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Process Philosophy and Process Theology in Curriculum Studies

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Abstract

This paper advances an orientation to teaching and learning with a foundation in Process Philosophy and Process Theology. It explores Currere as a process of understanding curriculum as a rejection of inert information in the teaching and learning context as explicated in Alfred North Whitehead's philosophy of education. This orientation was initiated by the Greek philosopher Heraclitus, and Process Philosophy continues to be advanced by curriculum theorists today. Drawing on phenomenological inquiry and Teilhard de Chardin's theodicy, this paper investigates a complex curriculum conversation of *self-social-cultural* interpretations that emerge from the Process thought of Whitehead and Teilhard and points toward a metaphysics of intersubjectivity.

Keywords: Process Philosophy, Theology, Currere, Phenomenology

"These words were spoken by my guide; at this, I begged him to bestow the food for which he had already given me the craving." (Dante Alighieri, *Inferno* 14.91)

When Dante is awakened by his teacher, Virgil, in *Inferno* of *The Divine Comedy*, it is accompanied by a hunger to know (Alighieri, 2018). Without the hunger for knowledge, the student would have no desire to eat and be nourished by curriculum insights and new perspectives. The process of awakening the hunger for knowledge and understanding in a student is a unique mystery and gift. Maxine Greene calls this *Releasing the Imagination* (Greene, 1995). This imagination is often set in motion by a teacher who incites in the student the eros to learn. Energy is released to fuel the hunger for deeper understanding. Dante poetically describes a guiding principle of the Reconceptualization of curriculum studies explicated in the text *Understanding Curriculum* (Pinar, Reynolds, Slattery, and Taubman, 1995). In this paper, I explore the process of understanding curriculum as the rejection of inert information in the teaching and learning context and advances an orientation to teaching and learning emerging in Process Philosophy. This orientation was initiated by the Greek philosopher Heraclitus, explored poetically by Dante, explicated in Alfred North Whitehead's philosophy of education, and continues to be advanced by curriculum theorists today. While Process Philosophy is not the only educational philosophy or curriculum theory that rejects static and inert materials and methods, Process thinking does offer unique perspectives that are antecedents of Currere and has inspired work in theology and curriculum studies.

Drawing on phenomenological inquiry (Husserl, 1927/1992), Teilhard de Chardin's theodicy(1959a; 1959b), and Process Philosophy (Whitehead, 1929a; 1929b; 1933), this paper investigates a complex curriculum conversation of *self-social-cultural* interpretations that emerge from Whitehead. Whitehead was best known for his work in logic and the philosophy of science. In collaboration with Bertrand Russell he authored the landmark *Principia Mathematica* (Whitehead & Russell, 1910). His work in philosophy of education culminated in the publication of *Aims of Education and Other Essays* (Whitehead, 1929a; Whitehead, 1967) in which he critiqued a curriculum of inert information. In his text *Process and Reality: An Essay in Cosmology* (Whitehead, 1929b; Whitehead, 1978), Whitehead developed a comprehensive metaphysical system which has come to be known as Process Philosophy.

The most common applications of process thought are in the fields of philosophy, theology, and science, as well as scholarship in feminism, ecology, economics, and education. Process thinking, in general, seeks to elucidate the developmental nature of personal and social reality, emphasizing *becoming* rather than *stasis* or *being*. Process thought also stresses the inter-relatedness of all entities. This parallels

interdisciplinarity and intersectionality in curriculum studies. There are also echos of Currere in Process thought. Process Philosophy describes reality as ultimately made up of experiential events rather than enduring inert substances. The particular character of every event, and consequently the world, is the result of a selective process where the relevant past is creatively brought together to become that new event. In curriculum theory, this is sometimes called a proleptic moment (Slattery, 2013). William Pinar describes it as the synthetical moment, the synthesis of currere (Pinar & Grumet, 1976; Pinar, Reynolds, Slattery & Taubman, 1995). Whitehead (1929b, 1978) believed that the universe proceeds as the many become one, and are increased by one in a sequence of integrations at every level and moment of existence. Process thought thus replaces the traditional Western substance metaphysics with an event metaphysic. Ultimately, process thought seeks to integrate and reconcile the diverse facets of human experience such as ethical, religious, aesthetic, and scientific intuitions into a more coherent explanatory scheme. In curriculum theory, the notions of currere, complexity, and interdisciplinarity are related to process thought. John Dewey's understanding of growth and experience in education leading to social consequences and values in society emerged contemporaneously with Process Philosophy and Process Theology (Dewey, 1934a; Dewey,1938).

Whitehead's philosophy teaches that reality is conceived as a process of creative advance in which many past events are integrated in the events of the present, and in turn are taken up by future events. My first reading of Whitehead's major work, *Process and Reality: An Essay in Cosmology* (1929b) was in 1973 in an undergraduate philosophy course examining the intersection of Teilhard de Chardin's process theodicy and Whitehead's process metaphysics. The following year, I completed a Catholic novitiate and participated in daily exercises at Christ in the Desert Monastery in Abiquiu, NM under the guidance of the Benedictine, Christian Brothers, and Cistercian monks. In Abiquiu, I continued my study of Teilhard and Whitehead, and was also introduced by the monks to emerging Liberation Theologies and, at the time, the recently translated Nag Hammadi texts of Egypt. This was interspersed with the monastic morning rituals of Vigils, Lauds, and Terce and culminating in evening Vespers and Compline. The foundation of my life-long academic journey emerged during this enchanted experience. My second reading of *Process and Reality* was the corrected edition edited by David Ray Griffin and Donald Sherburne (Whitehead, 1978) during my graduate work in theology in California and later with Rosemary Rader and Elaine Pagels at Arizona State University. Griffin served as an external advisor for my 1989 dissertation at Louisiana State University titled *Toward an Eschatological Curriculum Theory* (Slattery, 1989) in which I integrated Whitehead's metaphysics, Teilhard's theology, Dewey's eschatology, and Pinar's Currere to point toward a reconceptualized eschatological metaphysics as a counter narrative to a curriculum of the Tylerian Rational of goals, objectives, lesson plans, scientific realism, and evaluation.

While I appreciated the work of Teilhard and Whitehead to help explicate theological and educational debates (see Barbour, 1969; Barbour, 1971), the key difference in Teilhard and Whitehead, for me, is that, while Teilhard focuses on the unity of the cosmic process as a whole and its teleological orientation to the Cosmic Christ, Whitehead emphasizes instead the diversity and multiplicity of actual occasions as the final real things of which the world is constructed (Whitehead, 1929b). Furthermore, even though Whitehead concedes that the growth of a complex structured society (of actual occasions) exemplifies the general purpose pervading nature, he anticipated no integrated cosmic convergence and no final consummation of history even apart from the Cosmic Christ. For Whitehead, unlike Teilhard, cosmic process does not mean progress toward a goal predetermined by a Creator God. For him, God and the World are the contrasted opposites in terms of which Creativity achieves its supreme task of transforming disjoined multiplicity, with its diversities in opposition, into his concept of concrescent unity, with its diversities in contrast (Whitehead, 1929b). Concrescent unity anticipates Pinar's Synthetical moment of Currere as an important social and cultural construct in the midst of global conflict. For Whitehead, the cosmic process is thus infinite, without beginning or end. The notions of God and the World are forever in dialectical relationship. Dewey, like Whitehead, used the term "God" in his book *A Common Faith* (Dewey, 1934) as an explanatory concept for concrescent unity or, in my language, prolepsis (Slattery, 2013). Currere, prolepsis, and concrescent unity are the interrelated foundations of this proposal for *self-social-cultural* reconstruction. Teilhard and Whitehead were deeply committed to such reconstruction (Teilhard, 1959a; Teilhard, 1959b; Whitehead, 1933). Of course, the theological investigations of eschatology are not limited to Christian oriented scholars.

There is abundant Process scholarship in Jewish, Buddhist, and Islamic studies (see, for example, Block, 1999). I am only reporting here on the Christian theology that informed my early academic studies as a historical and autobiographical narrative. Further research on the interfaith and interdisciplinary contributions are most important. (See Slattery, 2013, Chapter 4, for detailed interfaith and ecumenical examples.)

One can certainly attribute the difference in metaphysical vision between Teilhard and Whitehead to their contrasting personal background. Teilhard was a Jesuit priest and paleontologist anxious to reconcile his Christian faith and seminary training with the theory of evolution. He was not a professional philosopher of science like Whitehead who was consciously trying to break free of the materialistic determinism characteristic of modern natural science. Whitehead's primary objective was to set up a metaphysical scheme in which novelty and spontaneity would be as much an ongoing feature of physical reality as order and predictability (see, for example, Bracken, 2005). Hence, how the cosmic process began and where it might end were not questions pertinent to his task. What was important was to expose the fallacy in the implicit metaphysics of modern science whereby reality is composed of inert bits of matter simply located in space and time and thus with purely external relations to one another. These external relations segment self, society, and culture as distinct entities. Once this segmentation is normalized, the separation of human from nature leads to unexamined devastation of cultures and the environment. Ultimately, the self is psychologically and physically isolated and extinguished. Whitehead insisted that the final real things of which the world is made up are actual occasions or momentary self-constituting subjects of experience with varying degrees of spontaneity depending upon the relative complexity of their self-organization. In this way, he agreed with Teilhard that material things have a *within* as well as a *without* and a principle of spontaneity as well as a principle of order. However, Whitehead had different reasons. Like many philosophers and educational theorists of the time, both were opposed to the dualism between spirit and matter, human and nature, self and culture, but Teilhard for theological reasons and Whitehead for philosophical reasons. Teilhard's theology earned him a threat of excommunication by Rome and a mandated retraction of his philosophy. Teilhard reluctantly submitted and went into self-imposed exile in China. His major works, *The Divine Milieu* (1959a) and *The Phenomenon of Man* (Telihard, 1959b), were not published until after his death in 1955. While Teilhard's views on original sin and many of his other works were censured by the Catholic Church throughout his lifetime, other contemporary scholars extended his ideas in support of what one scholar called "original blessing" (Fox, 1983). Of course, Matthew Fox also received the same consequences at Teilhard. At the time of my initial study of Teilhard, he was considered a visionary by progressive and liberation Catholics for his creative work on the relationship between science and theology and for the advent and progression of ideas such as eco-theology. While it is not my purpose in this paper to critically re-evaluate Teilhard, scholars today may want to investigate the ways that his works generate intense debates about his scientific, theological, and philosophical difficulties and complexity. None-the-less, Process Theology inspired my generation of theology students in the 1960s and 1970s to reevaluate notions of original sin, eschatology, ecology, creativity, and transhumanism. Future research should be cognizant of the controversaries and complexities of Tehilard's work. Additionally, these controversaries and conflicts are parallel to many debates in contemporary curriculum studies. The orthodoxies defended by some are routinely deconstructed by a variety of contemporary fields. This is an ongoing struggle in the journals of our field. (See, for example, the historical debates between William Wraga and William Pinar in many issues of *Educational Researcher*, Elizabeth Ellsworth and Michael Apple in *Harvard Educational Review*, and Peter McLaren and Chet Bowers in *Educational Foundations*.) It is not my purpose to investigate or mediate these debates in this short reflection on Process thought and Currere. However, I acknowledge that these debates are integral to the struggles of the curriculum field.

Whitehead, for his part, secured a place in the canon of twentieth century philosophers, particularly after the publication of the 1978 corrected edition of *Process and Reality* and the founding of the Center for Process Studies by David Ray Griffin and John B. Cobb, Jr. at Claremont Graduate School in California. However, suspicion about Whitehead's theological connections have made Process Philosophy under-theorized and even suspect in many academic circles. I also find that this is also true of work of theological curriculum theorists. The exclusion of theological reflections is considered an oversight with devastating consequences by John B. Cobb, Jr. and David Ray Griffin who direct the

Center for Process Studies of which I was a member with professors William Pinar, Chet Bowers, and David Purpel at the Greening of Higher Education summits at the Claremont Graduate School of Theology in the 1990s. The center attracts significant support from Asian and Buddhist scholars and feminist theologians, but limited interest by cultural studies scholars, and certainly no support from the more vocal antagonists among critical theorists. In this paper, I offer an example of the possible (re)imagination of philosophy and theology in curriculum studies.

I suggest that it might be possible to address the critical attacks as well as reconcile Whitehead and Teilhard's different process-oriented visions of reality in terms of a third position, namely, a metaphysics of intersubjectivity of *self-social-cultural* reconstruction. Intersubjectivity implies a balance between multiplicity and unity, between multiple subjects of experience and the higher-order level of existence and activity which they achieve by their dynamic interaction. On the one hand, in saying that the final real things of which this world is made up are actual occasions or momentary self-constituting subjects of experience, Whitehead (1929b) provides the necessary plurality of subjects of experience needed for a metaphysics of intersubjectivity. But he is vague on the ontological status of societies as the objective result of this intersubjective activity. Teilhard, on the other hand, was clearly thinking in intersubjective terms with his notions of the *noosphere* or *collective consciousness of humankind*. Teilhard (1959a) is vague with respect to the details of his scheme and how his theory of "complexification" works at the inanimate level or even at the pre-human animate level of nature. Is the *within* of things to be identified with subjectivity, as in Whitehead's philosophy, or simply to be accounted for in terms of a distinction between radial and tangential energy, both of which terms are themselves more suggestive than scientifically descriptive? Reading Teilhard and Whitehead in juxtaposition to Pinar's *Currere*, Greene's *Imagination*, and Dewey's *Experience*, leads me to conclude that such a reconciliation through intersubjectivity is possible and desirable. This is the same conclusion I proposed in a *Journal of Curriculum Studies* essay titled "Hermeneutics, Aesthetics, and the Quest for Answerability: A Dialogic Possibility for Reconceptualizing the Interpretive Process in Curriculum Studies" (Slattery, Krasny & O'Malley, 2007) and an essay titled "Hermeneutics" (Krasny & Slattery, 2019) where we propose a dialogic intersubjectivity in the spirit of Mikhail Bakhtin to reconceptualize the hermeneutic process.

Whitehead was reacting to the three dominant philosophical traditions that developed out of the victory of the mechanistic, materialistic model of nature. This is a victory we owe especially to Rene Descartes. One intellectual tradition adopts this model of nature and then holds that nature is the inclusive reality. For this tradition, human beings and all our thinking, feeling, imagining, and hoping are parts of the world machine. The second intellectual tradition is dualism. This was the position of Descartes himself. In this vision, alongside the world machine, which includes human bodies, there are human minds. These operate on entirely different principles. We must immediately ask about the relation of mind and matter. To this question, neither Descartes nor his followers to the present day have provided any intelligible answer. The faithful simply know it must be so, since they know that their thinking is not part of the world machine. But all daily life presupposes that the mind and the body are intimately connected. The third intellectual tradition is idealism initiated by Kant, even though his own thought remained tinged with dualism. According to Kant, the only way to view the world is as a machine, but this is because of the structure of mind, not because any objectively existing world has that character. Science must interpret the world in mechanistic terms even when it studies human beings. But human beings know that all this knowledge is only of phenomena or appearances. The deeper, and all-determining, reality is human thought. The world is a construct of mind (see Bracken, 2005).

These three dominant philosophical positions are destructive at several levels, especially when they hold a view of nature either as a machine or as a social construct. Most of the naturalistic thinkers of the nineteenth and twentieth centuries adopted models that are "processive." This means, chiefly, that the ideas of substance employed by Descartes to understand mind and matter are abandoned. There is nothing unchanging underlying either the subjects or the objects of experience. What is actual is always immersed in temporal process. In my study of theology and Process Philosophy, I have come to believe that the fullest (but certainly not the only) systematization of this nonmechanistic, nonmaterialist, processive naturalism is that of Whitehead. Such thinking is integral to contemporary curriculum studies. I do not claim that Process Philosophy is normative or exclusive. For example, of particular

interest is the work of Peter Taubman who has published articles on these themes in other contexts beyond Process Philosophy. A most notable example that provided interrelated themes to my work here (and insights into curriculum theory) is Taubman's (2009) award winning book *Teaching by Numbers: Deconstructing the Discourse of Standards and Accountability*. Taubman offers a multi-disciplinary overview, critique, and analysis of education. Drawing connections among federal, state and local governmental agencies, corporate interests, the learning sciences, and the fears and fantasies of classroom teachers and teacher educators, Taubman reveals the ways in which dominant educational policies are shaped, promulgated, infused into classroom practice, and embraced by mainstream educational organizations and educational policy experts. *Teaching by Numbers* makes clear the profound transformation that has occurred in education and particularly teacher education. Taubman clarifies how progressive educators, such as Linda Darling-Hammond, educational organizations, such as AACTE, and schools of education, such as Brooklyn College's School of Education came to embrace policies, language, and visions that serve business rather than progressive curriculum agendas. Taubman contends that the accountability rhetoric ends up holding teachers responsible for educational success as measured by test scores. The chapters in *Teaching by Numbers* on the influence of the learning sciences and on the reasons vulnerable teachers embraced and are embracing audit culture, their own surveillance, and their own dis-empowerment, offer analyses that go far beyond the usual critiques of instrumentalism and the intrusion of the marketplace into education.

Whitehead (1929a) in *Aims of Education* insisted, "The essence of education is that it be religious" (p. 14). Religious education for Whitehead included duty and reverence: the duty to be involved in human community and global concerns and a profound reverence for the cosmos. Whitehead explains: "And the foundation of reverence is this perception, that the present holds within itself the complete sum of existence, backwards and forwards, that whole amplitude of time which is eternity" (1929a, p. 14). It is fascinating that theoretical physicists in quest of a unified theory are therefore compelled to address theological questions in the face of the new data (Hawking, 1988). The new discoveries have caused astrophysicist George Smoot, a self professed agnostic, to exclaim, "If you're religious, it's like looking at God" (cited in Lemonick, 1992, p. 62). Modern science has come full circle since the eighteenth-century rejection of religion as a hindrance to the development of modern scientific progress by Pierre Simon de Laplace to a realization that religious and philosophical questions are at the very heart of science (Griffin, 1988a; Griffin, 1988b). My own theological and scientific studies were never presented in opposition.

Whitehead also argues that the combination of expert knowledge and cultural knowledge is the only beneficial way to learn. Expert knowledge is obtained from all curriculum subjects. However, when too many subjects are being taught, ideas become disconnected, hence all the inert ideas are useless to the student's thought process. This is why he says that studying just to pass a standardize test is a waste of time. What happens to all this knowledge after the test is taken? Where will it be applied? Expert knowledge is needed but only to a certain limit with general ideas. This leaves room for the student to discover what these ideas mean. The discovery of life with these generalizations give better understanding. Whitehead believed valuable intellectual development is self development. This understanding will not be complete without cultural knowledge such as philosophy and the arts which will allow the students to apply knowledge to life (Noe, 2023). This allows for more discovery of how the cultural knowledge can be applied to life which Whitehead feels is the only subject matter that should be taught. Whitehead's main point is that scientific knowledge can be useful if utilized in accordance with cultural knowledge. This relates everything to the student's thought process of specialization. Specialization is merely the idea that there is one subject matter, life, and at the end there is one goal. To achieve that goal we have to apply all the general ideas to our lives with the humanities. The humanities help us see how the inert ideas can inform our lives. Focusing on self and life allows students to then advance a *self-social-cultural* understanding.

The long-standing and almost perennial philosophical debate between those who argue that education is a universal process that reflects a monolithic conception of human nature, and those, like George Counts and W. E. B. DuBois, who insisted that education must be culturally relevant to particular situations and societies, can be instructive to our discussion of the transformation of education. We must be careful not to become polarized at either end of this debate. The more appropriate position

recognizes the interdependence of the global condition and the local context. Whitehead (1933) in his book *Adventures of Ideas* best explained this concept of *self-social-cultural* interdependence. As education moves from the individual story in Whitehead's initial stage of romance, through the process of finding commonalities and differences in his second stage of precision, to his final stage of generalization, Whitehead (1933) understands that the commonalities and connections signify that a "harmony of the whole is bound up with the preservation of the individual significance of detail" (p. 264). Thus, individual pluralism in specific contexts gives strength to the whole edifice of education. We might call this kaleidoscopic community sensibility; Charles Jencks calls it radical eclecticism. Jencks (1986) succinctly explains why education must be radically eclectic:

> We must be aware that a complete sublation, or Hegelian dialectic which resolves contraries, is not always the result or goal of post-modernism: parts, sub-assemblies, sub-cultures often keep their unassimilated identity within the new whole. Hence, the conflicted nature of the pluralism, the radical eclecticism of the postmodern style. (pp. 14)

Curriculum Studies has many scholars dedicated to examining Process Philosophy. Whitehead is central in the movement of the curriculum field that is based on the internal relatedness of all being, rather than individual entities. For Whitehead, the advance of post-classical physics contests what he calls scientific materialism: the traditional metaphysical understanding of the world which he explicates in the book *Science and the Modern World* (Whitehead, 1925). The scientific materialism assumes a deterministic, regular, close universe that is fundamentally predictable through the advancement of scientific study. This centuries-old scheme of thought went far beyond scientific disciplines. As he claimed, "this quiet growth of science has practically recolored our mentality so that modes of thought which in former times were exceptional are now broadly spread through the educated world" (Whitehead, 2011, p.2). As William Doll maintains: "It's Newtonian and Cartesian assumptions of a stable, split universe, predictable through mechanistic-linear order and governed by cause-effect relations, have dominated our intellectual, social, even political thought" (Doll, 1990).

For Whitehead, things have changed since the advent of quantum mechanics, and we are faced with the era of the displacement of scientific materialism. For example, Newton's mechanistic view of the universe was challenged by Einstein's theory of relativity where mass and energy can be converted into one another; the existence of atom that makes gross matter become a more negligible component of the cosmos; the structure of atom demonstrates the contrary image of the stable, solid matter we take for granted. In the subatomic level, matter becomes more and more elusive and out of our common experiences in life. Also, complexity theory and chaos theory shed light in the same direction. In a word, the advance in physics implies that an ontology that will be very different from the substantialist Cartesian or mechanistic Newtonian accounts of matter and the cosmos at large.

This ontology might also enable us to reconfigure the metaphysical foundations that ground curriculum theory. The aim to provide a constructive interpretation of the cosmos, and the curriculum has been shared by several scholars in curriculum theory. In referencing William Doll, I write, "just as physics led society into the modern age, physics (particularly chaos theory) will lead society out of modernity and into postmodernity" (Slattery, 2013, p. 26). Whitehead's lasting influence on the paradigmatic shift within the curriculum field can be understood through the way he awakens us from dogmatic slumbers of modern conceptions of knowledge and the cosmos through the new cosmology he lays out.

One of the ontological innovations put forward by Whitehead is his relational event ontology, which inspires and influences the curriculum field in what might be called relational curriculum. For Whitehead, relations not atoms become the "really real" of the cosmos (Doll & Broussard, 2002, p. 38) and the universe is a complex whole through which all the indeterminate, organic entities co-exist in dynamic, indeterminate ongoingness. Whitehead proposes the concept of concrescence to denote the basic feature of the world as the process of the production of novel togetherness (many into one). Any actual entity involves other entities and their indeterminate potentialities in its constitution. This depiction of reality as both co-constitutive and with limitless possibilities runs deeply throughout his works.

This metaphysical standpoint has two major consequences to education. First, education should be holistic by emphasizing the interrelations between different parts of knowledge. Whitehead has

illustrated:

> Let the main ideas which are introduced into a child's education be few and important, and let them be thrown into every combination possible. The child should make them his own, and should understand their application here and now in the circumstances of his actual life. (Whitehead, 1967, p. 2)

Several curriculum theorists have also maintained that curriculum should center around relations as the fundamental constitution of the world rather than independent individuals connected through causal chains (Doll, 2002; Fleener, 2002; Fleener, Doll & St. Julien, 2005). Whitehead and his process thought reminds us that we are living in a complex, indeterminate, and relational world. The "parts" are interrelated with and constitutive of each other. Thus, teaching and learning should be the matter of holistic learning, rather than the accumulation of disconnected ideas. William Doll (2002) contends that, Whitehead's curriculum dictum, that one should teach few subjects well, throwing ideas "into every combination possible" (Whitehard, 1967a/1929, 2). As Fleener argues, "The curriculum, in continual process, becomes an endless circle of exploration and inquiry" (Fleener, 2002, p.87).

In joining the Whiteheadian thought that "the world is a complex unity through which all the dynamic entities enter" (Doll & Broussard, 2002, p. 38), scholars such as Regnier (1992), Evans (2006), Fleener (2006) and Gunter (2006) formulate new holistic curriculum and pedagogical analyses. For example, Fleener (2006) relates the robust relational ontology in Whitehead's thought to mathematics education. Influenced by Whitehead, Wittgenstein, and Dewey, she argues that the aim of mathematical education should not be the painful transmission of pieces of information from teachers to students. Rather, mathematical education should go beyond the "given" and facilitate students to experience mathematics as a way of meaningfully engaging in the world. Relational approach to mathematics teaching and learning will let students see the world differently, as a mathematical relationship rather than only a drudgery in the schooling system.

Second, this relational ontology indicates a profound solidarity among all entities, which has ethical, political, and environmental significance. Curriculum theories following the lead of Whitehead not only demonstrate the inseparability of all entities, but also disclose a felt solidarity from within. For example, Gunter (2006) investigates Whitehead's significance to environmental education. For Whitehead, everything from the atomic to human level is always already located in an active, dynamic, and sustaining interdependence and interconnection. Nature, he argues, is not neutral. Instead, values permeates every corner to the ecosystem.

For Whitehead, the world is in continuous production of *novelty* through dynamic togetherness of all beings (concrescence) in concrete situations. This might lead us to curriculum for organic creativity. Creativity is not simply one of the ideal actions in human life, rather it is a fundamental principle of the world. Every creature is creative. As Whitehead illustrates, "It is the ultimate behind all forms, inexplicable by forms, conditioned by its creatures" (Whitehead, 1929b/1979, p. 20). This principle of creativity is "the universal of universals characterizing ultimate matter of fact" (Whitehead, 1929b/1979, p. 21).

Whitehead tells us that curriculum theories should manifest the creative and interconnected character of reality and bring vitality of thought into the curriculum field. There is an aliveness emphasized in process and postmodern curriculum. As William Doll and Wendi Broussard proclaim, "this lively spirit or creative force permeates the very concept of a postmodern curriculum" (Doll & Broussard, 2002, p. 28). The creative principle questions some of our most basic assumptions about curriculum, teaching, and learning. Influenced by Whitehead's critiques, curriculum theorists have argued that the traditional curriculum field prior to the Reconceptualization severely thwarted creativity.

William Doll and other theorists have described that curriculum theory before reconceptualization has the fundamental belief in method (Doll & Broussard, 2002; Doll, 2006; Fleener, Doll & St. Julien, 2005; Evans, 2006). Through the rise of protestantism, commercialism, and the formation of the middle class, the curriculum field and education writ large acquire the entrenched belief in the necessity of imposing recipe-like, standardized methods to students. Education thus became mimetic rather than creative. In educational settings, students are taught by instructors and the curriculum structures that the only way

to acquire knowledge about the world is through one correct method. What is overlooked is Whitehead's creative principle indicating that all methods are creative products by interdependent creative entities and have numerous possibilities of change. In referring to Whitehead's worry about the universalization of practical habits, these scholars argue that this emphasis on a singular method only solidifies the rigidity of dogmas and inert information that impedes creativity.

If education is not about the imposition of inert ideas, and if we see individuals as innovative, interdependent creatures, then what should a Process curriculum look like? It might be called Affective Curriculum. Whitehead's relational cosmology and philosophy of organism require that the process of knowledge production is not just a rational achievement, but also an inherently affective one. That is, learning is not an absorption of information, but a process of feeling. Prehension as uncognitive apprehension consists three parts: 1) the subject that is prehending; 2) what is prehended; 3) and how the subject prehends the thing. This concept of prehension and the lure for feeling facilitate the development of the affective curriculum. In *Process and Reality*, Whitehead (1929b, 1978) maintains that a preposition is not a statement about true or false representation of the external reality, but a lure for feeling through which one entertains the possibility of perceiving the world differently. For Whitehead, "this lure for feeling is the germ of the mind" (1978, p.85). Human beings, the argument concludes, are fundamentally emotional.

Whitehead views the rhythm of authentic education as the cyclic practices that consist three stages: the stage of romance, the stage of precision, and the stage of generalization. The classic modern curricula pay extensive attention to the technicality of knowledge at the expense of emotion based on the bifurcated view of the opposition between reason and affect. Foster N. Walker (2006) contends that through the notion of romance, Whitehead inverts the idea that any serious learning must be unmitigated hard work that we must impose on students regardless of how they feel. Good teaching and learning should be charged with emotion. As Walker says, the romance of learning is at the same time the most serious work and the most playful engagement. Whitehead transforms the role of teaching from the repression of emotion to the cultivate new unity of complex feelings. As Malcolm Evans (2006) points out while illustrating Whitehead's influence on education, the intellectual aspect of teaching and learning is important and critical, but it is the emotional that guarantees motivation, self-discipline, and the desire for achievement.

In their edited book, Whiteheadian scholars Nicholas Gaskill and A. J. Nocek (2014) claim that "the full measure of Whitehead's relevance for contemporary thought has yet to be taken into account" (p.1). This is understandable, they argue, since his ideas were ahead of his age. This is certainly true of Pinar's Currere also. However, like Pinar, Whitehead's relational cosmology resonates with new materialist scholars such as Karen Barad and Jane Bennett, both of whom emphasize interconnectedness as basic feature of the world. Karen Barad constructs the theory of agential realism based on the philosophy of science by Niels Bohr and the advancement of contemporary quantum mechanics (Barad, 2007). Through her scholarship investigating the formation of properties of entities in physics, she also maintains that everyone is part of dynamic, indeterminate, and intra-acting entanglements. Knowing is a material practice of engagement as a part of the world in its differential becoming. Strikingly, both Barad and Whitehead emphatically argue that the basic constituent of the cosmos should not be individual entities. Jane Bennett's (2009) claim that the human body is a nested set of microbiomes in its becoming is also situated within Process thought.

Donna Haraway, who is a life-long fan of Whitehead, perceives him as one of the radical thinkers about materiality in sciences, and acknowledges his influence in her "sense of worlding" (Haraway, 2016). We need to acknowledge that Whitehead's concretization of human situation sets "human experience in constitutive relation with a wider ecology of experiences" (Gaskill & Nocek, 2014, p.29) and breaks away with the anthropocentric tradition in Western thoughts. Using his own terms, Whitehead's philosophy is a product of creativity in a concrete situation at a particular time and will be felt by other creatures in a different time and energize new creation.

In the spirit of these scholars, and in the spirit of Whitehead's analysis and Jencks' radical eclecticism, some initial guiding principals for an integrated global and local vision for s*elf-social-cultural* reconstruction might include the following:

> First, a process approach to education is capable of engendering a significant reconceptualization of the nature of schooling globally as well as the experience of education locally because it respects the unique development of the individual and recognizes the dialogic interrelationship of all experiences. The emergent nature of this reconceptualization rejects hierarchical, authoritarian, patriarchal, and hegemonic ideologies, as well as models of curriculum committed exclusively to educational outcomes outside process and context. We must begin with the autobiographical (Pinar & Grumet, 1976) and the "intuition of duration" (Bergson, 1950, p. 27) and then support and encourage individuals to make connections to broader concepts. Dewey (1938) and Whitehead (1929a) demonstrated that this process can be rigorous and scientific without sacrificing the experience of the individual.

Second, the modern behavioristic emphasis in schooling, as exemplified in the unrelenting commitment to behavioral objectives, learning hierarchies, value-neutral empirical and analytical methodologies, goals and objectives, rote memorization, and competitive learning environments is not only outmoded but also detrimental to the emergence of an appropriate global educational experience. Whitehead (1929a) protested against this modern perpetuation of inert ideas. He wrote in *Aims of Education*, "Students are alive, and the purpose of education is to stimulate and guide their self-development. ... Teachers should also be alive with living thoughts. The whole book is a protest against dead knowledge, that is, against inert ideas" (1929a, p. v). In order for classrooms to reflect Whitehead's vision, educators must be lifelong learners and students must be leaders of instruction. A hermeneutic circle must be formed in classrooms where the discourse is shared, empowering, emerging, and tentative. This is a dramatic break with modern bureaucratic curriculum paradigms.

Third, a constructive postmodernism as understood by Griffin (1988a), Doll (1993), and Donald Oliver and Kathleen Gershman (1989), among many others, as distinct from critical theories, offers an important emerging approach to understanding curriculum. Poststructural philosophies are also making an important contribution to our understanding of language, especially as language reflects and influences worldviews. Scholars today are not reticent to engage both poststructuralists and constructivists and a diversity of all voices in a dialogic process. Here I incorporate language analysis and process philosophy into my curriculum proposals. For example, Patti Lather (1991) distinguishes between close reading which constructs a realist tale; a structural reading which constructs a critical tale; a situated reading which constructs a reflective tale; and a poststructural reading which constructs a deconstructive tale in order to help educators move beyond empirical-analytical reading methodologies to a more empowering poststructuralism. Madeleine Grumet (1988) offers a phenomenological approach to reading and language that celebrates the presence of an absence in the educational experience. Grumet (1988) writes: "Meaning is something we make out of what we find when we look at texts. It is not the text" (p. 142). Lather and Grumet demonstrate a way to move beyond the oppressive binary structures of modernity.

Fourth, the curriculum itself must be viewed primarily as Currere (Pinar and Grumet, 1976) and support the context necessary to move from "romance through precision to generalization" (Whitehead, 1929a). Our educational proposals must also attend to the problem of alienation, destruction, decadence, and evil (Griffin, 1976; Noddings, 1989; Kozol, 2005) so as to avoid the pitfalls of facile utopianisms prevalent in some political analyses, while at the same time being careful not to succumb to a nihilistic existentialism devoid of the religious (in both Dewey's and Whitehead's philosophical sense) and aesthetic as found in some philosophies (Dewey, 1934b, Noe, 2023). Administrators and teachers must be attentive to language, especially as it is politically, socially, and historically embedded. Our language must be dialogic on all levels of communication (Slattery, et al., 2007).

Some scholars would argue that communication in classrooms must be embodied. Karen Krasny (2004), for example, adopts an embodied perspective to explore the complex relationship between the aesthetic and moral value of literature. Drawing on recent advances in neuroscience and the emerging field of consciousness studies, Krasny explains how sensory imagery and emotional responses associated with the phenomenal experience of the reader are mapped by the body and stored in the reader's autobiographical memory. The human capacity to recombine and reconfigure existing images and to form new ones allows readers to achieve empathetic identification with characters and to try out

solutions to morally problematic situations within the safe confines of the text. Krasny argues that the richness of the literary experience is realized as it brings us face to face with the fundamental ambiguity of our existence and the chance to explore the human potential for good and evil.

I returned to Whitehead again in 1987 in a doctoral seminar on postmodernism at LSU where the students had the opportunity to read and critique drafts of what would become the text *A Post-Modern Perspective on Curriculum* (Doll, 1993). While the focus of the seminar was on constructive postmodernism in Jencks'(1986) text *What is Postmodernism?* there was also an emphasis on psychology and chaos theory. For the first time, I began looking at Whitehead's Process Philosophy and Dewey's Common Faith through the lense of postmodernism rather than theology. However, during the seminar we were also introduced Mark C. Taylor's (1984) *Erring: A Postmodern A-theology.* This remains one of the most important reconceptualizations of religion.

I have come to sense that modernist projects of not just curriculum, but also theology, are relics of materialist, dualistic, and mechanistic world view that are no longer appropriate for understanding the complexity of our current global milieu. Whitehead and Teilhard provided antecedents to contemporary discourses in currere as well as process thought in education, economics, theology, and science that are, perhaps, most critically needed today for an integrated *self-social-cultural* understanding and reconstruction. I am fortunate to have been introduced to process philosophy throughout my career by brilliant and compassionate scholars and colleagues. Process thought remains the most integral dimension of my work.

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