



JOHN P. MCCORMACK

## Art, Craft and Hand-Mind Coordination

On teaching woodworking, design  
and making in high school

*The hand speaks to the brain as surely as the brain speaks to the hand.*

— **Robertson Davies, What's Bred in the Bone<sup>1</sup>**

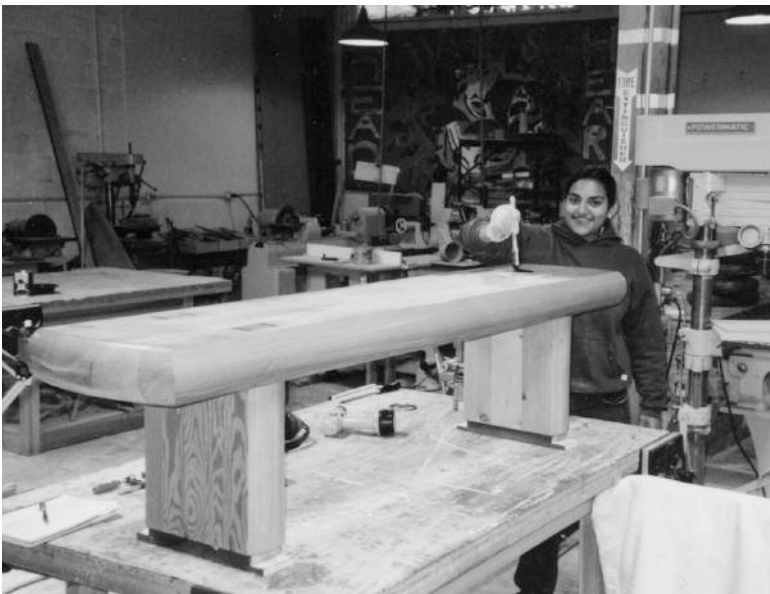
*The following is an exploration of the connections between art and craft, profession and vocation, and the declining role of design/making/industrial arts in high schools. I am drawing on my experiences (positive and negative) as both a student and teacher in the United States, and conclude with suggestions about how we need to rethink how we teach art and design (using woodworking as an example) as part of a general education that encourages students to explore both their independence and creativity.*

Lately I have been thinking a lot about teaching — both how I experienced it as a student and more recently as a teacher. I've been doing quite a bit of reading on the subject. And I've been reflecting on the year of woodworking and furniture design I taught at a high school in the southern San Francisco Bay Area.

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First, some personal background. My own high school was a Catholic all-boys school, and the social aspect of it was difficult. It was and still is a big athletics school; Lynn Swann, Barry Bonds and Tom Brady all went there. While it had a brutal, ignorant, homophobic social environment, the part I liked was the Sierra Club. My older brother was already a member and once I joined too the other members became my group of friends, two of whom I still regularly see, and several others with whom I am still in touch. Further, the Sierra Club inspired in me a love of the outdoors that continues to this day.

I come to teaching well trained in my field of woodworking and furniture design, and broadly educated. I obtained a Bachelor's in Biology, but by the time I finished this degree I realized that I did not want to pursue the subject further. So for a time I studied French and then found the Industrial Arts Dept. at San Francisco State University (SFSU). I took all the woodworking courses there, and came to know the woodworking professor, John Kassay, very well. He recommended that I apply for a furniture-making training program in Boston, at the North Bennet Street School, a fine craft school founded in 1885 that



Pia varnishes her bench

had evolved from a settlement house/training school for immigrants. I applied and was accepted.

At the same time, I also applied for and was accepted to the teaching credential program at SF State, in Industrial Arts, to qualify me to teach woodworking in high school.

North Bennet, where I chose to study, houses the best traditional furniture-making program in the U.S. It was a two-year (20 month) full time training, set up much like an apprenticeship, where the student had a series of assignments: drawing, drafting details, full scale drawings, a toolbox, machine maintenance training, then a series of three required pieces of furniture (a chair, table and case piece). The basic style was 18th century high style American, but the student chose what to build and designed it. There were very few lectures, just the environment of beginning students mixed with advanced and the unspoken expectation that students do excellent work. It was successful anarchy: self disciplined freedom, and the best school I have ever attended.

In its early years, North Bennet had a Sloyd teacher-training program.<sup>2</sup> “Sloyd” from the Swedish, means skill and is derived from the root shared by the English word “sleight”. The Sloyd method of instruction had students work independently on a series of projects in wood of increasing complexity, using the hand, mind and eye, instructing both intellectually and morally. The instruction was intended to be general and not necessarily vocational, but if vocational, the students were expected to have a broad mind-based skill set so as to advance in manufacturing or skilled trades.

At North Bennet, as a cabinet and furniture-making student in the late 1980s, I participated in a few Sloyd exercises. The intent, for me, was to acquire the conceptual, drawing, hand and machine-making skills to build nearly anything. (Later, design training at RISD, the Rhode Island School of Design, filled out my own skills.) The program at SF State was a successor to the Sloyd teacher training program at North Bennet: historically such education began with Sloyd, which became Manual Training, which became Industrial Arts, which now is called Industrial Technology.

After finishing at North Bennet, I rented space in an Art Furniture co-op workshop (Cambridgeport Cooperative Workshops, aka: CCW/Emily St.) and began to make furniture. I

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was exposed to furniture artists and developed an interest in more expressive, rather than traditional, furniture.

Throughout this time I also did a bit of teaching, first in SF while at State and later in Massachusetts at various places before moving west in '89 after a year and a half at CCW/Emily St. But I wanted to obtain the required qualifications to teach at a higher level, so I applied to and was accepted at the Furniture Design Program at the Rhode Island School of Design (RISD), graduating in '96.

It was an amazing time, full of bright talented people, students and faculty, making amazing stuff in a difficult critical environment. For my thesis I created a series of seating furniture pieces, one of which was a collaborative piece with a group of high school students at an inner-city school delicately referred to as being on the "wrong side of town," where girls pushed baby carriages on the way to their classes. The kids in my group had their piece displayed in a RISD museum show as high school students.

Since then, I have been making furniture and teaching, and while the students have mostly been adults and in college, I have taught two other stints in high school. The first was at a private high school with a Technical Arts program. The class sizes were ideal (14-16 kids), and the students were selected from a large pool and were interested in the subject matter. Unfortunately, while the school has a sincere interest in public service, as it has been pressured to become more exclusively college prep the already-attenuated technical arts program has become little more than a public relations ornament for the school.

### Credentialism vs. creativity?

*While I empathize with you in that it seems ironic that a person qualified to teach at college is not qualified to teach in, say, a high school, please note that there are many instances of professors in teacher preparation programs at universities, who prepare teachers to teach specific courses in high schools, but are themselves considered not qualified to teach in those schools!! And, that seems to be the case in Canada, too!*

— Rama Menon, Ph D.

*Chair, Division of Curriculum & Instruction  
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Students working

After leaving the private HS, I thought of teaching in the public school system, but ran into a layered bureaucracy and a credentialing problem institutionalized under “no child left behind.” In California, due to more than a generation of educational budget cuts and an apparent socio-cultural preference for college graduates, many industrial arts teacher credential programs have been eliminated. The one at SF State that I was accepted to in ’85 is gone. In the state of CA, in the last five years of data collected (2002-06) only 51 Industrial Arts teachers were trained.<sup>3</sup> “In California, three quarters of high school shop programs have disappeared since the early 1980s, according to the California Industrial Technology Education Association.”<sup>4</sup> As aging teachers retire and few (potential) replacements are adequately credentialed to fill the resulting vacancies, the shops close for lack of teachers, as well as the risk and expense of the programs themselves.

So I took another route and got a Vocational Credential, based on work experience and more limited coursework. It is a second-class credential, accepted in limited ways by various districts. The Designated Subjects/ Vocational Credential attempts to fill in for



Travis scribing legs to the floor

the lack of Single Subject Credentials issued, but this has in effect set up a two tiered system where ROP teachers are a small number of non-union subcontractors working in high schools, isolated without colleagues, without tenure and likely without benefit parity. Many more Vocational Credentials are issued in California, 650 in 2007.<sup>5</sup> Most of those so credentialed teach in the ROPs. This seems to be a way of training teachers at low cost in the chronically difficult California budget environment.

Under the hiring umbrella of the local Regional Occupational

Program (ROP)<sup>6</sup>, I was hired to teach — and did for a year — Woodworking and 3D Art (Furniture Design) at Mission San José High School in Fremont, a very good large public high school with dedicated, bright administration, good students and focused, driven, educated, largely immigrant parents. Many of the school's graduates go on to attend the University of California.

At Mission San José HS teaching woodworking was more complicated than it had been at my previous school. The class required an enrollment of 25 to proceed. The students were a mix: a few interested students amidst a bunch of adolescents institutionalized by a factory system of public education. The interested students and those whose attentions I caught hold of were a complete joy. To do this I often found I had to perform or improvise, sometimes seriously, sometimes spontaneously, much in the way that Frank McCourt, in *Teacher Man*, got his kids to read recipes as poetry in a creative writing class with one stu-

dent accompanying the readings with the flute. It ended up being like beat poetry set to jazz:

They really dug the bongo and harmonica combination for stuffed pork chops.<sup>7</sup>

I had an additional frustration to deal with: since I was teaching at the HS, but technically an employee of the ROP, I had to submit grades, attendance, budgets etc. to two organizations and computer systems. The bureaucratic layers were convoluted and painful. Everything was slow, confusing, often counter-intuitive, and one constantly had to deal with passive, institutionalized, resistant employees of the two institutions.

After the Columbine shootings, Leon Botstein wrote an article entitled “Let Teenagers Try Adulthood”.<sup>8</sup> He thought that high school was “an age segregated environment” with social structures irrelevant to adult life.<sup>9</sup> He compared high school teachers unfavorably with college teachers: “...at least physicists know their physics, mathematicians know and love their mathematics and music is taught by musicians, not by graduates of education schools, where the disciplines are subordinated to the study of classroom management.”<sup>10</sup> I take issue with this — many high school teachers know and love their subject but they are given next to no control or autonomy over their teaching situations: class size, length, curriculum etc. (“Individuality and dissent are discouraged”<sup>11</sup>). As a result many teachers — and students too — have become passive consumers of the process.

But here is where I agree with Botstein: many students *are* bored, and isolated from feeling passionate about the subjects they are learning. There are a number of reasons for this: for one, classes are too short for any meaningful learning to really take place and for excitement to be fostered and built. It would be more concentrated, useful and more realistic, if students did day-long or even half-day classes. Fifty-minute periods (particularly for the studio/shop classes) are a waste of time. I told friends that I wanted to teach cooking and the school had me serving fast food. For a part-timer, as I theoretically was, I worked 50 hour weeks at 40% pay, while developing the program and fixing the shop. It is tremendously inefficient to teach two hours a day, five days per week. It would be better for the students and the teach-



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ers both to have three- or four-hour classes two or three times per week. The 50 min. class length just reinforces the TV show attention span of our society. As a result, what takes precedence in high school, even a good one, is the social/ peer/ group stuff of adolescence.

Furthermore, “no child left behind” sets up a tyranny. Everything is measured, the teacher’s art is subjected to the dense impenetrable language of management and the students are jumping through assessment hoops like trained dogs. One might better call it “no teacher (or student?) left un-indoctrinated”.

I ended up quitting the high school job this past summer.

### **Design and making: professional and vocational**

Matt Crawford, author of *Shop Class as Soul Craft*, is a Ph.D. in Philosophy who had worked in academia and earlier as a cubicle worker generating abstracts for InfoTrac as piecework. He has a strong desire for and argues eloquently in favour of intellectual independence. He also has a business repairing vintage motorcycles. He finds the work more intellectually demanding and more honest than the cubicle work and much of academia.

Too often, he maintains, schools and corporations want people to become skilled at group work with a consequent loss of independence, responsibility and moral agency. He thinks that working in craft or a trade can be simultaneously intellectually demanding and liberating, where the standards of the work are subject to physical reality: does the motorcycle run, is the suspension balanced, is the owner happy with the work? He contrasts this with the standards of modern management where middle managers with little real power muddle through their lives while guiding a team, often to vague and morally ambiguous ends. He believes that people in society should have a sense of agency, should be “master of one’s own stuff”<sup>12</sup>, to understand and fix one’s own things, in contrast to our consumer society where we depend on image associations with consumer goods as lifestyle ornaments.

There is confusion over design and making in the schools, both secondary and post-secondary. Craft or making are thought to be non-intellectual and vocational, while design or art are thought to be intellectual and a profession. Since I have training in both making and design (thanks to my time at North Bennet; its remnant sloyd and present extensive fine craft training together with MFA



Furniture Design work at RISD) I have experienced the conflict between the two both in school and professionally. But I would suggest that the two are not in conflict and together make up a whole skill.

Personally I think that we should be teaching Design and Making as part of general education for future fitness; skills that could prepare students completing such a program for careers in carpentry, engineering, architecture, cabinet making, industrial design and occupations as varied as doctors, ministers, hot rodders and motorcycle mechanics, as both Crawford and Wilson

suggest. With this type of education, "...nail-drivers and engineers might be able to have a conversation."<sup>13</sup>

But to achieve this repositioning and redefinition of the role of trades in schools and society will require a major shift in teaching, perception and position. So, drawing on my own experiences in this area both as a student and a teacher, I offer some key suggestions as to what this general education should look like to both liberate and challenge students and teachers creatively and educationally.

- We would have small class sizes (14-18 students) and have three to four hour blocks of time, minimum.
- We would teach free hand drawing, drafting and some Computer Aided Design.
- We would teach 2 and 3D design together with model making.
- We would teach the tuning, sharpening and safe effective use of hand tools.



Beth and her router table

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- We would teach the history of technology as relates to timbering and woodworking.
- We would teach the environmental consequences of timbering, resource extraction and manufacturing, suggesting that resources be used responsibly and sustainably.
- We would teach the basic metallurgy of tools and machines.
- We would include instruction on biology, physics and chemistry as appropriate to the main subject and as practical subjects with everyday uses.
- We would teach the complete making process in wood as a progression of projects, initially ones assigned to build a variety and complexity of skills, later ones independent reflecting student interests and choices.
- There would be an introduction to Computer Aided Manufacturing (CAM). Its focus would be somewhat minimal, however, since the intent is for students to be connected to the work with the hand, eye and mind, not alienated button pushers wearing lab coats in a dust free room. Kids' lives are already too virtual. On a strained, finite planet with increasing population, there is an ever-growing argument for skilled handwork. The technological solutions to environmental problems "may be no more complicated than a bicycle".<sup>14</sup>
- The classes "can be like the beginning engineering class at Stanford, which is basically a sophisticated shop class giving students creative access to materials and design appropriate to those materials".<sup>15</sup>
- We would encourage involvement in group-work of students as friends and colleagues. Frank Wilson met Jack Shafer, a former hot rodder, who had been thrown out of art class and whose "artistic inclinations were so strong that they even survived the — what shall we call it? — the *pinched* notion of art dispensed in a high school art class by a teacher who dispensed her hostility on him with real energy."<sup>16</sup> Jack found a group of friends interested in making cars go fast. They "invented their own *alma mater*".<sup>17</sup> This kind of group work could be extended in a complete design/making program to include stu-

dents doing internships in the outside community with professional designer/craftspeople.

The goal of this is to develop self-directed students working creatively, whether individually or in groups. The classes would be long and often open-ended, with students given the opportunity to come in after hours and the instructor knowledgeable, present and cheerfully available. The intent is to have students thinking and working at a real, adult level. And the results of this are frequently startling and provocative: when I did the collaborative public design bench project at Central High School in Providence RI, as part of my RISD MFA Thesis project, one of the students, José Blanco, said during a gallery talk: “The bench looks like us”.



The bench looks like us

In *The Hand*, Frank Wilson argues that the mind-hand connection and interaction are integral to human survival and dominance. Education should prepare for future fitness, teaching people skill sets and potential creativity that may not seem immediately useful. He maintains “We will never beat evolution at the game that created us.”<sup>18</sup> “The clear message from biology

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to educators is this: the most effective techniques for cultivating intelligence aim at uniting (not divorcing) mind and body.”<sup>19</sup>

What I am talking about, of course, is *general* education. You will note that it is also *individualized* education, giving students support, kindness, attention and the time to find out and pursue what interests them. David Hall writes, “So we worked through their hands just to give them another idea of what they could do, or what they might be.”<sup>20</sup> Indeed.

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**John McCormack** is a furniture designer, maker and teacher. He lives and works in San Francisco, California, and believes that teaching is social design, where you give your knowledge to others rather than embodying it in an object. He finds teaching to be more social — and more socially useful— than solely designing and making things. He was recently accepted to Master Membership in the Baulines Craft Guild. John is also a solo long-distance kayaker, having paddled the complete Canadian portion of the Inside Passage. He'd like a paddling partner and perhaps a boat with a lid.

Photos: author's own.

## ENDNOTES

<sup>1</sup> Robertson Davies, *What's Bred in the Bone*, New York, Penguin Books, 1986.

<sup>2</sup> While North Bennet does not do Sloyd teacher training any longer, they still have some remnant Sloyd exercises in the full time Cabinet and Furniture Making Program training early on.

<sup>3</sup> Boyum, Keith O., “Table 1” *Clarification for CSU Plans for Expanding Career and Technical Studies* (Follow Up to AA-2008-22, Long Beach, California, Office of the Chancellor, The California State University, September 12, 2008.  
[http://www.calstate.ca.gov/acadaff/codedmemos/BVE\\_CTE.pdf](http://www.calstate.ca.gov/acadaff/codedmemos/BVE_CTE.pdf)

<sup>4</sup> Crawford, Matthew, *Shop Class as Soulcraft: An Inquiry into the Value of Work*, New York, Penguin, 2009, p11.

<sup>5</sup> Boyum, Keith O., *Clarification for CSU Plans for Expanding Career and Technical Studies* (Follow Up to AA-2008-22, Long Beach, California, Office

of the Chancellor, California State University, September 12, 2008.  
[http://www.calstate.ca.gov/acadaff/codedmemos/BVE\\_CTE.pdf](http://www.calstate.ca.gov/acadaff/codedmemos/BVE_CTE.pdf) Page 2.

<sup>6</sup> The ROP is semi-privatized vocational training system, operating parallel to the school district, which accepts the credential I have. What is funny is that with an MFA in Furniture Design, I can teach at the college/university level. Under "No child left behind" I need a credential to teach at the secondary level.

<sup>7</sup> McCourt, Frank. *Teacher Man*, New York, Scribner, 2005, p. 213.

<sup>8</sup> Botstein, Leon. Let Teenagers Try Adulthood, *The New York Times*, May 17, 1999. (<http://www.nytimes.com/1999/05/17/opinion/let-teen-agers-try-adulthood.html>)

<sup>9</sup> *ibid*

<sup>10</sup> *ibid*

<sup>11</sup> *ibid*

<sup>12</sup> Crawford, Matthew, *Shop Class as Soulcraft: An Inquiry into the Value of Work*, New York, Penguin, 2009, p. 54.

<sup>13</sup> Treanor, Robert J., comment made in: *Woodworking Program Advisory Committee Meeting Minutes*, Fremont, California, Mission San José High School, March 31, 2009.

<sup>14</sup> Underhill, Roy, Personal Conversation, Pleasant Hill, California, June 27, 2009. Roy is host of the PBS show *The Woodwright's Shop*, an author and is the former Master Housewright at Colonial Williamsburg.

<sup>15</sup> Sanborn, Robert, comment made in: *Woodworking Program Advisory Committee Meeting Minutes*, Fremont, California, Mission San José High School, March 31, 2009.

<sup>16</sup> Wilson, Frank, *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, New York, Pantheon, 1998, p. 179.

<sup>17</sup> \_\_\_\_\_, *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, New York, Pantheon, 1998, p. 179.

<sup>18</sup> \_\_\_\_\_, *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, New York, Pantheon, 1998, p. 290.

<sup>19</sup> \_\_\_\_\_, *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, New York, Pantheon, 1998, p. 289.

<sup>20</sup> David Hall in: Wilson, Frank, *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, New York, Pantheon, 1998, p. 118. Also, a friend of mine, Michael Raskin, long connected to an amazing furniture maker, Paula Garbarino, a friend and fellow student of mine at North Bennet, said that making, like painting, is a wonderful thing to do, involving the mind and hand in a joyous, difficult, complete way. Design, making, art....for its own sake.

**All human activities,  
professions, programs,  
and institutions must  
henceforth be judged primarily  
by the extent to which they  
inhibit, ignore, or foster  
a mutually enhancing  
human/Earth relationship.**

**- Thomas Berry**

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