Beyond Tyler and Taba: Reconceptualizing the Curriculum Process

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Introduction

These are dynamic times in the realm of curriculum. As we near the next century, we are asking ourselves if we finally should rid ourselves of our technological rationality and assume a new posture. A rising cacophony of voices is demanding that we detach ourselves from our technological-modern past and form a new paradigm—a post-modern perspective. We are being urged to purge ourselves of our adherence to the Tyler rationale, to get beyond Tyler and Taba.

Many critics of Tyler and scientist-modernism appear to be urging us to wipe clear our slate of the past. However, as Toulmin (1990) states, the idea of starting again with a clean slate is a myth. And it is folly to assume that we must destroy all that was before in order to nurture a new start. To accept a new paradigm, to move beyond Tyler and Taba, does not require destroying our very past and discrediting these two curriculum thinkers. There is no new starting line where we can assemble and then advance into our futures with certainty. Indeed, such thinking is part of the very modernity that many of us wish to leave. All that we can do is to begin where we discover ourselves, and at the time in which we find ourselves. These are times of excitement and uncer-

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tainty, not times in which we can advance a "self-sustaining, tradition-free intellectual system" (Toulmin, 1990, p. 1979).

All realms of scholarship are immersed in these times in forming not just a new paradigm, but paradigms. To assume that there is only one paradigm is to assume that we can attain a new certainty, which really is anathema to being postmodern in perspective. Postmodernism is essentially a *metaparadigm* encompassing all realms of thinking and action (Kung cited in Doll, 1993). While postmodernism has spawned new avenues of investigation and ways of conceptualizing physics, chemistry, biology, and mathematics, as well as the arts, it has not—and indeed cannot by its very posture—furnish us with a consensus on what it really is or whether it will be the dominant mode of our thinking in the 21st century.

As Doll (1993) asserts, the implications of a postmodern perspective for the reality of education and curriculum in particular are staggering, while remaining for many frustratingly fuzzy. We currently do not know how this urging of a shift to postmodernism will play out within the curriculum realm. We should take pleasure, however, in the fact that we will be involved in the shaping of our own immediate and distant futures. We can recognize that we are in an evolving system, moving toward the edge of chaos, and that this place is the zone where new ideas are generated, new paradigms are formulated, and new questions are posed (Lewin, 1992).

To recognize an edge we must have some vision of the total area from whence we have come. We cannot fully grasp a paradigm shift to postmodernism if we fail to understand our history of modernism. We cannot accept modernism as a thing of the past unless we have a sense of our past.

The Legacy

Modernism or modernity is not synonymous with contemporaneousness (Selznick, 1992). If that were the case, all societies would be modern in their time period. Rather, modernism refers to those attributes of technology that advanced societies have developed since the 18th century. Some would place the beginning date with Newton. The hallmark of modernism is a society in which emphasis is placed on the rational, the impersonal or objective, and the fragmentation of thought and action. It is a society of prizing and accepting certainty, a society privileging a mechanical view of the world. It is a society that employs the rational, the scientific, in addressing the problems of human life and society (Toulmin, 1990).

Bobbitt and Modernism

Modernism achieved its pinnacle in this century. In the early decades, increasing numbers of educators eagerly accepted the tenets of modernism and the approach called *scientism*. Many believed that by employing the rational, the precise, and the mechanistic, they would be able to address the problems of human life and society. Education, looked at as a mechanical system, could be quantified and managed. In being modern, one could bring efficiency and effectiveness to the schools and their curricula.

Bobbitt is credited with bringing the scientism or modernism message to education and to the field of curriculum in particular. His book, *The Curriculum*, published in 1918, is often considered the first book devoted specifically to the curriculum and to consider curriculum as a science. Bobbitt believed that it was possible to be precise in determining just what the curriculum should contain. It was the responsibility of the curriculum decision maker to outline what knowledge was important for each subject, and to identify the objectives that would be appropriate for those subjects. Once done, one then had to develop those activities that would enable the learner to master the content.

While in looking back we may think Bobbitt was "wrong-headed," we must recognize that he was essentially engaged in embracing an existing paradigm that had not been employed within educational thinking. Bobbitt's view about the use of scientism in curriculum activity greatly affected the field of curriculum. He was most influential in developing principles of curriculum-making that involved determining aims, objectives, the needs of students, and learning experiences. He noted that the objectives of the curriculum could be derived from the study of needs, something still being advocated today. Perhaps his greatest contribution is his argument that the process of curriculum-making is not specific to any particular content, but rather cuts across subject matter. As Cornbleth (1990) points out, although not relating her comments to Bobbitt, the process of curriculum development was decontextualized both conceptually and operationally. It set the stage for conceptualizing curriculum development as precise and predictable, resulting in a tangible product. The entire process and its resultant product were seen as separate from curriculum policymaking, design, practice, and even evaluation (Cornbleth, 1990).

Bobbitt, and later Tyler, did their work well—so well that the approach to curriculum development and thinking about curriculum is still very much in evidence, even with all of the dialogue about paradigm shifts to postmodern ways of thinking about the field. Indeed, the foundation

that Bobbitt laid down is still the mainstream view regarding curriculum development in today's schools. This view is most difficult to budge, for the very nature of what we are being urged to employ in the place of modernism commands no consensus. There is no precise new system by which we can finally overturn the work of Bobbitt and later Tyler and Taba. This is not surprising since we do not want to deal with "mists"; we want to know specifics. We measure the worth of suggestions by their specificity rather than their heuristic value of making us challenge the details and assumptions of our thinking, of our ways.

Ralph Tyler, Prime Technocrat

Tyler was greatly influenced by Bobbitt and others similarly oriented. His book *Basic Principles of Curriculum and Instruction*, published in 1949, epitomized modernism. It has come to have an enormous influence on the field of curriculum. Despite all the criticism of Tyler, his thinking is still dominant in schools across the nation.

If we are to move beyond Tyler, we must first recognize that we could not be at this juncture, debating the merits of a new paradigm for curriculum development, if Tyler had not written his 128-page book and presented four basic questions to the field: (a) What educational purposes should the school seek to attain? (b) What educational experiences can be provided that are likely to attain these purposes? (c) How can these educational experiences be effectively organized? (d) How can we determine whether these purposes are being attained?

These four questions have become known as the Tyler rationale for creating curriculum. These questions and the method implicit in dealing with them have such appeal because they appear to be so reasonable. Even Doll (1993) acknowledges that they *are* reasonable, but only if we accept a modernist, linear, cause-effect framework. We would argue that the continuing popularity of Tyler at the level of schools and school districts, and perhaps even on a few university campuses (despite all the rhetoric at national curriculum conferences), is due to the very reasonableness and workability of the rationale, regardless of one's context. Educators in classrooms and on local curriculum committees feel a sense of comfort knowing that curriculum is essentially a plan composed of identifiable components (objectives, subject matter, methods, and materials). Likewise, they feel a sense of calm knowing that the procedures for creating such a curriculum are knowable and predetermined in a manner that will assure an efficient and orderly creating and control of the curriculum. The procedures for creating curriculum, taking this viewpoint, are essentially value neutral (Cornbleth, 1990). Certainly, we ex-

hibit values as to what content we wish to include, and perhaps even the experiences we wish students to have, but many assert that we at least can relax a bit in knowing that the procedures by which we bring curricula into existence are essentially beyond argument. We know what to do!

To even suggest that educators reflect on the assumptions behind their actions is to be somewhat confrontational. Even many not disturbed by such confrontation feel that we are asking them to forsake a professionalism that has been won only after much effort. The entire push for being scientific was an attempt to bring not only precision to curricular action, but a professionalism to the field itself. We borrowed management by objectives from the field of business. We looked to the various scientific management movements throughout this century to furnish us with ideas as to how to go about our business.

Tyler gave us a techno-speak that enabled us to be part of the modernism of this century. In a very real sense, the Tyler Rationale gave us slogans and shared ideals and views of curriculum and its creation. We could share common visions; we could communicate with a shared language. As Cornbleth (1990) notes, this technological orientation enabled us to have a sense of community gaining comfort in knowing that we were following the right path. We were exhibiting an aura of curriculum expertise that was exportable to any and all who wished to be involved in creating programs. We could identify the problems that needed to be addressed, we could determine the objectives, we could select the necessary experiences, and we could assure people that we had, indeed, obtained what we had set out to do. And administrators could take pride that their staffs had indeed been efficient in carrying out their curricular responsibilities. In those instances where this was not the case, administrators knew that there were outside experts who could be brought in to do the job of determining goals and objectives, and outlining the means to attain them. It could all be mapped out in linear fashion. In a sense, all we had to do was connect the dots and the outline of the program would become evident. Then our task was just to color within the lines and the curriculum would be covered.

Tyler's message, perhaps, would not now be so dominant if he had been a voice crying in the wilderness. But Tyler had company, and he still has. Hilda Taba was a colleague of Tyler's who gave an added boost to his rationale for the curriculum world.

Hilda Taba

Taba's thinking regarding curriculum and curriculum development also reflected the modernism-scientistic tradition. In her seminal book

on curriculum development, *Curriculum Development: Theory and Practice* (1962), she argued that there was a definite order to curriculum development, and that pursuing such order would result in a more thoughtful and dynamically conceived curriculum. Like Tyler, she noted that all curricula are composed of certain elements. She accepted the assumption of componentiality. Not only could we define things in terms of their components, we could actually take these components apart and put them back together again. These units were essential to all the curricula, and in identifying them we could manage them in ways that would make them predictable (Berger, Berger, & Kellner, cited in Cornbleth, 1990).

In the procedure that Taba advanced for creating curricula, Tyler's modernism influence is evident. The model has definite steps, each to be engaged in one at a time such that a curriculum plan for teaching would result, addressing the objectives created at the outset of the process. Taba did differ from Tyler and others of the scientific bent in that she believed that teachers should have an active role in the procedure for creating curricula.

Her seven-step model of curriculum development gives even more detail to the process than do Tyler's questions.

1. Diagnosis of needs. The teacher or curriculum designer begins the process by identifying the needs of students for whom the curriculum is to be planned.

2. Formulation of objectives. Here the teacher or curriculum designer selects those specific objectives that require attention in light of the needs identified. These objectives, perceived actually as ends, allow a precision to the process and enable curriculum makers to view learning as an observable outcome that could be measured.

3. Selection of content. From the objectives selected, one can determine the subject matter of the curriculum.

4. Organization of content. While Tyler dealt rather broadly with the organization of educational experiences, Taba was more specific, actually separating the organization of content from the selection and organization of experiences. Again, this step made it clear to teachers or curriculum designers the components of the content and how they were to be organized to attain expected results.

5. Selection of learning experiences. Taba was explicit in noting that selecting learning experiences was a different component in the curriculum development process. Experiences could only be selected after the content or subject matter had been determined.

6. Organization of learning experiences. Once the experiences were selected, they needed to be placed into a sequence to optimize students'

learning. Again, the assumption is that this sequence could be determined prior to the students actually becoming engaged in their learning.

7. Evaluation and means of evaluation. Like Tyler, Taba's final step engaged the curriculum planner in determining just what objectives had been accomplished. Actually, in the approach, the means of evaluation are determined prior to the actual implementation of the curriculum.

There have been variations of Tyler's and Taba's approaches to curriculum development, but most of the models extant today draw heavily on this technocratic mentality. Most are presented as if there is total agreement as to approach; most appear to be decontextualized from their social context; and most give the illusion that there is a timeless precision to the process.

In arguing that we should go beyond Tyler and Taba, we are asking educators to reflect on the assumption of scientism-modernism, and perhaps to challenge basic tenets that have guided educators' actions for most of this century. It is not to suggest that we generate a specific plan to replace Tyler and Taba. It is not to purport that we know where we have moved or even to suggest toward what we should be moving. At this juncture, perhaps we only should realize that some of us are in the process of moving. As to our destination, we cannot say.

Challenges, Transitions, Transformations

Arguing getting beyond Tyler and Taba is not so much to criticize their work and their times as it is to recognize that we are in different times—times that challenge us to think in novel ways about our realities and how to generate curricula within them. Tyler and Taba reflected a view of modernism: that life could be viewed as mechanical, that there existed a stable-state universe, that the process of curriculum development could be compartmentalized and decontextualized, that goals could be separated from the experiences designed to address those goals.

Currently, we are realizing with increasing sophistication that life is organic, not mechanical; the universe is dynamic, not stable; the process of curriculum development is not passive acceptance of steps, but evolves from action within the system in particular contexts; and that goals emerge oftentimes from the very experiences in which people engage. Curriculum gains life as it is enacted (Cornbleth, 1990). We are in a time that is encouraging the projection of new meanings, and suggesting ways to organize these myriad interpretations. The times, being identified as postmodern, are encouraging the achievement and employment of multiple awarenesses (Giroux, 1991).

Post-modernism is not just a one-world movement. It involves the thinking and actions of myriad scholars from diverse disciplines. The very crossing of these disciplinary lines has generated new ideas and practices—has triggered hybrid subject matter and invited a most heterogeneous audience to dialogue. The focus of the dialogue is to contest knowledge and to critique a total view, the primacy of reason, and the universality of general knowledge (Jencks, 1992).

The prime challenge is to query meta-narratives and accepted "stories" of the way things are in the world, and to reject the notion that we can bracket our reality. In many ways, the post-modernist is behaving in ways similar to those persons delving into the science of complexity. These individuals are convinced that through creative questioning and inventing of paradigms, they can come to understand more fully the spontaneous self-organizing dynamics of the world in ways never before imagined (Waldrop, 1992).

In rejecting grand narratives about ways to create curriculum and to generate paradigms, curriculists can address—even celebrate—the complexity of curricular deliberations and educational programs. Accepting post-modern views as well as those of complexity, curriculists can realize that what are called for at this juncture in time are plural codings of reality and actions, and multiple communications of the phenomena we are attempting to engage (Jenks, 1992). There is an attempt to assert differences in thinking, to distance ourselves from homogeneous thinking about curriculum and its development. Post-modernism asserts that there is indeed no structure or master narrative in which we can wrap ourselves for comfort (Hutcheon, 1992). There is no master curriculum plan that we can generate for all times. Master plans are illusions.

A stretch to the edges actually pushes us to the limits of possibility. It challenges us to engage in experiencing the limits—the limits of our language, our subjectivity, our identities, our views, and our systematization of approaches to curricular action. Such challenge demands a rethinking of the bases upon which we function (Hutcheon, 1992). It invites us to play with forms emerging in dynamic shadows.

Emerging Forms of Dynamic Shadows

Suggesting we go beyond Tyler and Taba is more than recommending that we follow new rules. As Lyotard (1992) submits, we are invited to play the game *without* rules, and from the very playing, to invent new rules. We are enticed to play with emerging forms in dynamic shadows

of thinking, trying to put shape to what has previously been unimaginable and unpresentable.

In urging that curricularists play in these shadows, we are saying that we need to create, to conceive, curricula without the direction of preestablished rules. We need to gain excitement from engaging in the curricular game without what Lyotard calls the solace of good forms, the consensus of a taste that would enable us to share collectively a common vision. In a real sense, going beyond Tyler and Taba is engaging in action that is seeking the formulation of new rules, the shaping of forms emerging in the mist of the edge of our thinking. We are asked to create new metaphors to guide our dealings with the world, Our challenge is not that of supplying a clear reality, but inventing allusions to the conceivable and engaging ourselves in the dynamics of the system (Lyotard, 1992).

To play with forms emerging from dynamic shadows places our focus on forms and wholes, in contrast to segments, parts, and their arrangements. To get beyond Tyler and Taba is to suggest that we engage in a holistic approach to conceptualizing the curriculum and its creation. If we consider the whole, we will be immersed in considering the dynamics of the system. We will come to realize that order will emerge from such dynamics (Lewin, 1992).

This new thinking within the realm of post-modern and complexity denies the validity and usefulness of the mechanical notion of the universe. We are urged to reject the clock metaphor to explain our worlds and come to apply biology as a more useful paradigm. It is more productive for curricularists to think of curricula as comprising ecological systems. In employing the language of biology within a post-modern framework, we recognize that diversity and differentiation are the commonplace, not the exceptional (Toulmin, 1990). Getting away from traditional thinking, in our case Tyler's and Taba's, we manifest more discriminating and discerning means of processing curriculum questions. No master narrative or rationale directs our curriculum actions.

The biology metaphor enables us to consider the curriculum and its creation as comprising a living system. Instead of looking at an external manipulation of distinct parts, we accept that we are viewing worlds, immersed within the on-going behavior of an ecological entity. We celebrate curricula as living systems that never really settle down. There is a perpetual novelty (Waldrop, 1992). The systems contain internal dynamics that make them both complex and adaptive, allowing for an immense realm of possibilities.

In a dynamic world, we need approaches to curriculum development and to curriculum itself that are adaptive under conditions of constant

change and unpredictability. We need for these and anticipated times curricular systems that enable us to process perpetual novelty, that privilege the notion of emergence (Waldrop, 1992). We want emergence of forms, emergence of actions, emergence of systems, and emergence of results (Lewin, 1992).

Further, we need to realize that we are not outsiders who create and manage these systems. We are integral parts of the very systems and views we generate. The ways in which we engage in curriculum development and the conceptions we formulate of curriculum emerge from our engagement with these procedures and notions. Our involvement within the social contexts, both large and small, will influence and shape our curriculum formulations. Our actions over time cause us to realize, even celebrate, the increase in complexity within the total realm of the curriculum field. Our willingness to immerse ourselves and others in curriculum deliberations and dialogue is testimony to our faith that we will be able from our actions to add memory and information from times past, times present, and anticipated times in ways that will increase our collective curricular wisdom (Waldrop, 1992).

Post-Modern Curriculum Development

It is much easier to indicate where we have been than to indicate where we are going. As humans, we want purposefulness; the desire is part of being human (Doll, 1993). We want specifics; we judge the quality of dialogue by the number of specifics we can glean. We possess a need for action that leads to closure, to resolving our problems, to defining our actions. In taking this stance, we derive understanding and management of our worlds. If we are to go beyond Tyler and Taba, what will we specifically put in their place?

The procedures that Tyler and Taba advocated were predicated on a positivistic certainty (Doll, 1993). There were distinct points in the process that had definite purpose. In post-modern curriculum development, we are suggesting that the stress is not on the specific steps of action, but on the relations that result when people get together for the purpose of creating curricula. Rather than bring certainty to the process, there is a pragmatic doubt that results from realizing that decisions are not based on some privileged meta-narrative, but rather on the dynamics of human experiences within the local milieu.

One of the surprises of post-modernism is its acceptance of the chaotic, the emergent currents of change. Harvey (1992) quotes from Foucalt that we should "develop action, thought, and desires by proliferation, juxtaposition, and disjunction. We should prefer what is positive and

multiple, difference over uniformity, flows over unities, mobile arrangements over systems. Believe that what is productive is not sedentary but nomadic."

Curriculum development in the post-modern vein would stress play rather than certain purpose; chance over certain design; process and performance over a static, finished work; participation of players over distance of players from the process; a dispersal of ideas over a centering of ideas; a combination of ideas over a narrow selection; action driven by desire rather than symptom; and a system characterized by indeterminacy rather than determinacy (Hassan, cited in Harvey, 1992).

Accepting the post-modern stance, we recognize that there can be no one way of creating curricula. There is no one meta-narrative or meta-theory through which we can generate curricula. There are no rules for creating programs that can be considered universal or having the posture of truths. Going beyond Tyler and Taba is going into the realm of thought and action in which we have a plurality of procedures or language games for discourse about curriculum development. There is no permanence—all is fluid, but from fluid motions come patterns. In curriculum development, we need to utilize the motion, the ferment, to develop the curriculum. How we actually engage in such creative curriculum development is unclear: "It is a problem we will need to live with for generations" (Doll, 1993, p. 148).

As we live with this idea of dynamic patterns emerging from being engaged, from considering curriculum development as an ongoing social activity molded by myriad contextual influences, we will begin to see patterns of necessary curricular actions. The modern paradigm of Tyler and Taba will take time to be replaced by a post-modern paradigm (Doll, 1993). We now know, however, that curriculum development is not the algorism that has been central to much of modernist thinking. Rather, curriculum development is more of a playful dance—a process in which the dancers (both teachers and students) engage in a dialogue of motions (goal setting, content selection, experience design), and are thus transformed in ways influenced by the dynamics of the local "dance" situation (Doll, 1993).

Initial attempts to get beyond modernism in curriculum development are sure to appear rather slight. Perhaps it is more the attempt to move on than the actual results of such moving that should be our focus. For instance, Cornbleth (1990) cites Goodman's work on critical curriculum design, noting that his five phases of curriculum development (developing curriculum themes, exploring resources, developing learning activities, pupil evaluation, and unit evaluation) do sound conventional. But it is in discussing these stages that we see that he is attempting to get

us beyond Tyler and Taba. Rather than ask what content students can learn for specific purposes, Goodman raises questions as to what topics would enrich children's lives and expand their learning horizons. Also, he raises questions that address not the pieces of knowledge, but the holistic nature of knowledge. There is an emphasis on the uncertainty, ambiguity, and dynamism of knowledge, rather than a false sense of precision (Cornbleth, 1990). Central to the process of curriculum development is a perpetual, deep questioning of the "dance," the dancers themselves, and their locales.

An Example

There is danger in setting to paper a curriculum development model that will get us beyond Tyler and Taba. That danger is that the model suggested may be interpreted with the modernism mentality. Doll (1993) has suggested an alternative to the Tyler rationale. While his suggestions are not dealing exactly with how one actually creates a curriculum, we do get an idea as to how one might "dance" through the implied process. Doll presents four criteria for a curriculum designed to foster a post-modern view: Richness, Recursion, Relations, and Rigor. We consider these four criteria to be fluid points of reference in the creation of the curriculum. These criteria seem to imply different questions for teachers and students to pose when developing curricula.

In dealing with *richness*, curriculum designers—and we think it important to note that these players are teachers, students, and interested parties from the wider community—query themselves as to the depth of the curriculum that can be experienced so that students' lives are enriched. What layers of meaning can be arranged for students; what variety of interpretations can be selected or encouraged? At this juncture, involved parties ask themselves what is the "'right amount' of indeterminacy, anomaly, inefficiency, chaos, disequilibrium, dissipation, lived experienced" (Doll, 1993, p. 176). It is this right amount that cannot be predetermined, as would have been the case in determining scope within a modern framework of thinking. The right amount is an issue to be continually negotiated among students, teachers, and text. But, Doll asserts, one thing that cannot be negotiated is the fact that the curriculum must have some disturbing qualities. It is this very nature of the post-modern curriculum, celebrating an unstable order, that allows this means of curriculum planning to foster the creation of a rich and, it is hoped, transforming curriculum.

The second criterion for a post-modern curriculum, *recursion*, suggests to curriculum developers that they are to participate in a development

process that has both stability and change. The general categories of knowledge may be the same, but the particulars addressed will vary. As people think about aspects of the curriculum, their thoughts will continually cycle back to previous thoughts and be changed and enriched in the process. Having the curriculum development process be recursive encourages the participants to engage in reflective interaction with all the players. The very act of curriculum development not only enables a listing of curricular possibilities for students to experience, but also creates a culture for all the players.

Doll (1993) notes that in creating a curriculum that is recursive, there is no fixed beginning or ending. All seeming endings are new beginnings. The components of the curriculum being designed are not perceived as disconnected units or even connected units. Rather, what is suggested for the curriculum is perceived as differing series of opportunities for students and teachers to engage in reflection, in constructing meaning. Everything suggested to be done leads to other things to be done, considered. The curriculum is designed to allow for continually going back to and then incorporating previous points and insights into a growing sense of understanding.

The third criterion, *relations*, suggests that in designing a post-modern curriculum, we need to think more about the relations between the parts of the curriculum than centering our attention on the parts. It is important that content selected encourage individuals to relate to it and to other students also experiencing said content. The emphasis on relations brings students and teachers into dialogue. It suggests that the resulting curriculum essentially cannot arise outside the school and classroom. It cannot be generated by persons who create educational materials. Certainly, it cannot be created by textbook authors. The criteria of relations makes evident that curriculum construction is a social activity being played out within particular frameworks; it is a human activity full of surprises, and we must allow for the surprises in our actions (Cornbleth, 1990). This differs from the technical modern approach of listing steps with the cannon of no surprises.

The frameworks within which the relations exist make clear that what people bring to the dialogue, to the conversations, to the teaching and learning, is influenced by the contexts they are experiencing. The process of creating curricula is interactive. We have people participating in a type of ecological system, able to be adaptive and self-regulatory.

Rigor is the fourth criterion that Doll presents for a post-modern curriculum. While rigor is not a step in the process, it is a criterion to consider as one engages in curriculum development. Rigor demands that curriculum creators constantly question their actions and the results of

their actions. It is being aware of (a) the assumptions one brings to the curriculum "dance" and (b) the fact that these assumptions contain values that influence the very process. It means getting beneath the surface appearances—challenging claims (Cornbleth, 1990).

Another aspect of rigorously creating a curriculum is realizing the impossibility of being certain that one has attained the correct answer. The search must go on with individuals striving for new combinations, interpretations, and patterns (Doll, 1993). Indeed, contrary to the scientific heritage in creating curricula, one seeks to enrich the imagination. In many ways, the scientific heritage, in stressing the one correct answer, has served to impoverish the imagination. Approaching curriculum development from a post-modern stance means addressing the paradox of imagination (Postman, 1993). Being scientific or modern in curriculum development has led to the weeding-out of the proliferation of new ideas. In contrast, being post-modern is to cultivate new ideas and novel ways of dealing with them.

It appears that the model of curriculum development implied by Doll has the features of being self-organizing as opposed to mechanistic, of being non-linear in action compared to linear, of being conducive to creativeness and openness as opposed to being deterministic, and drawing its essence from chaos theory as opposed to Newtonian mechanics (Jencks, 1992). Curriculum development in a post-modern posture beyond Tyler and Taba is ecological in view, holistic and interconnected, interrelated and semi-autonomous, and heterarchical rather than hierarchical.

However, despite much heated debate, this new "model" is not the antithesis of the modern. As Jencks argues, post-modern is a complexification and hybridization of the modern. In going beyond Tyler and Taba, it appears that this is exactly what we are doing. Rather than denying our Tylerian past, we are adding needed complexity and creativity—imagination, if you will—to our heritage. We are transforming, rather than overturning, what Tyler and Taba urged us to consider.

Our adherence to the modern has served as a safe harbor. It is time to take the educational ship and ourselves with it out of safe harbor, into the challenges, uncertainties, and dynamics of a chaotic ocean. We are invited to sail uncharted waters, discover and create new worlds, and to share stories of adventure so as to establish new educational communities.

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