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## UNDER REVIEW

*Shop Class as Soulcraft: An Inquiry Into the  
Value of Work*

By Crawford, Matthew B., (2009).

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### Abstract

Author Crawford argues for the revival of teaching the skills of tool, machine, and material use in the schools. He points to the decline in our knowledge of the artifacts of our culture and the resulting loss of self-determination. The teaching of manual competence has also provided a method of learning that is well suited to many students who are otherwise disenchanted with school.

### Review

Those who teach the art and practice of tool, machine, and material use will probably agree with Crawford's assertion that real knowledge comes through confrontation with real things. The theme of the importance of manual competence is repeated throughout this book in a variety of ways and with multiple examples based on the author's observations and experience.

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Matthew Crawford is a motorcycle mechanic, experienced as an electrician, and has a Ph.D. in philosophy. These facets of his personality are evident in his writing. Having grown up in a communal setting he had early opportunities to work under the guidance of experienced adults as an electrician. He learned many of the intricacies of wiring and the value of the bond among those who engage in the same kind of work. The fraternity of all those who do similar work has remained with him and given him an identity and appreciation for the work of others who live by the skills they possess and solve the problems that confront them. This has extended beyond electricians to practitioners in other crafts where judgment arises from knowledge, skill, and experience. He often reflects on how this is part of the life of any tool and machine user including those in his present chosen occupation as a motorcycle mechanic. Between his time as an electrician and a mechanic, Crawford earned a Ph.D. from the University of Chicago in History of Political Thought. Therefore he compares the motorcycle repair experience and its physicality and demands for rigor to the protocols of academic publishing and his resulting feelings of professional panic and lack of productivity.

Crawford sets out to speak for what he considers to be an ideal; that is manual competence. He recognizes that today there is little accommodation for this point of view. The decline in tool and machine use has resulted in a more passive and dependent relationship with our material. People buy what they once made, replace or hire an expert to repair rather than fix themselves. And, the expert often will replace an entire system because a minor component no longer functions. He notes that many believe that it is economically and morally irresponsible to educate the young for tasks and jobs that require skills in tool and machine use and knowledge of materials and processes. Such a course will result, it is argued,

in obsolete competencies and learners who forego opportunities to engage in more futuristic endeavors.

On one level this book is Crawford's attempt to understand the greater sense of influence, control, and competence that he has doing manual work. He compares this with what is called knowledge work. His experience is that manual work often is more engaging intellectually. For example, there is work that is rule-based, such as preparing a tax return or running a laboratory test. By contrast, the mechanic does not have clearly defined problems like those at the end of the chapter in mathematics. Usually, the first step for the mechanic is finding the problem. When the rules no longer apply, creativity must begin. Often there is misleading information and ambiguous clues about the problem. All of this must be sorted out by a mechanic who is able to draw on a reservoir of hunches and hypotheses formed by personal experience with problems that bear some resemblance to the present situation.

Why has manual work been devalued as a component of education? Many schools no longer have shop classes, agriculture labs and fields, food preparation areas, or classrooms for teaching office skills, having opted for computer literacy or some other more controlled classroom endeavor. There is little honor in our schools for the productive and consumptive competencies that can be developed through engaging with real objects of everyday life. The student who would pursue this learning becomes an outsider in a school that would rather have every student engage exclusively in studies that are thought to produce college readiness. Learning manual skills, broadly speaking, and preparing for college are not necessarily in opposition to each other. But many a student and student's family give in to the social pressure to follow the more abstract curriculum to better prepare to matriculate to a four-year college, or so they

think. The dichotomy of blue collar/white collar, manual/mental work does not exist in reality, and the goal of sending every high school graduate off to college while egalitarian is essentially snobbish. Crawford challenges educators to rehabilitate the learning of manual skills as cognitively rich education.

The disappearance of tools from the curriculum of schools is a step toward wider ignorance of the artifacts in our culture. As Crawford sees it, there is more and more hidden from us as the devices that we use do not allow for intelligent inspection. The days of Sears catalogues with blown-up parts diagrams and schematic drawings are long gone. Oftentimes there are warnings about removing covers, fasteners that require specialized tools, or manufacturing methods that lead to destructive disassembly. The components of systems are treated as “black boxes” and become more mysterious and untouchable as they incorporate more and more functions. The components of electronic devices demonstrate this point as they are miniaturized and made more comprehensive. The decline of tool use and technical understanding signals a change in our relationship with our own possessions. In a sense they are not fully ours as we must replace rather than repair and depend on others to maintain proper functioning. Our ability to determine our own course is diminished and we lose actual control over some dimensions of our lives and environment.

With the decline in the teaching of manual skills in the schools, there is also the loss of a form of learning that is well-suited to many students. “Hands on learning” has almost been a battle cry among teachers of the manual arts. But in fact, it is more than manual learning that is involved. Mechanical work is unpredictable in its outcomes. The person who engages in it confronts real things, not contrived exercises in workbooks or computer simulations. There is active problem solving as the

person ventures possible solutions, acts on hunches, tries them, assesses results, and often restarts the process having failed to reach an acceptable conclusion the first time. Physical circumstances vary too much to be approached in a formulaic way. With experience, the learner moves from knowing what to knowing how and realizes how wide the gulf is between these two forms of knowledge. The building of expertise provides for fulfillment and builds confidence. Self-identity and creative abilities grow. In gaining expertise the person learns to perceive things that are invisible to the novice.

Crawford contends that this is not necessarily what society wants and that central to capitalism is the partitioning of thinking from doing. There should be those who think, plan, and manage and those who follow the directives of those who have set the course. True craftsmanship is to be rooted out of the workforce so that through scientific management it will be possible to hire persons of smaller caliber. Analysis of complex work is intended to codify knowledge and degrade work to rule following. Those who transform work into simplified schemes have limited understanding of the intricacies of completing a task and less interest in learning from the ones who have intimate knowledge gained through experience. The knowledge work in an organization is to be kept separate from tasks considered to be menial even though knowledge work often is an illusion. Much of corporate knowledge work is not mentally demanding and may even require the suppressing of intelligence. Students in school are prepared for this existence with one-size-fits-all education in which they are expected to sit still for 16 years. Within the educational environment the system rewards the earning of grades and credits rather than the gaining of knowledge. On the job workers are given little information about the purpose of their work and receive little feedback about its impact. Those who labor are suppressed by the threat of having their

jobs sent off-shore or otherwise eliminated. Workers are treated as interchangeable parts of a system that they are discouraged from understanding. Routine work is made more acceptable by consumerism and debt. Members of society are induced to consume and therefore the work must be done in order to pay the resulting bills. The media message is that self-fulfillment and freedom can be achieved through consumption. Technology (instrumental technology, as described by Feenberg, 1991) is to be accepted as socially and politically neutral.

Crawford contends that there is a basic morality in the use of tools. One becomes aware of one's own fallibility. He states, for example, that "the carpenter must face the accusation of the level." The mechanic answers to the rider of the motorcycle and assures the safety and performance of the machine. Stochastic art is developed within a community of like practitioners and users. A worker in the crafts knows when a job is done well because of the experience of successful and less satisfactory outcomes. The standards of performance become intrinsic to practice. Activity is directed toward real features of the world. We come to know a hammer by gripping it not by looking at it. To get an intellectual grasp on the world depends on doing things in it and going beyond icons and mental representations.

### **Commentary**

It is possible to dismiss Shop Class as the ranting of an angry man. I hope this is not done because there is merit in sitting back and reviewing choices that we have made as industrial and technology educators. After periods of resistance, some short and some longer, there has been wide acceptance of education in technology that is more computer-based with more simulations and imbedded problems to be

solved and less learning through actual engagement with tools, machines, and materials.

A middle school teacher, overseeing the use of a computerized technology instructional system, told me that he knew where students were going to encounter problems and what questions they would ask. This system, popular with the front office, had become much like the computer games students had at home or may have used in other classes during their school day. The emphasis was on having students work on a series of exercises, each with a captivating label and a work station designed by the vendor of the system. Students were expected to complete exercises in order to find answers to the problems built into the system and to turn in workbook pages to verify that they had completed the assignments. The opportunities to confront students with real things and problems with uncertain solutions had been forfeited. The essential role of the teacher was to track the progress of students through the exercises and oversee the logistics of ensuring that each student experienced each work station. It was necessary that no student got too far ahead of other class members and that everyone was kept busy. Significantly, the teacher was bored.

The dynamics of the work world, which most students will face during their adults lives, provides some hints about readying for it. Many jobs are less than intellectually stimulating. The work place may not provide the fulfillment that everyone seeks and it may even be enervating. However, that does not mean schools should prepare drones who passively accept whatever work role falls to them. There is more to being human than working to be a consumer and pay bills. Qualities of self-reliance, self-realization, personal identity, and creativity can be enhanced for application beyond school or job, often in unanticipated situations. Values and habits of conservation can be instilled to contrast with the

drumbeat of consumption. The field of choices can be broadened. Complete reliance on others to provide technical skill and knowledge is not a necessity. Individuals with mechanical skills may not identify and solve the problem with every malfunctioning appliance, machine, and device that they own however, they should be better able to analyze, discern when to proceed on their own, and know when to call for help. The continuing process of going through these steps will expand the reserve of knowledge needed to face increasingly more complex problems. Schools can and should provide the start for this to happen.

The most important point of Crawford's book may be the support for diversity in school instruction. There are too few alternatives for learning by students who do not do well in dealing with the abstractions of reading, mathematics, and mental imaging. School for some is mind numbing and disconnected from life, both present and future. Real experiences can reach some students who are disenchanted with the routine of school classrooms. Many students have learned fractions through measuring. The photography darkroom has been an introduction to chemistry for others. And, there is learning in the "shop" that goes beyond particular manual manipulations and the solving of complex problems. Each time a student identifies and solves a problem the base for solving more difficult problems is expanded. This learning may stand on its own or it may contribute to broader understandings. Will time spent in classes dedicated to the learning of technology become lost opportunities to learn things that are more important? For many students the answer is clearly "no." If students feel that the learning processes used in the school do not relate to them they are less likely to engage themselves fully and more likely to be satisfied with going through the motions needed to make it come to an end. The offering of an award or the threat of punishment does not make



lasting learning happen. Using real problems and real processes will reach some students who do not respond to the dominant methods of instruction used in schools. There is a distinct place for education that is based on real problems and the processes that must be employed to solve them, but the case must be made. Educators who enjoy the challenge of the search for real knowledge, as Crawford describes it, are well positioned to lead the charge. The challenge is large, but it does not need to be overwhelming.

My son, who gave this book to me, located it in the philosophy section of the bookstore.

### **References**

Feenberg, A. (1991). *A Critical Theory of Technology*. New York: Oxford University Press.