Reactions

Diversity, not Uniformity United, not Standardized: A Reaction to Wright's "Challenge to all Technology Educators"

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"Conflicting conceptions of curriculum presuppose diversity in the underlying conceptions of education" (Sockett, 1976, p. 17).

In Volume 3, #2 of the *Journal of Technology Education*, Thomas Wright (1992a) began his "Challenge to all Technology Educators" by stating, with reference to diverse forms of industrial arts and allusions to a recurrence of similar diversities in technology education, that "educators seem to have a strong desire to relive historical mistakes." (p. 67). As both a lesson from history and an alternative to curricular diversity, Wright proclaimed that now, "*the* challenge to *all* technology educators is to *apply the same logic* as science uses to determine the curriculum [italics mine]" (1992a, p. 68). His discomfort with diversity marked the remainder of his editorial (see also Wright, 1992b).

Before presenting arguments against Wright's contentions, three criticisms will be directed toward his curriculum model for "*all* technology educators." One, Wright's model is devoid of references to contemporary scholarship in the field of curriculum studies, and represents a technical, disciplinary-based, and trivialized conception of curriculum processes. Problems like those evident in Wright's conception of curriculum have been critiqued in technology education (Herschbach, 1989; Zuga, 1989, 1991) but remain prevalent (Petrina, 1992b). Two, Wright's depiction of "science" as an exemplar of curriculum appears to be based on speculation related to the evolution and legislation of disciplinary subjects. My concern is not with the use of the sciences as curriculum exemplars, although that is questionable, it is whether Wright's reduction of curriculum processes in "science" to two linear steps is valid. Three, "the technological method" on which Wright's model leans, should be viewed

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as it is: a heuristic whose efficacy is limited to systems thinking. Methodological claims to "the technological method" are bereft of any epistemological grounding within the history, philosophy, or sociology of technology (Petrina, 1992a,1992b). Save for the lack of space to expand on those criticisms, Wright's challenge smacks of discipline envy and status quo.

My arguments against Wright's contentions will focus on two points. First, Wright's history lesson may be flawed in more ways than one. And second, implications of Wright's disciplinary challenge for "all technology educators" deserve serious attention.

My first disagreement with Wright is with his contention, as somehow justified through his example from the past, that "different positions [concerning ccurriculum] are dangerous" (p. 67). To paraphrase Wright, the lesson here is that in order to avoid reliving problems which were associated with curricular diversity in our past, we should all "apply the same logic... to determine the curriculum." The following, different conclusion and lesson can be derived from the historical record: curricular diversity has been an historical fact of our profession, and problems with which it is associated can be overcome by recognizing a value in diversity.

Without digging too deeply through the historical record, most within our profession are keenly aware of the degree to which personality conflicts and claims of "the solution" tended to devalue inherent diversity. Nothing short of a miracle would have brought that community, to which Wright referred, to agree that "all" would "apply the same logic." Like our chronological predecessors might have been, we may be a contentious, disagreeable bunch of consummate perfectionists. In which case, there's probably no real alternative to an embrace of our own inherent diversity.

Ignoring a remote possibility of innate contentiousness, and rather than an inability of "all" to "apply the same logic" in the past, a devaluing of diversity, for whatever reasons, may have been a more active mechanism underlying what appeared to Wright as confusing disunity. And, as opposed to confusing disunity, they, like us, may have been experiencing what Schubert (1986) called "productive uncertainty" (p. 8).

Also, more than an inability to effect uniformity in curriculum, our inherited diversities *and disparities* may be grounded in problems of sociological and philosophical drift (Petrina, 1992b). Hence, while Israel (1981, p.5) argued "that in the past 15 to 20 years, industrial arts... has become so diversified in its thinking that the profession has lost its sense of mission," I'm arguing for a dialectical interpretation. Diversities and disparities that Israel and Wright had noticed were/are also symptomatic of a profession's eventual loss of a sociological mission, and failure to develop an inherited philosophical base. It may be productive to look into the past for constructs on which to unite, rather than as Wright suggested, toward disciplines. Otherwise, philosophical (i.e., *not* "what should be taught?" but "what epistemological meaning can we assign to experience... to action?") and historical inquiry in technology education might as well remain, as the few who publish in these areas would probably

agree, moribund. From this view, whatever "solid philosophical ground" Wright (1992a, p. 70) proposed for the profession of technology education is illusory. Perhaps it is time to revive historical and philosophical studies; and consequently, redo our histories of the profession and unite diversities through a recovered philosophy of experience and progressive sociological mission.

My second argument with Wright is related to his prescription for overcoming a persistence of historically shaped diversities. Wright's "challenge to all technology educators... to apply the same logic as science uses to determine the curriculum" reinforces a "one best," disciplinary-based prescription for technology education (Petrina, 1992b). It may well be that credulous and uncritical views of curriculum underlie discipline envy in technology education. Still, some technology educators seem determined to acquire the stability, resources and status afforded through the disciplines (DeVore, 1992; Dugger, 1988; Savage & Sterry, 1990; Technology Education Advisory Council (TEAC), 1989; Wright, 1992a). Advocacies for a discipline of technology subscribe to "disciplinary doctrine" which holds that "the chief if not the sole criterion for including any subject in the school curriculum is whether that subject is recognized as an academic discipline" (Tanner & Tanner, 1989, p. 341). A corollary to disciplinary doctrine is: "curriculum planning demands attention to the logic of subject matter in order to identify what is educationally worthwhile" (McAleese & Unwin, 1978, p. 220).

A case can be made, with disciplinary doctrine and its corollary, that if technology was a discipline, *then* technology education would warrant an established place in the educational system. Inasmuch as technology educators may be in want of disciplinary status, "the trappings — a set body of knowledge, texts, and methodology" with which it is accompanied may be antithetical to larger goals (Disinger, quoted in Brough, 1992, p. 29). As Brough wrote of a similar dilemma for environmental studies, without "the trappings [of a discipline] this upstart field may continue to be dismissed... with these trappings, it risks becoming part of the discipline-bound tradition it is seeking to break" (p. 29).

Nonetheless, with little more than "yes it is — no it is not" style debate concerning a technology discipline, disciplinary frameworks for organizing curriculum have become idiomatic in technology education discourse and practice. Here is an interesting case where, over a short period, legitimating rhetoric became a type of reality for a group of professionals. Entertaining enough, disciplinary proposals validate the already codified and "one best" content systems of communication, construction, manufacturing, transportation, and reluctantly for Wright, bio-related and production.

Whether they are organized on disciplinary systems (DeVore, 1992; Hales & Snyder, 1982; Wright, 1992a) or disciplinary processes within a systems framework (Savage & Sterry, 1990a, 1990b), curriculum proposals which define a discipline of technology are driven by disciplinary doctrine. In other words, teach technology education because it is grounded in the technology discipline. Through Brough's reasoning, in exchange for resources and status

of the disciplines, some technology educators are willing to forgo historical intentions of breaking traditions of disciplinary isolation and irrelevance.

Wright's challenge and his exclamation that "technology education is desperately trying to become a recognized, accepted discipline" are provocative (1992b, p. 3). Equally provocative is DeVore's (1992) conviction that "the search [i.e., research agenda for technology educators] *must be* for the structure of the discipline... *the rest is commentary* [italics mine]" (p. 31). DeVore's attempt to render voiceless alternative modes and avenues of inquiry, and epistemically close discourse on professional direction invites skepticism and criticism of the entire disciplinary agenda. Besides, DeVore's remarks and Wright's "challenge... to apply the same logic" are manifestations of a timeworn style in technology education which offered "one best" solutions at the expense of values such as diversity and discourse.

Those values are compromised when professionals within coalitions, albeit loose, begin to argue that their idea "must be" "the challenge" for "all." Given inherent diversity, historical and sociological traditions, disciplinary proponents have prescribed a "one best," ahistorical, and status quo idea. Turning Wright's concern toward his own disciplinary convictions, educators "must be" held accountable for their curricular actions and develop "defensible curriculum base[s]" (1992a, p. 67), which are sensitive to historical traditions and shared assumptions. The concept of diversity should not imply that technology education can be relative or ahistorical.

Given implications of a "discipline bound" profession, disciplinary proponents are obligated to present a persuasive argument, somehow free of disciplinary doctrine, for promotion of uniformity through their "one best" idea of curriculum and research. A clear explication of the reasoning which underlies suggestions that hopes of recovering a philosophical base of experience and progressive sociological mission should be relinquished. Another obligation is the presentation of a comprehensive, cogent reading of the technology discipline which remains partially defined (Petrina, 1992a, 1992b).

As Wright (1992a, 1992b) was correct in pointing out, there are a number of diverse, and often disparate, forms of technology education. But, there is little chance that we will all agree to, nor a legitimate reason why we should, "apply the same logic... to determine the curriculum" now or in the future. Perhaps only an embrace of diversity, and a recovery of a philosophical base and sociological mission can unite technology educators.

Diversity of existing programs associated with technology education can be articulated through a railway metaphor. With old engines worn but still rolling on the mainline, traffic has increased through the introduction of new engines designed by railway shareholders (see Figure 1).

Figure 1. Programmatic diversity of “technology” education within a context of “Technology” education.

Railway metaphor aside, are “Maryland Plan,” “conceptual framework,” “design & technology,” “modular framework,” “pre-? industrial arts” and “tech prep” differences in kind as opposed to degree of technology education? How defensible is disciplinary doctrine... it works... it's new? How inclusive or exclusive should/can technology education be defined? How should we deal with curricular diversity in pre-service teacher and graduate education? Has technology education come to be what industrial education is — a rubric for diverse forms of education? Witness the obstacles of interpretation that educators within the state of Maryland have had to traverse with their high school technology education requirement.

A subtle point to Figure 1 is: Regardless of technology education, students are, and have been receiving a Technology education. What is the nature of Technology education? How influential is ubiquitous Technology education? Is it time to look at Technology education in a broad light, across a spectrum of diverse programs and ubiquities?

Problems with diversity in technology education run deeper than what had been made evident through Wright's challenge. Generally blind to diversity in school settings, conceptions of teachers “in the trenches” have dichotomized this group into “laggards” versus “exemplary programmers.”

And, professional direction has too often been shaped through unrepresentative, closed-door, “white paper” work of “leaders.” Had diversity been considered, “the conceptual framework for technology education... [to be] disseminate[d]... to the profession” (Savage & Sterry, 1990a, p. 6) would have been representative and shaped through open discourse. Instead of an emergence of what is arguably a conservative “mission for technology education” (Savage & Sterry, 1990b, p. 7), a progressive mission may have been recovered. Instead of a static article of dissemination from “the group of 25” leaders “to the profession” (Savage & Sterry, 1990a, p. 6), “the conceptual framework” would have been an issue of deliberation for, and come *from*, the profession. With any glory that closed-door leadership offers necessarily comes the possibilities of having chosen the wrong style to lead or having led in the wrong direction. And, given Volk's (in press) analysis and other vital signs, there seems a heavy burden for a small group of leaders to want to bear.

Hopefully, the “Mill” style of defining professional direction has run its course. The time may be right for a new generation of planning in technology education; indeed, a democratic style that embraces values of diversity and discourse. Perhaps a *representative* conceptual framework would reflect a nexus of evolving ideas that recognizes diverse forms of scholarship, and voices of groups who share in the envisioning of futures for this profession: public school teachers and students; district and state supervisors; undergraduate and graduate students, and; assistant, associate, full, and emeritus professors.

For the sake of vitality in technology education, curriculum organization and professional direction ought to be viewed as problematic and contested terrain; and, kept epistemically open to discourse and debate (Petrina, 1992b). Voices ought to be heard and faces of diversity recognized and embraced. The

fact that possibilities are open for curricular forms which fly in the face of disciplinary doctrine may be what makes this profession exciting.

Discourse on these concerns can be channeled through this journal, or through a public space at conferences dedicated to debate and expressions of "productive uncertainty." Surely, gratitude must be extended toward the editors of JTE for inviting critical debate; still, Sanders retrospectively wrote in 1991 (p. 3), "the JTE lacks some of the 'dialogue' I thought it might foster."

Rather than all applying "the same logic as science," a challenge for technology educators may be to work on uniting diversities through discourse and reviving an historically grounded philosophy and sociological mission. In the meantime, we can *all* concentrate on examining our own curricular choices and securing a better education for our students than we would expect for ourselves. We can also concentrate on contributing more than our share to keeping the concept of Technology education a vital concern for this society.

References

Brough, H. (1992, Jan-Feb). Environmental studies: Is it academic? *WorldWatch*, *5*(1), 26-33.

DeVore, P. W. (1992). Introduction to transportation technology. In J. R. Wright & S. Komacek (Eds.), *Transportation in technology education*, 41st Yearbook, CTTE (pp. 1-32). Columbus, OH: Glencoe.

Dugger, W. (1988). Technology- the discipline. *The Technology Teacher*, *48*(1), 3-6.

Hales, J. A. & Snyder, J. F. (1982). Jackson's Mill industrial arts curriculum theory: A base for curriculum derivation. *Man/Society/Technology*, *41*(5), 6-10.

Herschbach, D. (1989). Conceptualizing curriculum change. *Journal of Epsilon Pi Tau*, *15*(1), 19-27.

Israel, E. (1981). Stagnation in industrial arts, part I. *Man/Society/ Technology*, *40*(1), 3-5.

McAleese, R. & Unwin, D. (1978). *The encyclopedia of educational media, communications and technology*. Westport, CT: Greenwood Press.

Petrina, S. (1992a). Questioning the language that we use. *Journal of Technology Education*, *4*(1), 54-61.

Petrina, S. (1992b). *Curriculum organization in technology education: A critique of eight trends*. Unpublished manuscript.

Sanders, M. (1991). From the editor. *Journal of Technology Education*, *3*(1), 3.

Savage, E. & Sterry, L. (1990a). A conceptual framework for technology education, part 1. *The Technology Teacher*, *50*(1), 6-11.

Savage, E. & Sterry, L. (1990b). A conceptual framework for technology education, part 2. *The Technology Teacher*, *50*(2), 7-11.

Schubert, W. H. (1986). *Curriculum: Perspective, paradigm, and possibility*. New York: Macmillan.

Sockett, H. (1976). Approaches to curriculum planning, I. In H. Sockett & A. Harris (Eds.), *Rationality and Artistry* (pp. 8-31). London: The Trinity Press.

Tanner, D. & Tanner, L. (1989). *History of the school curriculum*. New York: MacMillan.

Technology Education Advisory Council. (1989). The nature of technology. In W. Waetjen (Ed.), *Technology: A national imperative* (pp. 8-10). Reston, VA: International Technology Education Association.

Volk, K. S. (in press). Enrollment trends in industrial arts/technology teacher education. *Journal of Technology Education*.

Wright, T. (1992a). Building a defensible curriculum base. *Journal of Technology Education, 3*(2), 67-72.

Wright, T. (1992b). Mixing our metaphors. *The Technology Teacher, 51*(8), 3-4.

Zuga, K. F. (1989). Relating technology education goals to curriculum planning. *Journal of Technology Education, 1*(1), 34-58.

Zuga, K. F. (1991). Technology teacher education curriculum courses. *Journal of Technology Education, 3*(2), 60-72.