informal Learning. Informal learning has been largely explained in contrast to formal learning.

Nevertheless, the experience of the learners in the EFI challenges this dualistic understanding. According to conventional theories, the distinguishing characteristic is that informal learning is self-directed and therefore controlled by the learner, whereas formal learning is structured by another who has the power to determine content of the learning (Marsick & Watkins, 1990/2015). These two forms of learning are either seen as polar opposites, or as residing on a continuum of formality and informality. However, the EFI training (formal) introduces a range of conceptual tools which farmworkers and others take up and apply to develop new relationships and new approaches to solving and communicating problems (informal). In this case, these results are only possible because people take up and apply the concepts and not because they have been exposed to them in the EFI training. In other words, the abstract concepts explained in the formal EFI training are restructured and transformed into actionable knowledge by learners in the context of concrete situations on the farm. Formal learning is not expressed in informal learning; rather it is completed by informal learning. In turn, the concrete informal learning in daily practice flows back to the abstract concepts learned in formal settings and makes them more accessible to learners because the learner adapts them in some way. In this light, formal and informal learning are a dialectical unity wherein one brings the other into existence and completes it in the context of real situations on the farm that require adjustment, problem-solving, and learning.

Incidental learning theory also needs to be reconsidered in light of the impact the dialectical completion in the EFI has had on individuals, farms, and the industry as a whole. Marsick and Watkins (1990/2015) defined incidental learning as "... a byproduct of some other activity, such as task accomplishment, interpersonal interaction, sensing the organizational culture, trial-and-error experimentation, or even formal learning" (p. 12). Again, we see a focus on the implications of incidental learning for individuals, whereas in this case, we see incidental learning and its impact on a much broader scale, including individuals, teams, farms, communities, the industry as a whole, as well as on our own practice as workplace educators.

Taken together, the analysis of the implications of CHDT brings to the fore gaps in informal learning and incidental theory and practices. The EFI, by adapting conventional change and workforce development theories and practices to the needs of marginalized people residing in a marginalized industry, we suggest, also provides a model for how CHDT might inform cultural development to informal learning theory and the broader field of workplace learning scholarly practice. To learn from this approach, informal workplace learning researchers and educators would need to expand their focus from the phenomenon of informal learning at work to the critical examination of the efficacy of their mediating relationships and conceptual tools, as well as to the intentional actions to help others do the same. In other words, we call on those who study and support informal workplace learning to foster a deep cultural–historical development cycle in their own theories and practices.

Conclusion

Informal learning in the EFI through the lens of CHDT is a process through which diverse stakeholders recognize material gaps in the structure and conceptual tools in the industry that impede the learning required to improve the product safety and working conditions. Increased outbreaks of foodborne illness have given rise to a new sense of urgency to fill these gaps to protect the consumer and the brand identity of major food retailers. We see how the EFI, by attending to deep divides in social relations and offering new structures and cultural tools to help people get above concrete safety and labor problems and think about them in new ways, is transforming the culture of agriculture and the lives of farmworkers. This work is also surfacing gaps in the historical practices of organization and workforce development, which the EFI is filling by reflecting on what they know, drawing on knowledge and practices from other fields to prototype, experiment, adapt, and implement new practices. This work, we argue, may also lead to cultural–historical development in workplace change and learning practices, as well as extend informal learning theory to the realm of culture.

References

Acaroglu, L. (2017). *Disruptive design: A method for activating positive social change by design*. Retrieved from https://www.leylaacaroglu.com/disruptive-design-method/

Arango, F., & Krishen, N. (2017). *Equitable food initiative – impact evaluation report*. Mexico City, Mexico: BSD Consulting.

Daniels, H. (1996). *An introduction to Vygotsky* (2nd ed.). New York, NY: Routledge.

Freire, P. (1972). *Pedagogy of the oppressed*. Middlesex, UK: Penguin Books.

Gergen, K. J. (2009). *Relational being: Beyond self and community*. New York, NY: Oxford University Press.

Glassman, M. (2001). Dewey and Vygotsky: Society, experience, and inquiry in educational practice. *Educational Researcher*, *30*(4), 3–14.

Holzman, L. (2008). *Vygotsky at work and play*. New York, NY: Routledge.

Kozulin, A. (1996). *The concept of activity in Soviet psychology: Vygotsky, his disciples and critics*. London, UK: Routledge.

Marsick, V. J., & Watkins, K. (2015). *Informal and incidental learning in the workplace* (Routledge Revivals). London, UK: Routledge. (Original work published in 1990).

Marsick, V. J., & Watkins, K. E. (2014). Re-cognizing informal learning in the workplace. In D. Chapman (Ed.), *2014 Proceedings of the Academy of Human Resource Development: Conference of the Americas*. Houston, TX: Academy of Human Resource Development.

Marx, K., & Engels, F. (1973). Manifesto of the communist party. In D. Fernback (Ed.), *Political writings: Vol. 1. The revolutions of 1848* (pp. 62–98). Harmondsworth, UK: Penguin. (Original work published in 1948).

Newman, F., & Holzman, L. (1996). *Unscientific psychology: A cultural-performatory approach to understanding human life*. Bloomington, IN: IUniverse.

Noble, K., Obinna, J., & McGarraugh, S. (2014). *Decent Work Program: An evaluation of the program's evolution and results*. Washington, DC: Oxfam.

Sawchuk, P. (2003). *Adult learning, technology, and working class life*. Cambridge, UK: Cambridge University Press.

Shepel, E. L. (1999). Reflective thinking in educational praxis: Analysis of multiple perspectives. *Educational Foundations*, *13*(3), 69–88.

Spencer-Oatey, H. (2008). *Culturally speaking. Culture, communication and politeness theory* (2nd ed.). London, UK: Continuum.
Trist, E. (1981). *The evolution of socio-technical systems*. Occasional paper, 2, 1981.
Veresv, N. (2010). Reading 'Thinking and Speech' (Vygotsky) Part II [video]. Retrieved from https://vimeo.com/10226589
Vygotsky, L. S. (1987). *The collected works of L. S. Vygotsky*. (Vol. 1). R. W. Rieber and A. S. Cranton (Eds.). New York, NY: Plenum.
Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge, MA: Harvard University Press.
Wertsch, J. V. (1998). *Mind as action*. New York, NY: Oxford University Press.
Witte, S. P. (2005). Research in activity: An analysis of speed bumps as mediational means. *Written Communication*, *22*(2), 127–165.

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Vygotsky has developed a sociocultural approach to cognitive development. He developed his theories at around the same time as Jean Piaget was starting to develop his ideas (1920's and 30's), but he died at the age of 38, and so his theories are incomplete - although some of his writings are still being translated from Russian. Article Content.Â (i) Vygotsky states the importance of cultural and social context for learning. Cognitive development stems from social interactions from guided learning within the zone of proximal development as children and their partner's co-construct knowledge. In contrast, Piaget maintains that cognitive development stems largely from independent explorations in which children construct knowledge of their own. KEYWORDS: cultural-historical activitytheory,dialectics,theory-praxisgap,activity systems,contradictions,learning,development. More than seven decades ago, the Russian psychologist Lev S. Vygotsky. (1934/1986) notedthat (educational)psychology was in a stateof crisisbecauseof.Â ficult to find researchrecommendationsconcernedwith. 186. Cultural-Historical ActivityTheory. Katherine, a fifth grade teacherin a rural district, is busy planning an introduc- tory lesson on electrical circuits.Because she already has taught her studentsin previous grades, she feels thatthe model lesson plan provided in the teachers'. guide. Sowing the Seeds of Change: Equitable Food Initiative Through the Lens of Vygotsky's Culturalâ€“Historical Development Theory. E Scullyâ€Russ, K Boyle. New Directions for Adult and Continuing Education 2018 (159), 37-52, 2018. 3. 2018. Taking care of business: The opportunities and dilemmas for adult education in a changing economy. E Scullyâ€Russ. New Directions for Adult and Continuing Education 2016 (149), 73-82, 2016. 3. 2016. Green HRD: The greening of society and the implications for Human Resource Development theory and practice. E Scully-Russ, M Cseh. Advances in Developing Human Reso Cultural-historical theory of L.S. Vygotsky is viewed in the paper through the prism of tendencies of psychology development, which are revealed by the transspective analysis understood as a tool of cognition of regularities of emergence of open self-developing systems to which science can be attributed. It is argued that cultural-historical psychology can be placed among the theories of post nonclassical level; i.e. having declared itself at the age of emergence of non-classical psychology, the theory left its time behind. This fact significantly hindered (and is still hindering) comprehensio Keywords: Vygotsky, cultural-historical theory, the development of higher psychological functions.Â Bodrova E. Key Concepts of Vygotskyâ€™s Theory of Learning and Development. Journal of Early Childhood Teacher Education, 1997, Vol. 8, no. 2, pp. 16â€”22. Chaiklin S. The zone of proximal development in Vygotskyâ€™s analysis of learning and instruction. In Kozulin A., Gindis B., Ageyev V. Miller S. (eds.), Vygotskyâ€™s educational theory in cultural context. Cambridge: Cambridge University Press, 2003, pp. 39â€”64.Â Vygotskian perspectives on literacy research: constructing meaning through collaborative inquiry. Cambridge University Press, 2000. 296 p. Luria A.R. Etapy proidennogo puti; nauchnaya avtobiografia [Stages of the road travelled: scientific autobiography].