A Sociocultural Perspective on Work-Based Learning for the Prior Learning Portfolio Project

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" … *People who step forward at great risk awaken us to the hidden intelligence and courage that we pass every day on the street.*"

– Steve Kindred, labor activist (2013, para. 3)

Introduction

The characteristics of work-based learning present challenges to students as well as to those practitioners who support, facilitate and evaluate prior learning portfolio development. Students identifying competencies and learning outcomes from work experiences for the portfolio process revisit these experiences for their educational value. As they circle back to articulate their work experiences and learning for portfolio development, they wrestle with and reveal important differences between conventional classroom paradigms of learning and work-based learning. The portfolio process takes work-based learning as an object of reconstruction, representation and critical reflection. The challenges for prior learning portfolio development involve the unique characteristics of work-based learning. These include the fact that working knowledge is often implicit, rather than explicit; it is often collective and distributed, rather than individually held; and it is embedded in social and material environments, rather than abstracted from them. Portfolio development requires an individuation of the learning typically achieved in collective contexts of work, as well as a reformulation of activity-based knowledge as an object of reflection, reconstruction and typically writing.

While traditional colleges are designed to facilitate the transition from school to work, adult education is unique in managing the transition from work into school; this inversion comprises the very opportunity of the PLA process. According to one student's written evaluation of the PLA process,

> It allows me to describe the things I have learned at work, and it allows me to let others who may never have experienced dealing with the type of individuals I work with (people with autism) into my world. I also appreciate the fact that someone may think that my work experience and knowledge is valuable.

Adult students re-enter the school context with considerable experience and knowledge, much of which remains relatively unprocessed. The challenge of harvesting students' work-based learning for the portfolio process involves supporting the articulation of informal and implicit prior learning, reframing work as a source of development, and cultivating confidence and metacognition in adult students. Underlying all of these is the project of scaffolding students' self-acknowledgement as knowers, learners and ultimately, teachers.

The learning achievements of work are best viewed as "mind in action" (Scribner, 1997) and "cognition in the wild" (Hutchins, 1995). Because of its contextual nature, work-based learning can be productively viewed through a sociocultural model of learning such as that of Lev Vygotsky (1978; 1986). As well as providing a useful framework in which to consider work-based learning and prior learning assessment (PLA), the sociocultural approach reframes the learning done at work toward a realization of its potential in the project of human development (Kindred, 2012). According to Vygotsky, "More than once, Marx demonstrates how labour by itself or large scale industry by itself does not necessarily have to cripple human nature, as a follower of

Rousseau or Tolstoy would assume, but, on the contrary, *it contains within itself endless possibilities for the development of the human personality*" (1994, p. 179). The PLA model as applied to work-based knowledge shares this developmental optimism, suggesting that work can be empowering and productive for the individual beyond the extrinsic rewards of pay and perquisite on the job. Likewise, according to LeGrow's (2000) research, PLA portfolio production has educational benefits far beyond the extrinsic reward of college credit for experiential learning, including the development of knowledge organization skills for students at all levels of work experience.

At The College of New Rochelle's School of New Resources, as at many institutions in which PLA options exist, a course-equivalency portfolio process is facilitated by a 2-credit course, Prior Learning: Theory and Practice. The school has been a leader in adult education and in PLA since the founding of the School of New Resources in 1972. Across the decades, the PLA practice was revised and increasingly limited due to concerns about portfolio writing quality; this included a trend toward centralizing the 2-credit course at only one of the six branch campuses and raising the level of prerequisite English courses. Recent efforts to revitalize the PLA process at the School of New Resources have seen considerable success. Redistribution of the 2-credit course to all six campuses in the boroughs of New York City, alongside retraining of faculty and reduction of English class prerequisites, have resulted in increased student access and a consequent rise in prior learning course enrollment, portfolio submission and PL credit attainment. The college uses a course-match model, whereby students petition for credit by presenting writing and documentary evidence according to the objectives outlined in course descriptions, which includes the option to write a course description and advance it through curricular approval should a relevant course not be found.

I am a professor and mentor of prior learning theory and practice at the Brooklyn campus of the School of New Resources. My own previous research was focused on cognitive and cultural change in the industrial workplace (Kindred, 1999; 2005). I am interested in the challenges that adult students face in the transition from work to school and the potential harvest of work-based learning through the PLA process. This paper incorporates insights from work research with current observations of PLA in action at the School of New Resources in order to articulate a sociocultural approach to the elicitation and articulation of working knowledge and the cultivation of metacognition and confidence in adult students in the portfolio development process.

Turning Bloom's Taxonomy Upside Down
A deeply held assumption of school-based learning is that there is a proper order to the pedagogical process. In the school context, the introductory course comes first, in which the vocabulary of the field is learned, whereas the application of concepts occurs in more advanced courses. In work-based and experiential learning, in contrast, knowledge application typically precedes knowledge identification. In the context of getting work done, knowledge is applied more often than named. That is, knowledge is gained in the service of activity, such that learners master the skills of application and evaluation before and often without the lessons of formal nomenclature. In this sense, work-based learning turns Bloom's taxonomy upside down and challenges the very structure and architecture of school-based education (Kindred, 2013).

A few examples from the PLA classroom may help to illustrate this idea. A person caring for young children, whether as a parent or nanny, may describe the experience of pointing to objects in the world that the child is noticing and providing corresponding words. They may well recognize and describe this as an important aspect of their work activity that promotes the child's development both linguistically and conceptually. Very likely, though, unless they have read textbooks on the subject of child development, they will not know that this phenomenon has a name and is called "joint attention" by the scholars who study adult-child interaction.

"I can explain what I do, but I'm not sure what the name of that is," said one student, describing her work as a hospital community liaison and peer counselor to the students in the Prior Learning seminar. The term "active listening" emerged to summarize her description of helping others, as it became clear to fellow students that

this was the term for her activity. Through the classroom dialogue, terminology was married to practice.

Another student, in petitioning for credit for a social science course called Community Organizing, described "house meetings" held in her neighborhood to galvanize support for collective action. Translation to the more formal term of "focus group" involved iterative evaluation of her course narrative against the course description, working within the course-match model of PLA at The College of New Rochelle.

Encouraging prior learning students to read about what they know and to review textbooks, glossaries and even course descriptions can help them bring language, framework and conceptualization to their practical knowledge. Similarly, PLA work in concept mapping sometimes entails providing a list of relevant terminology among which students then demonstrate relationships through linkages of varying complexity (Popova-Gonci, 2013). As Vygotsky (1978; 1986) described, such practices set into motion a dialectical dynamic between past spontaneous or experiential learning and new scientific or formal learning that can contribute to conceptual development. This process has bidirectional benefits; names can be identified for practices and concepts, while words also may stimulate the articulation of further narrative development.

In experiential learning, the application of concepts is active, while the naming of concepts may be elusive. Bloom's taxonomy is turned upside down in the case of work-based learning. The sense of knowing without the disciplinary language or even knowing without the words is a typical condition of workers on the job and those who have learned through experience rather than instruction, as they face the task of knowledge articulation for prior learning assessment.

Harvesting Work-Based Learning in PLA
Learning at work and learning at school are very different processes with different purposes and outcomes, as well as contexts. Work-based learning is embedded in cultural environments and activities, rather than abstracted from them. As Glick (1995) argued, "The shift in unit of analysis from individual to individual-in-structured-environment is a part of the conceptual reconfiguration involved in the perspective of development based on the view from work" (p. 370). The person at work is an actor in the world, a participant in and across activities whose purpose is typically other than learning. Informal learning is a byproduct of work activity, in which the primary goals are productivity and competence on the job. Learning at work is typically learning *for* work, in which the value of learning is subsumed to the larger goals of profit and productivity. This instrumental quality of practical thinking is a signature of work-based knowledge and activity (Scribner, 1997). Lave and Wenger (1991) described situated learning at work as learning that takes place in a community of practice and is applied in the very situation in which it is learned. In this sense, learning at work is parenthetical or incidental to the collective and cultural project of work activity gained and executed in the service of accomplishing the tasks at hand.

The collective, socially distributed and instrumental aspects of work present unique challenges in the PLA project of identifying individual learning. Individuation in the articulation of work-based learning is more than a matter of words. In order to harvest work-based knowledge, the learner must come out of the job perspective and into a more organizational view. This is not a simple matter and not easily done on command. Stories of workplace experiences and narratives of critical incidents on the job promote this larger organizational perspective. So, too, do descriptions of the social and material architecture of work.

Within the context of the Prior Learning seminar, participants, including other students and mentors, often detect the organizational knowledge that remains implicit in a given story, and through the classroom dialog, this aspect can be further drawn out. Another effective strategy for eliciting the organizational view is stimulating workplace critique. Through resistance to the ways that work is organized and accomplished, workers often articulate cogent and theorized alternatives. In doing so, they also reveal their knowledge and its theoretical substrate. Such resistance can be catalyzed by discussions about how one would do things differently, were

they in charge, as well as through work simulation exercises that trigger frustrations associated with the actual work environment (Kindred, 1999).

Limitations of Learning in the Workplace
At work, there are predictably gaps in the content of individual learning due in part to the distributed and collective nature of workplace knowledge, and in part to the constraints imposed by workplace cultures themselves. Kyndt, Dochy and Nijs (2008) outlined "the stimulating and obstructing conditions" (p. 370) that may promote or inhibit learning in the workplace. They concluded that the most salient learning stimulant at work is feedback, and that learning opportunities vary significantly with the level one occupies in the organization, such that higher level jobs promote greater opportunities for learning on the job. Similarly, Billet (2001) described the asymmetrical distribution of affordances for learning in the work environment, demonstrating that higher status workers encounter more opportunities for learning. He further made the point that opportunities for learning are functionally equivalent to opportunities for participation; and that participation is a reciprocal variable, influenced by both the environment's affordances and the individual's engagement or reluctance to engage. In this sense, workplace learning may be powerfully shaped by psychological ownership on the job (Kindred, 2005), including workers' relationships to tasks versus outcomes of work. That is to say, workers who have a sense of responsibility for the outcomes of work rather than only for the execution of procedural tasks gain greater opportunity to engage with their work in ways that promote their own learning (Scribner, Di Bello, Kindred, & Zazanis, 1991). These affordances are shaped by power relations, including individual relations to authority, as well as by the social and material conditions of work (Fejes & Andersson, 2009).

The often truncated nature of work activity and experiential knowledge presents contradictions and challenges for the consideration of individual learning. Workplaces are often organized to constrain learning and limit knowledge to certain levels of the organization as many jobs are designed on a "need to know" basis (Edwards, 1979). Knowledge develops in leaps during periods of intensive technological and organizational change (Engeström, 1987), as well as during problem episodes that take workers beyond the level of procedures or in job situations where workers are supported to engage in constructive activities, in which the means remain unspecified while the goal is clear (Scribner, Di Bello, Kindred, & Zazanis, 1991).

For instance, a student who worked as a bank teller described to fellow PLA students an incident of cashing a check for a customer that was not valid. In being asked by fellow students to explain why the incident was a problem and why she got in trouble for cashing the check, she revealed her knowledge of the organizational structure of the financial system of the bank. Mistakes and feedback at work can provide fruitful narrative in the PLA process.

As practitioners, PLA mentors, instructors and evaluators are faced with the task of helping students identify these gaps, and scaffolding techniques to fill those gaps such as encouraging further reading, observation or interviewing others on the job to learn what knowledge or information they are missing. Encouraging students to describe organizational change, as well as to reflect on problem episodes and mistakes, are productive strategies for surfacing knowledge and externalizing the assumptions underlying it, and for identifying learning as process, as well as content and outcome.

Characteristics of Working Knowledge
Echoing Hutchins' (1995) theme of the distributed nature of knowledge at work or "cognition in the wild," Glick explained (1995), "'Knowledge' may be located either in the worker, or in the work environment. Knowledge can be 'distributed'" (p. 369). Embedded in social systems and artifacts, the cues that workers read in their work environment to help them make decisions and organize their actions are subtle and often invisible to outsiders. In such contexts, as Klein (1999) argued, experts can see things and read meanings that novices cannot. For this reason, it is useful to ask PLA students to describe the organizational, social and material environment of their workplace by observing it directly.

As true as it may be that experienced workers see the environment differently than novices and outsiders, their access to articulating these meanings may not be verbally direct. This relates to the cognitive organization of expertise in which knowledge, deeply internalized, comes to reside at the level of intuition, assumption and practice (Dreyfus & Dreyfus, 1988). According to Dreyfus and Dreyfus (2008), "After enough observations of the results of actions in a particular type of situation, the expert not only experiences one of a large repertoire of intuitive perspectives, but also sees immediately what to do" (p. 118). Klein (1999), studying firefighters in rapid decision-making situations, echoed Dreyfus and Dreyfus in describing experts' skill at situation assessment as "recognitional decision strategy with singular evaluation rather than comparative evaluation" (p. 97). Rather than seeing novices jump to single answers and experts generate a full menu of choice, Klein reported, "it was the experts who could generate a single course of action, while novices needed to compare different approaches" (p. 21). The implication of Klein's insight for prior learning articulation is that knowledge is more implicit for experts than it is for novice and intermediate problem-solvers for whom "experience is inadequate and logical thinking is a substitute for recognizing a situation as typical" (p. 22).

While experts may arrive at a singular solution in a particular situation, they do not arrive at a single solution across problem situations. Scribner's (1997) theory of practical thinking describes expert practice as characterized by variability and flexibility. The implication for prior learning is that the more expert one's knowledge, the more situational as well. In instances in which novices are more ready to articulate what they know than experts, their knowledge is less mature and seasoned. Experts are more likely able to describe a situation and course of action or tell a story than to outline the range of possible situations in comparative terms. The sophistication and complexity of experienced knowledge exhibited in stories provide examples from which knowledge can be induced, whereas novices would start from knowledge to arrive at more hypothetical and deductive examples as illustrations rather than resources for thinking.

While experts have knowledge of a wide array of situations, verbal access to this knowledge may more likely be gained through storytelling and through what Klein (1999) called "critical incident interviewing," rather than through logical and linear knowledge outlining. Students can be encouraged to write event episodes or conduct recorded interviews or teaching sessions with each other, and then answer questions of what thinking and knowledge were applied, or what was learned or observed from a particular experience, or what a person would need to know in order to do what they did in a particular scenario in a kind of hermeneutical process.

Scribner described practical thinking as a process that is functionally and creatively adaptive within complex environmental contexts. It is goal-directed and typically involves shortcuts of manual effort enabled by mental calculation; "In product assembly," she wrote, "mental work will be expended to save physical work" (Scribner, 1997, p. 361). In her claim, she articulated such strategic optimization as a signature of extensive practical experience. These non-literal, least effort optimizing solutions embed theories and calculations that usually remain implicit in the process of work, but can be a powerful basis for seeking the theory underlying much practice. Safety behaviors, including stories about past tragedies in high risk industries like power and the railroad, are another rich source of practice undergirded by implicit, but no less active, theory. These examples illustrate the way in which the social and material environment at work mediates and comprises part of the cognitive system itself. Again, descriptions of the social, regulatory and material space of work may scaffold the explication of knowledge, action and skill.

Technologies and tools provide shortcuts, while also being themselves symbols, abbreviations and holders of knowledge (Stetsenko, 1998). According to Glick (1995), "Most work environments house 'artifacts' constructed either by workers or by technical designers, which 'embed' needed knowledge within the artifact structure" (p. 369). A TWA (Trans World Airlines) flight attendant in the mid-1990s, for instance, tracked liquor distribution by labeling the top of a Styrofoam cup with three categories and stabbing it with a coffee stirrer to record consumption of beer, wine and "minis"; she used the data of holes made in her first cup to forecast usage for the second round on long trips and observed her relative accuracy and error of prediction in

doing so (personal observation). This innovation was unofficial and the tool was makeshift, passed from one worker to the next in a theorized *bricolage* (Levi-Strauss, 1966), but it demonstrated a conceptualization of inventory tracking and approximated the function of hand-held technology built into the job within the ensuing decade. Such innovations are good illustrations of knowledge on the job.

Experience enables assessment of the ways that tools, maps and systems in use function, as well as how they have been developed and designed based on logics that are separated from the realities of working processes of production. This knowledge helps workers understand the limitations of tools and the constraints of information that they are working with, such that "they know when the steps have to be followed and when to make exceptions" (Klein, 1999, p. 117). For example, gear manufacturing planners, many with 15 to 30 years on the job, were adept at interpreting the gaps between "night-note" information handwritten on yellow pads that detailed work done on the night shift, and the system-generated planning sheets that showed the overall official schedule of work to be done that were representative of daytime job scheduling (Kindred, 2005). Similarly, studies of electronics manufacturing workers in the late-1980s revealed that a key distinction of those with extensive experience was their capacity to interpret decision support technology outputs and recommendations; in these assessments they could compare how the system processes information to how things really are on the production floor (Scribner, Di Bello, Kindred, & Zazanis, 1991; Glick, 1995). That is, they could assess how the information provided by the system was constrained by the system design itself, and coordinate their action across the system logic and the realities of the work being done. For this reason, it can be useful to encourage PLA students to describe the toolbox of their work and the systems they encounter on the job.

While much of the research about workplace knowledge is framed in the terms of expert and novice, PLA students are likely to occupy a more liminal space in their working knowledge, as neither expert nor novice. Further, LeGrow's (2000) work points to the positive educational benefits and knowledge organization skills that accrue from the portfolio process itself, regardless of level of work experience. To stimulate understanding and representation of the knowledge that students as workers do have, it is useful to scaffold them to remember the stages of their introduction to the domain and the training they received, to describe who they were before they entered the experiential learning environments of the work they occupy, and to elaborate how they see things differently through the lens of their working knowledge.

For instance, a TSA (Transportation Security Administration) worker in the Prior Learning seminar described how she now assesses each location she enters, including the school, in terms of security concerns, noting opportunities for non-member entry, location and signage of exits, and presence of identification, as well as reading body language for suspicious behavior. This bottom-up approach to portfolio writing, where students describe their work in problem episodes, stories and examples is a good first step in the process of course-matched PLA portfolio development.

The course-match process then becomes another challenge in itself. Course match entails a "goodness of fit" question that requires the dialectical development between course objectives and the outcomes of working knowledge. Scaffolding students toward awareness and translation of their working knowledge in the course-match model involves supporting the process of identifying relevant course descriptions that typically do not map onto job or activity descriptions in a direct way. This process is essentially a dialogic one, involving one-on-one interviewing of students by a mentor who is knowledgeable and familiar with course offerings and their multidisciplinary range. Students, once exposed to suggestions in this way, are enabled to use such course descriptions as outlines for their own course narratives, identify knowledge gaps that may need new research, and search further for course descriptions that may serve them better or in addition to the descriptions they have thus far found. This process may even be useful in other PLA models that are not restricted to course matching but may still be supported by the learning objectives articulated in course descriptions.

Metacognition as a Developmental Goal

To "know that one knows" is surprisingly difficult in the context of working knowledge since often such knowledge is deeply internalized, procedurally rather than semantically encoded and catalyzed by situation rather than by contemplation. The characteristic applied, implicit and collective qualities of knowledge at work point to a fundamental challenge of portfolio development: the elicitation of internalized knowledge. One PLA student wrote, "The hardest part for me was coming to know what I know (metacognition). This concept was introduced to the entire class and this is when the light came on." The challenge of metacognition is at the heart of the PLA project. "Knowing 'what we know' and 'what we don't know' is a challenge for all learners" (Blakey & Spence, 1990, p. 1), but students face unique obstacles when considering the learning that is done at work.

Vygotsky (1986) argued that higher mental functions of thinking and reasoning are developed through cultural and social engagement, and that their embodiment as inner speech derives from internalization of the social dialogue. Vygotsky further suggested that thinking as inner speech or internalized social dialogue is predicative because we always know what we are thinking about.

> Predication is the natural form of inner speech; psychologically, it consists of predicates only [. …] The key to this experimentally established fact is the invariable, inevitable presence in inner speech of the factors that facilitate pure predication: We know what we are thinking about – i.e., we always know the subject and the situation. (p. 243)

Vygotsky's notion of predication accounts for some of the difficulty of eliciting work-based knowledge in portfolio development. Predication speaks to the implicit quality of thinking and the difficulty of achieving objectification of knowledge and of oneself as a knower. Introducing such theory to PLA students is important as it helps them identify the challenges of knowledge articulation.

Metaphors of process and learning are valuable tools in conveying the project and challenges of explicating prior learning to students as well. For instance, theories of brain functioning describe the differential encoding of practical or procedural knowledge and semantic or declarative knowledge as well as the principle of plasticity that promotes the notion of lifelong learning (Aronson, Fried, & Good, 2002). Understanding that kinds of knowledge are encoded in different parts of the brain can help students identify the challenges in making connections between ways of knowing. For instance, procedural knowledge is housed in the cerebellum while semantic knowledge is housed in the cerebral cortex; similarly, nonverbal knowledge is typically processed in the right hemisphere while verbal knowledge is processed in the left hemisphere. While all students know how to tie their shoes, few can explain it without physical enactment or imitation of the task. Such illustrations demonstrate the need for performance observation and exercises of externalization in the process of verbalizing practice. These neurological lessons as metaphors help students become aware of the translation processes and iterative externalization that they may need to move from one level of knowing to another, while the notion of plasticity conveys that they can. Further, understanding these issues of processing can help practitioners identify some of the challenges that students face in knowledge articulation of experiential learning.

A basic Vygotskian principle is the zone of proximal development that suggests a student may perform differently alone than with a scaffolding or supportive other (Vygotsky, 1978). The underlying notion includes that with another, an individual is brought into the dialogic relationship in which they are empowered to ask a question; whether or not an answer follows, the very act of questioning opens the mind to think more flexibly and actively, gaining access to its own resources. This suggests that the act of the question itself enables students to think more openly in and about their own activity. The basic quality of dialogic thinking is key in cultivating students toward metacognition to support their productive development in prior learning portfolio writing.

The challenge for the portfolio writer is one of becoming a teacher by developing the skill of knowledge externalization (Nonaka, 1994). It is difficult for knowers to imagine not knowing what they know, making the

project of externalizing knowledge one that involves interrogating the assumptions they carry in their own thinking, identifying the sources of their knowledge and generating the text of their inner speech. Predicative writing and writing in the first person, both discouraged in formal academic approaches, can be fruitful tools for helping students say what they know from experience (Kindred, 2013). Similarly, nonlinear methods such as concept mapping can be used as a step in iterative externalization or even as a PLA product in itself (Popova-Gonci, 2013).

PLA involves developing the metacognitive skills in order to go beyond the description of activity to the analysis of learning and knowing. One student wrote, "'Metacognition.' I have just learned this word and meaning and I love it. I know now what it is to know what I know." This reflective process entails discussion of theories of learning and knowing as well as the cultivation of confidence that enables students to consider their working selves as relevant contributors to the academic project.

Scaffolding Reflection on Activity-Based Learning
In the process of harvesting activity-based learning, new learning also must be cultivated. As Fejes and Andersson (2009) explained of reflective learning conversations among care workers assessing their prior learning, "Such a process is not merely a process of recognition but also a process of learning" (p. 49). PLA is not a reporting process, and because of this, it is itself a reflective learning experience and potentially a transformative one (Mandell, 2013). As Cox (2005) pointed out, "the regular use of a reflective practice tool or model makes learning from experience a more reliable and faster method of gaining access to necessary knowledge and wisdom about our work processes and ourselves" (p. 460). She suggested that Mezirow's "perspective transformation" may be catalyzed by such reflective practice, such that awareness develops not only about practices, but about the cultural assumptions underlying them.

Some of the new learning in the PLA process involves unlearning the formal academic rule of not using "I" in order to spur the generative potential of autobiographical writing, as well as entering the process of writing from the middle rather than abiding by a linear beginning to end product-oriented view of writing (Kindred, 2013). One student, in reflecting on the portfolio development process wrote, "In the journey my struggle is trying to do too many things at one time. I finally am able to start from the middle and work myself outward." Again, concept mapping and knowledge diagramming support this process-based orientation.

To value one's own knowledge and activity is a challenge in itself. When asked in a one-on-one prior learning meeting, "What do you do?" a student answered, "I've only ever been a secretary." After extensive discussion of this experience across several work contexts and a review of course descriptions that might be relevant, the student added, "Maybe I could look at some religious studies courses. I'm also a pastor." When asked why she had not said this initially, she claimed that she thought I was asking her how she earns a living. Deeply held assumptions about work, pay and value underlay this interaction, demonstrating the extent to which understanding the relationship between work and prior learning is compromised by assumptions of value that are difficult to unearth.

The Practice of PLA
In a practical sense, scaffolding reflection on work-based learning includes encouraging students to consider taking the Prior Learning course without yet knowing or having decided whether or how they will move through the portfolio evaluation process. This decision in itself must be seen as a developmental learning process that requires information as well as self-assessment and metacognition. Arranging interactions with students who have been previously successful in earning prior learning credits also is crucial, affording the opportunity for students to ask questions more openly, to identify with a peer role model, and to see that the portfolio project is doable. In fact, students who have been through the process are ideal ambassadors for PLA.

Scaffolding reflection on work-based learning involves designing the Prior Learning course as a process-

oriented writing seminar, while introducing students to theory that supports their development, including the concept of metacognition itself as well as Bloom's taxonomy (and variations thereof), Kolb's learning wheel and Gardner's multiple intelligences (CAEL, 2013). Vygotsky's (1978; 1986) notion of the dialectical interaction between spontaneous, informal, experiential knowledge and scientific, formal and academic knowledge also is a productive tool as students work their way toward identifying the language of the discipline that may correspond with and name their emerging knowledge descriptions.

As previously described, relevant strategies include social and material descriptions of the work environment; storytelling and critical incident interviewing; workplace critique; and problem, mistake and feedback review; narratives of event episodes and training experiences; self-observation; and further reading. Journaling a work day or week also can enable students to gain access to their working knowledge by supporting their self-observation. Similarly, certifications of training also can serve as guides for articulation as well as evidence, as students can be encouraged to describe the training processes and associated learning outcomes.

The distribution of work-based learning and knowledge across people, environments, activities and artifacts challenges the professorial model of the classroom in fundamental ways. Applying credit to multiple-sourced learning shifts some of the onus of knowledge organization and representation to the learner in dialogue with the practitioners that mentor and evaluate. Further, though, it promotes a different kind of learner, a different kind of teacher and a very different perspective on the project and content of learning. School-based assumptions about knowledge and learning are challenged by the PLA project generally, and they are distinctly at odds with the ways that most learning takes place at work or on the job. Examining some of the challenges of work-based learning, including its implicit, collective and embedded qualities, shines a light on other ways of thinking about learning, and compels nontraditional strategies for eliciting that learning for prior learning portfolio development.

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