Adult Learning and Technology in Working-Class Life

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Introduction

At the end of what I thought was the last of my schooling life, I began work as a press operator at a local auto parts factory not far from where I grew up. I worked there approximately 2 years, full-time, but on a probationary basis. After those 2 years, I applied for a permanent position but was turned down. Later that year I applied to graduate school, and began doctoral studies that included the research for this book.

That period of life taught me many lessons about learning that years spent in the educational system hadn't. It was at the auto parts factory that I moved beyond the abstract ideas about social class, culture, and learning to begin to see the living dynamics and contradictions of working-class life and adult learning in the concrete. Learning was all around and crossed the boundaries of home, community, and the workplace. It took place on the shopfloor, at the pub on lunches, sometimes at courses, and often around the home and neighborhood. It involved learning for the job, but more often it involved learning that was about everything but the job. Even stranger to me at the time, though I'd arrived as a kind of "certified" learner, with a university degree no less, I was amazed to see how little my papers really prepared me for how learning in working-class life got done.

Though learning happened everywhere, the workplace held a special place as an important organizing principle in people's learning lives. From my experiences in the factory, learning came through movement as I was bumped around from job to job. Typically, I'd be shown a machine by a senior worker, having its operation demonstrated to me with instructions shouted through the noise and never more than half heard. I was stationed mostly in the cold form department, where metal was stamped into shape by giant industrial presses. Instruction included locating the buttons that made the machine cycle, the places where workers shouldn't put their hands, vague demonstrations of acceptable quality, and the number of

parts, that is, the worker's required production quota, for the shift. After this, I was left to my own devices. Usually a couple of dozen pieces later, something would go wrong: The parts would begin to come out with mistakes or the machine would simply stop working. I'd peer into the machine, turn it off and on, walk around it, and then (inevitably) begin to wander through the department in search of the worker who had gotten me started. If this person wasn't available, another might help me.

If the machine really had broken down, I'd become a peripheral member of a congregation of workers who'd drop what they were doing and wander over for a brief look and a kind of half-yelled discussion that consisted more of actions than of words. Sometimes after only a short time these people would scatter because word would come that a supervisor was on the way. At other times, however, people got a chance to mill around the large machine for a while. What's more, they seemed to do it in a specific pattern, with more experienced workers taking the initiative, less experienced workers trailing close behind, occasionally checking a hunch of their own, and novices like me on the outside, watching closely and staying out of the way. I was truly dependent on the group of fellow workers in my department. People who've been in the position I'm describing know that if your fellow workers do not take you under their wing, learning can turn into an experience of social exclusion and powerlessness no matter what kind of diploma or degree you have. The social and the cultural, not the certified, the individual, or the cognitive, were definitive of the learning process.

I initially imagined that if I could just get a written manual with standard procedures, I'd be fine. I could do my learning *by myself*. But there was no manual, nor could there ever be one that met the learning needs on that shopfloor. What were needed were tacit skills, practical connections, and access to the knowledge hidden in the cracks and crevices of people's lives in and beyond work. What I saw was that one's knowing – even for the most experienced worker on the floor – depended upon ongoing integration with others. Learning was *our* ability to move about the plant, it was how closely *we* could be watched, and it was the structure of *our* time and space. Learning was defined by the chances we had to participate in mundane conversation. The reality of this learning had precious little to do with classrooms that made writing a test *alone* a measure of what a person could do or know. Solidarity and social connection defined one's ability to learn. It was the barriers, and the ways people beat them and didn't beat them, and listening to the stories people would tell about trying to beat them – this was the guts of the learning process. It meant

escaping boredom, solving the practical problems of stubborn machines and idiotic rules, and it meant feeling more human both within and beyond the workplace.

It might be contrary to conventional wisdom, but for me, my 2 years working in that factory and living in the community around the factory were the most intellectually stimulating of my life. These experiences brought the abstract and disinterested social sciences to life. In fact, as I looked back on these memories, I saw in them the origins of virtually every argument I present in this book. I saw the seeds of a critique of conventional adult learning theory. I saw and felt the effects of technology, and of course, I saw the pressing need for class analysis.

It has been understood for some time that social class plays an important role in people's education. An entire range of literatures that I won't review here outline this claim in myriad forms. At the same time, school and the classroom can hardly be said to be the sole or even the primary domain of learning, particularly in adult life and particularly among those who keep a distance from organized courses. From this realization there emerges a type of gap: How does social class affect learning in all its forms? This book is about seeing how social class is related to the learning that people do in a variety of social spheres including the home, the neighborhood, and the workplace. Though the book is about more than work-based learning, some of the most important discussions of learning, particularly at the policy level, require a discussion of people's lives as workers. In these terms, statements from business and government, as well as from most academic and media sources, ring with an apparent consensus: Our society and economy lack knowledge production capacity, and workers, both current and future, need to be whipped into shape. Technological adoption and computer learning in particular are thought to be central to the knowledge work process. However, to date, only a narrow band of researchers have sought to investigate the existing practices of working people in their attempts to make sense of, to cope with, and to self-educate in the face of technological change, and of these, few look beyond formal training. Fewer still have sought to investigate the everyday world of working-class informal learning and computers, and no sustained, theoretically informed research that I'm aware of has been undertaken to date that examines these broad learning processes from the standpoint of working-class people themselves.

Focusing on manufacturing workers in Canada's industrial heartland (southern Ontario), I've tried to draw on my own experience as a factory

worker, trade unionist, adult and labor educator, and sociologist to offer a detailed look at computers and learning practice among working-class people. I make use of *learning life-history* interviews in which people shared their life experiences in a series of lengthy sessions that often illuminated some of their deepest desires, fears, and hopes. Supporting these data, I draw on selected ethnographic observation in homes and factories, as well as illustrative analyses of large-scale survey materials and microanalyses of human–computer interaction. Taken as a whole, this research provides evidence of the complexity, the contradiction, and above all the class-based character of adult learning and technology in people's lives.

In terms of its value to broad economic policy discussions, the evidence in this book suggests that economic shortcomings, slowed productivity gains, and the inability of organizations to meet the challenges of a globalized economy do not revolve around the lack of learning among workers. Indeed, in a historical period in which lifelong learning, knowledge work, and high-tech production options are regularly touted as magic bullets, I show the type of unused knowledge creation that currently exists among workers. What we see throughout the text are the ways in which working people learn together, often in the form of networks. And based on the analysis, I suggest that economic problems may be rooted in the social organization of work, the lack of open forms of free association at work, and, ultimately, the lack of worker control within the labor process. We see that the apparent problem of a *technological underclass* is less a reflection of the availability of equipment or people's cognitive abilities than a matter of their access to stable cultural communities that recognize and build upon the social standpoints of their members, which in turn provides a voice, opportunities, and power for these communities. I provide an account of the attempts of particular members of an important social group to cope with ongoing changes in society within and beyond work, and in so doing I challenge the myth that adult learning – even the everyday forms of learning that are, in principle, open to all – can be understood as class neutral.

The material presented in this book lies at the intersection of several different bodies of literature including adult education, labor studies, sociology of education, sociology of work, cultural studies, and technological/computer studies. It provides a discussion of adult learning in the everyday that is absent from the vast majority of studies of work culture and social class, and it provides a critical class analysis of human–computer interaction. The chapters provide a fairly detailed account of working-class perspectives, experiences, and practices surrounding how and why

working people like the ones I speak with learn about computers. I argue that class processes give rise to unique patterns of learning, and I examine the meanings that emerge from class experiences in the school, the community, the union hall, and the home, as well as the workplace. I explore the material structures that shape learning practices, and I examine the role of oral communication in the reproduction of skill and knowledge, and relations of class themselves. As Michael Burawoy remarked of his own seminal study, "this is not an exercise in neo-Marxism, Marxist revisionism, or any other label social scientists may apply to the Marxism they may wish to take seriously. Rather, it is a Marxist study" (1979:xii). I too am primarily concerned with change in and continuity of class life within capitalism. By explicitly combining a Marxist framework with key theories of adult education, and with critical understandings of technology, I hope to show how working-class practices contribute to the reproduction of capitalism while at the same time producing openings for unexpected change and the potential for social transformation. This is, however, an exploration rooted in an abstraction. The specific focus on social class tends to leave out other key processes of subordination – to begin with, those based on race and gender. Concrete reality involves the interaction and simultaneity of these processes, and thus, although it is still useful to explore class as a specific social phenomenon, the study must be said to have important limitations. At points it becomes virtually impossible to separate out the effects of gender and race. In these instances, I've presented some modest discussion that, unfortunately, can only begin to scratch the surface of the real complexity of subordination in social life.

Ultimately, the implications of this discussion include the distinct possibility that the activities examined lie at a historical conjuncture in the political economy of adult learning. The emergence of the discourse of lifelong learning may be a very real and specific flashpoint for the more generalized social struggles that characterize the latest phase of capitalism. In other words, the discourse of lifelong learning, though not monolithic, may represent a previously unheard of penetration of capitalist relations into the lifeworld of human communities: a qualitatively different level of market rationalization of human activity. In the following chapters, we can begin to see the extent to which people see their lives as the production of exchange values in the form of skills, knowledge, experience, and credentials for sale in a labor market. Boundaries between home, community, and work life dissolve. We see how people are, perhaps more than ever, understanding their lives as a type of lifelong capitalist economic enterprise. Learning is increasingly understood, discursively and

institutionally, through the lens of capital accumulation by which human beings are converted into what has been called *enterprising selves*.

The text is organized into two basic parts. It begins with discussions of the central concepts of learning and computer technology, followed by chapters that each focus on a different theme within the exploration of working-class computer learning. Overall, the argument is organized as an accumulation of related but distinctive discussions and claims. More specifically, in Chapter 2 I provide an explanation of what's been called *'class deficit'* theories of learning (Curtis, Livingstone, and Smaller, 1992; Livingstone, 1999; Livingstone and Sawchuk, 2000; Livingstone and Sawchuk, in press). I review several dominant theories of adult learning for their ability to make visible the social relations that shape computer learning in the everyday from a working-class standpoint. I reflect on the interlocking set of class biases in adult learning theory to organize the critique. My own analysis draws on various sociocultural theories of adult learning, and in this chapter I conclude with a critical introduction to the situated learning perspective of Lave and Wenger (e.g., 1991) and activity theory (e.g., Leont'ev, 1981; Engeström, 1987).

In Chapter 3, I situate computer technology historically in terms of relations of social class. I begin with remarks on the development of computer technologies and the social relations "cemented" in them. I draw on the work of technology historians David Noble, Lewis Mumford, and Andrew Feenberg to identify specific capital- and labor-centric approaches to understanding and developing technology. In the second half of the chapter, I focus on the meaning and experience of computer technology in the lives of the people interviewed. I outline a working-class technological "common sense" that is directly linked to class relations in the home, community, workplace, and labor market. This discussion helps us to understand the alternative perspectives on technology and provides a prologue to the more specific discussion of tool-mediated learning later on.

Chapter 4 focuses on some of the tacit elements of computer-based activity through the use of fine-grained microanalysis of interaction. By definition, the tacit is not easily expressed in interviews. Thus, these two abbreviated case studies serve as "specimens" for our development of a deeper understanding of the social processes involved in the computer learning practice that people describe during interviews. The first study deals with two unemployed men learning to use computers together in a computer lab in a Labour Education Centre in Toronto (Canada). This analysis provides a detailed look at the way people create knowledge and skill collectively through tool-mediated interaction. This case study links a major element of my critique of adult learning theory in Chapter 2,

namely, the pedagogical and individualized biases of learning theory, with computing specifically. In the second case study, I present a detailed analysis of worker–computer–organization interaction. By looking at a worker's interaction with the screen texts of company software in an auto parts factory purchasing office, we see how worker activity is tacitly organized and controlled. We also see the informal ways that workers, nevertheless, learn together despite company rules.

In Chapter 5, I draw on activity theory and situated learning frameworks to present interview data that show the dynamics of how working-class people carry out their computer learning across a variety of social spheres. I demonstrate how this computer learning is tool-mediated and can involve what I refer to as *solidaristic networks* that operate at the intersection of multiple systems of activity. The analysis introduces one of the key contributions the book has to make to studies of adult learning, namely, a novel application of Pierre Bourdieu's concept of habitus. This chapter begins to outline several core features of a working-class learning habitus, the modes of participation from which it arises, and the forms of activity it tends to produce.

Chapter 6 offers a brief but focused discussion of working-class standpoints in computer activity. It draws on concepts developed in the work of Georg Lukács and various Marxist-feminist standpoint theorists. I show how issues of working-class standpoint can be used to radicalize adult learning theory generally and activity theory and situated learning approaches specifically. I provide a brief discussion of large-scale survey data showing interclass comparisons in terms of learning methods, and I compare the computer learning among workers who are unionized and nonunionized to highlight the effect of organized expressions of class standpoints on the working-class learning habitus. Finally, I review interview data from an upper-class mini-sample that further illustrates class effects on perspectives and practices involving technology and learning in the everyday.

Chapter 7 outlines the relevance of everyday conversation in working people's learning. Following the provocative work of Julian Orr (1996), I show how talk is used for working-class computer learning in two distinct ways: (1) within the course of computer-based learning practice and (2) outside of computer-based practice as a means of knowledge storage. Both forms of talk are shown to make use of specific oral artifacts or devices in such a way as to share knowledge and maintain communicative interaction despite the barriers of technical language, as well as to coordinate group membership and express class standpoints in activity.

In Chapter 8, I focus on the material barriers and contexts that face working-class computer learners. I discuss issues of social standpoint, and I include reflections on survey data that again show distinct class differences. Importantly, in this chapter I provide several brief discussions of the effects of gender and social class together, using examples that focus on experiences in workplace learning and the division of labor in the home. I point to my own previous research that provides everyday examples of how segmented labor markets and relations of language in the workplace also help to differentiate people's learning experiences in terms of race–class interactions. Finally, I evaluate recent Canadian computer access and use research to show several important gaps in its understanding and representation of working-class practices.

In Chapter 9, I discuss the process of commodification and its role in the coordination of computer learning in political economic terms specifically. As it applies to the way that people think about and carry out their learning, commodification is a process through which people integrate their lives and abilities with capitalist markets. In this process, the production of skill and knowledge becomes less and less driven by individual and community needs directly, and more and more driven by the logic and imperatives of profit making and capital. The chapter further refines the class analysis potential of activity theory and shows how class relations – and specifically what Marx called the *inner contradiction of use and exchange-value within the commodity-form* – are implicated in the motive-structure of activity. We see how exchange-value orientations in working-class computer activity represent a process of incorporation into capitalist relations, whereas use-value orientations produce activity that runs tangential or in some cases in direct opposition to the degenerative cycles of capital accumulation.

Chapter 10 summarizes the separate elements of the argument that adult learning undertaken in everyday life and across multiple spheres of activity is thoroughly saturated with relations of social class. Not only can we see that class relations play a role in the dominant ways of thinking and talking about learning, but I summarize the claims that the differential class perspectives and experiences with computer technology, the specific class-based dispositions toward the learning process, and the differential material contexts of learning practice all suggest the need for class analysis. I include a brief discussion of practical applications of the major findings and then outline two broad policy directions that the research suggests.