Curriculum Design as Being-in-the-World of Study and Teaching: An Autobiographical Re-conceptualization

by

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Abstract

Curriculum theory’s re-conceptualist movement, exemplified by William Pinar and Madeleine Grumet’s notion of currere, shifted the field’s emphasis from making curriculum to understanding it. The stream of curriculum thought was diverted away from the technical formation of curriculum and toward explorations of the lived-experiences of students and teachers. This study reconnects the re-conceptualists’ general neglect of the conversation about making curriculum with their historic move toward understanding.

Using currere—a re-conceptualist method of self-conceptualization—the author explores his own lived-experience as a curriculum designer and his scholarly re-conceptualization of curriculum design. The conceptual foundation of currere as a study of educational experience is explored as a prototype of curriculum design’s re-conceptualization. Currere as a method is posited to be a design, which acts to design the author’s autobiographical study of design, folding back upon itself, and becoming in part the subject of this study. Currere’s designing power iteratively gives shape to the author’s self-conceptualization as a re-conceptualist curriculum designer in four moments of inquiry: (1) the regressive, (2) the progressive; (3) the analytical; and (4) the synthetical.

Currere’s designing power acts to problematize the author’s experience of Tylerian curriculum design by revealing its technological irresponsibility as a negation of the future, a neglect of the temporality of lived-experience. Then, the temporality of currere’s design helps recover what has been lost. In his experience of currere as a theorizing of re-conceptualized curriculum design the author recovers a presence of beingness—his being-in-the-world as a biographically situated curriculum designer that is present with the lived-contexts of teaching and study. Re-made by this conceptual journey of currere a new understanding of curriculum design emerged: 1) the productive understanding that brings forth curriculum; 2) a co-evolution of understanding and making curriculum, which identifies and takes responsibility for what is lost; 3) an ensemble of co-created texts made by, and made to fit well with the contingencies and indeterminacies of, the lived-contexts of students and teachers; and 4) something produced from people’s lives.

Keywords: Curriculum; Curriculum Design; Currere; Study and Teaching
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Chapter 1.

Introduction

In 2004, I visited Bruce Mau’s “Massive Change” exhibition at the Vancouver Art Gallery. I was immediately struck by the exhibition’s exuberant and hopeful utopianism, oriented by an entrepreneurial social conscience inspired by Arnold J. Toynbee’s aspiration to be “an age in which human society dared to think of the welfare of the whole human race as a practical objective” (as cited in Mau, Leonard, & Institute without Boundaries, 2004, p. 15). As I walked through the installations I was intrigued with the project’s compelling premise that the world had become a design object. In Mau, et al. (2004) words, “design is evolving from its position of relative insignificance … to become the biggest project of all” (p. 16). Indeed, the authors boldly claim, “even life itself has fallen (or is falling) to the power and possibility of design” (p. 16). “Massive Change” prompted me to begin a deeper study of the world of design, and its design of the world.

At the time of my visit to Mau’s exhibition I already had a longstanding relationship with the world of design. As a B.F.A. in visual art graduate I had been exposed to visual design ideas and practices. Mine was not a formal design education, but it did enable me to apply my learning to a design field. Thus, on the strength of my education, my personal ingenuity, and the happenstance of opportunity I became a design professional. In fact, my life history was littered with design encounters. But, I’d never before thought about this world of design as its own phenomenon. Mau’s exhibit made me question how I experience, and what I think about, this often unnoticed human devised world forming the backdrop of my everyday lived experience—a world of intensely designed systems of unprecedented complexity and interconnectivity.

I carried my questions about design and the design of the world back into the world of higher education. At the time of my visit to Mau’s “Massive Change” exhibit, I
was the website architect for a small university in western Canada. My task was to build upon the institution’s preceding efforts to computerize its administrative and scholarly life. Commonplace in most universities the computerization of “the everyday functioning of the institution” (Pinar et al., 1996, p. 661) was explicitly an effort to make these functions better. Historically, this technological development began with a move from hand written to typed documents, then, to ones being produced by digital word processors along with a move from bookkeeping ledgers to digital spreadsheets. Following the introduction of personal computers and productivity software, efforts were made to digitize and interconnect documents—such as, ones stored in manila file folders in file cabinets, or the card catalogues of libraries holdings—and to organize this newly digital information in relational databases.

By the time my work began at this university in late 1999 its computerization was well underway; however, its presence on the Web was limited to a few hundred pages. During my tenure this number expanded to tens of thousands of pages. Moreover, I led the university through a transformation of its website from a one-way broadcast into an interactive site for the co-ordination of nearly every activity within its enterprise.

On the surface my professional design work was clearly linked to making the everyday functioning of the university better; however, I was not a technocrat designing to a master plan. Rather, I was a master planner for a new age. The historical setting for my design work was the formative years of the Web. It was an exciting time, rich with inventiveness, and radical ideas. There were few, if any, established design patterns, professional conventions, or user expectations. Given the complexity and scale of the university’s information space, the design problems I faced there were diverse, interesting, and challenging. My design work involved me applying traditional principles and practices of graphic design, along with some architectural notions, to the creation of an emerging media form. I used visual elements like typography, imagery and colour, and cognitive principles of visual perception and Gestalt psychology to design information spaces we called web pages. Similarly, I applied architectural ideas about systems, spatial structuring, organization, and circulation to each page’s interconnected environment—constructs we called websites. I worked to make possible desirable human experiences afforded by innovative human computer interactions and interfaces,
and through the creative process my designs shaped, and were shaped by, ever-deeper technological layers of designing. As a designer whose professional process was primarily informed by his critical art education, I was less inhibited by technical rational design thinking and I freely participated in the open-ended emergence of the Web.

Because common design patterns for university websites were not established at the time, I necessarily had to think about my design work on every level. I could not simply look to established standards, tailor those standards to my local situation, and work to implement an appropriate design efficiently and effectively. I had to understand the nature of my design problem and explore a broad spectrum of possible solutions. The technologies I utilized were not fully defined. Consequently, I was free to inquire into the Web’s technological nature—discovering for myself and in my own way, its affordances and constraints. Most significant to this discussion, I felt free to study the institutional context wherein my designing occurred—the academy. Thus, my designs were my responses to my understanding of the students’ experience, the educators’ experience, and the interplay of these two in what is commonly call curriculum.

1.1. Design and Education

As a designer working in the everyday world of a university, I saw the designer’s fingerprints all around me. Clearly, the university’s student information systems, all its mediated communication forms, and the physical classrooms were design products. Similarly, the education-design relationship was evident in the university’s institutional policies, processes, and the systems that supported the whole enterprise. As an architect of information systems, programs and courses of study appeared to me to be an educational genre of informational schematic forms—that is, the delineation of subject taxonomies and the arrangement of subject content, respectively. Similarly, as an interaction/experience designer, the planning of classroom instruction appeared to me to be experience designs—that is, the structuring of an environment to facilitate a learning experience. Entering into the world of education with the lens of a designer revealed to me a rich world of design with which it was intertwined.
What is design? As a word “design” is commonly used in a variety of different and often contradictory ways. Design theorist John Heskett (2005) illustrates the term’s problematic nature with his seemingly nonsensical sentence: “Design is to design a design to produce a design” (p. 3). His point is that we, in fact, use the word design in all these various ways. First, we use it as a noun to describe the phenomenon or general concept of design as a whole (design in education is important). Second, we use design as a verb to describe the action or process of designing (the educator is designing a new course). Third, we again use design as a noun in reference to a plan or intention (the faculty committee must approve the new course design). The final use, which is also a noun, signifies the finished product, or the concept made actual (the new course design improved student performance). We commonly use the word design in all these ways, and fluidly shift between these usages. Design is deeply imbedded in our linguistic lives.

Our everyday nuanced usage of the word design points to the fact that to some degree we all act as designers. Broadly speaking, the Nobel Laureate Herbert Simon (1996) argues, “Everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (p. 111). Following Simon’s broad reaching definition, I propose that design is simply the world we have made. That is, the world we have brought forth to serve us. Mau et al. (2004) describe this built world as systems of exchange, or design economies. What is most notable about these complex, integrated and interconnected systems is that over the past hundred and fifty years they have urbanized our dwelling (urban economies), mechanized our movement (movement economies), extracted and distributed the fuel that powers our activities (energy economies), digitized and networked our communication (information economies), imaged all we see and increasingly what we can’t see (image economies), interchanged our goods and services (market economies), forged our materials (material economies), battle tested our ingenuity (military economies), mechanized our work (manufacturing economies), re/generated life itself (living economies), distributed our wealth, regulated our political participation, and a myriad of other things.

Clearly, design affects every detail, of every aspect, of each part, of every person’s life. Characterized in this way, it is a fundamental facet of what it means to be human. It is our creative response to a deep and persistent tension that exists between
our finite human nature and our aspirations to achieve what we truly desire. The successive resolution of this tension, at scale and over time, has produced the built environments, objects, communications, processes, systems and organizations that make our modern lives possible. Design has also produced the great follies of our age: climate change, pollution, overpopulation, resource warfare, technological overdependency, and the lopsided division of power that has failed to resolve poverty, ignorance, and social dysfunction.

In the educational context wherein I worked I was an active agent in the institutional design of the university’s life and I personally experienced the creative tension between human aspirations and the reality of the institution’s status quo. In some instances I experienced the resolution of this tension. Notably, I participated in and witnessed, the development of new systems, processes, and associated practices. Not surprisingly, some solutions to old problems created new ones. Consequently, I also witnessed and regrettably contributed to a few institutional follies, producing designs that unfortunately constricted people’s learning and teaching.

1.2. Designing Between Two Worlds

While my professional work as a website architect was initially concerned with the university’s public facing presence, over a ten year period my work shifted ever closer to the site of interaction between the professing expert scholar and the studious novice scholar, or put colloquially, the teacher-student relationship. I began by designing at the outer reaches of the educational experience and layer-by-layer I worked my way toward its heart—the lived experiences of the student and teacher relationship. I began my journey as a designer designing web pages, then, I moved to designing systems that managed these web pages, and ultimately I designed web systems to manage courses and the learning interactions within them. In tandem with my evolving work as a web architect, I also began teaching an undergraduate course in digital communication design. My initiation to this new role as university professor was, subsequently, followed by an opportunity to design and teach three new communication design courses. This course design work expanded into an opportunity to design an entire design program. Having been educated first as an artist, then, having developed competency as a
designer through the experience of professional practice, it was actually through my designing a design program that I came to theoretically understand design. Mine was an interdisciplinary understanding of design as my program design interpreted design practices broadly and sought to integrate design thinking common to all practices. It was also an understanding of design that viewed my curriculum making as a design act.

Given the financial crisis of 2007–2008 the program, which I developed was never realized. However, the experience I gained in curriculum design led me to a new position at the same university where I helped implement and refine an emerging adult degree completion program—a B.A. in Leadership. In this latter role I served as both a practicing teacher and an emergent curriculum designer in a Reggio Emilia pedagogista-like fashion. I regularly taught a few courses, while also working with other faculty to develop and continually improve all the other courses in the program, and I provided overarching guidance to the further development and refinement of the program as a whole. Beyond these academic concerns I was part of the design team responsible for the marketing, development, and delivery of the program at various sites in Western Canada, the U.S., as well as for international students from the Asian Pacific region.

What is unique about my story is that, on the one hand, I had the opportunity in my work as a teacher to play a role in the development and operation of nearly every part of the institutional context where I taught. On the other hand, as my time spent in the teacher’s role also increased, I found that my “being” was being split apart. That is, the more connected I became to the work of the teacher-student relationship the more clearly I felt myself standing between two worlds: the system-world and the life-world (Habermas, 1984). Or, as Aoki (1986/2005) clearly describes my situation in curricular terms, “the worlds of curriculum-as-plan and curriculum-as-lived-experiences” (p. 159).

I entered the world of university educator as an artist who had become a designer, operating in the context of what Pinar et al. (1996, p. 661) labeled “curriculum as institutional text” (chap. 13). My initial perspective was from the system-world of the curriculum-as-plan—the institutional rationalization of study and teaching commonly described by four kinds of curriculum artifacts: intents or objectives, activities, resources, and evaluations. The origin of these technological artifacts, as Aoki (1986/2005)
observed, were often outside the study/teaching situation. And my work as curriculum planner, both as subject matter experts and/or teachers, often operated at a higher level than the study/teaching situation within the education system I, in part, helped devise.

My initial approach to teaching was as a professional subject matter expert. As expert, I imposed my expertise onto my curriculum, and subsequently onto the lived experience of my students and my own lived experience as the teacher. As a subject matter expert my curriculum designs acted as a system-world—that is, a technical-rational world of expert ideas that were “penetrating and insistently present” in my own study and teaching situation (Aoki, 1986/2005, p. 159). Consequently, as the teacher in the institutional system-world I created, I found myself increasingly bound to acts of instrumentalism, as the “[doer]” or “[installer] of the curriculum” (p. 160). Fortunately, my own acts of instrumentalism remained informed by my other world. That is, my lived experience as teacher talked back to myself as a curriculum designer in an institutional way. As a designer I instituted a constructed world, but I was a designer informed by my education as an artist and art educator who was both exposed to and had internalized a critical theoretical approach to contemporary art practice; thus, I would deconstruct my own system-world of curriculum design that I brought forth.

My back talk as teacher to myself as designer emerges from the life-world of curriculum-as-lived experience—the course of my life. This is the world of my life story, the life stories of my students, and the histories of our lives, which is located in our shared life-world as students and teacher. This life-world of curriculum is the horizon within which human being, knowing, acting, and making occurs. It is the situated world that I, as teacher, and my students as learners, experience. It is a world of uniqueness, diversity and texture, where the names and faces, needs and wants, dreams and worries, are all known from my having lived with the people who embody them.

Curriculum understood in life-world terms is a life fabric and a weaving of lives within socio-cultural worlds. It is the taken-for-granted reality that we all experience as the symbolic backdrop of our lives, “into which school subjects are projected, regardless of whether [I was] mindful of it” (Efland, 2002, p. 122). However, what I discovered was that when I was not mindful of this world, its uniqueness “disappear[ed] into the shadow”
(Aoki, 1986/2005, p. 160). When as a designer I was not mindful of my life as a teacher I found that I began to speak of my students in the prosaically abstract technological design language of an “external curriculum [designer] who [was], in a sense, condemned to plan for faceless people, students shorn of their uniqueness” (p. 160). In those moments I made myself and future teachers bound to my course designs “generalized entities” whom I had economically defined “in terms of performance roles” (p. 160).

In my own making of programs, courses, and learning experiences, I made curriculum worlds, and they made me. Both worlds had a hold on me. I experienced the indwelling between these two worlds that Aoki (1986/2005) describes. I found myself in the strange position of being the designer of the system-world(s) against which my life-world stood. As a naïve curriculum designer, only later did I see the consequences of my initial designing, as a designing that goes on designing. My lived curriculum making and implementing experience was akin to that of an urban planner given the rare opportunity to set a city’s initial master plan, and then, who continues to design and live within the establishment of his or her own master plan. Once set, the master structure (like a city’s grid) became the context for all other designing. I could still imagine alternate redesigns, but these new designs often became even more problematic. The danger that I encountered in the course of my design experience was that “creation is ever co-joined with destruction” (Fry, 1999, p. 52). That is, in all making some ground must be cleared. What became problematic with my designing between worlds was deciding what is conserved, what is destroyed, and what emerges from the ground that is cleared?

1.3. The Question Concerning Curriculum Design

What is the nature of the ground that I found myself clearing as a curriculum designer? It was the discursive world of language. Pinar et al. (1996) make a convincing argument that educational experience—what the authors view as the social relatedness of the human life-worlds of students’ study and teachers’ teaching—is inscribed by language. Conceptualized in this way, educational experience may therefore be seen as discourse, involving “specific language systems and traditions which have specific histories and political legacies” (Pinar et al., 1996, p. 32). And, curriculum so conceived may then be understood as text. Curriculum as text, here, “implies both a specific piece
of writing and much more broadly, social reality itself” (p. 48). In short, this notion of “text implies that all reality is human reality, and as human reality, it is fundamentally discursive, a matter of language” (p. 49). Following this logic, I suggest that we might also describe design, including curriculum design, as discourse.

Pinar et al. (1996) characterize the discursive nature of the contemporary field of curriculum studies as “an extraordinarily complicated conversation” (p. 848). My introduction to this complicated characterization of the historic curriculum conversation came through the authors’ comprehensive synopsis of the field’s North American developments in, *Understanding Curriculum: An Introduction to the Study of Historical and Contemporary Curriculum Discourses*. This book encompasses the American historical discourses from 1828 through to 1979, then, in a somewhat historical but generally topical sequence considers the diverse spectrum of contemporary discourses, including curriculum as political, racial, gender, phenomenological, poststructural, deconstructed, postmodern, autobiographical/biographical, aesthetic, theological, institutional, and international texts. While largely representative of the diverse re-conception of curriculum by the group of scholars referred to as the re-conceptualists, I found their notion of curriculum as institutional text to be insufficient. The authors do make an initial re-conception, redefining the world of curriculum design as discursive, but beyond this move they do little to re-conceptualize the design of these discourses. Indeed, the contemporary curriculum field has done little to problematize our understanding of design and to articulate a principled approach to designing curriculum.

What are curriculum design discourses? Pinar, et al. (1996) describe them as institutionalized text—“a general category [that may be] understood to have the following aspects: 1) curriculum policy, 2) school reform, 3) curriculum planning, design, and organization, 4) curriculum implementation, 5) curriculum technology, 6) curriculum supervision, and 7) curriculum evaluation (p. 664). Moreover, it is also a conceptual category that includes discourses on: “1) pedagogy, 2) preservice teacher education, 3) teacher development, and 4) textbooks [and educational media]” (p. 664). In sum, curriculum as institutional text is defined by Pinar, et al. (1996) as “understanding curriculum as it functions bureaucratically” (p. 661). The consequence of this particular understanding of the institutional text is that only bureaucratic questions are said to
arise, which include: “does the curriculum work? How can it fit the institution? Will the school function more smoothly and efficiently? How do we measure success?” (p. 661). Having arrived to the study of curriculum by way of my experience as a designer bound to the context of my institutional life, I acknowledge and agree these are characteristic of the sort of questions often asked in the system-world of the educational enterprise.

What I find problematic about this account is that it remains a technical rational description of what is understood to be a technical rational phenomenon. I do not disagree with this reframing, but my difficulty is that the technical aspects of curriculum are dismissed by reconceptualists, such as Pinar, et al. (1996), and has not been deeply renewed as richer discourses. If we interpret the educational institution, its design, and its designing acts, according to a post-structural framing as text (that is, discourse that forms reality), more radical questions may be posed: How does the institutional text come to be? How does it act in relation to the life-worlds of learning? And, how might its inscriptive power be redirected by the array of reconceptualist discourses?

Grimmett and Halvorson’s (2010) review of Understanding Curriculum¹ raises this alternative line of questioning. The authors acknowledge that Pinar et al.’s (1996) reframing of curriculum development as institutional text was in itself an important semantic turn, recognizing the structuring agency of institutional discourses on the life-worlds of students and teachers. Moreover, Pinar et al. clearly do acknowledge that curriculum as institutional text remains an important part of the field. They also suggest that institutional discourses have been influenced by the legacy of the re-conceptualists. Nevertheless, I contend this initial re-conception reflects a missed opportunity within the curriculum field to meaningfully reframe the relationship between understanding curriculum and creating it. In short, a reconceptualization of curriculum design is needed.

I shall argue that curriculum as institutional text is a designation, a sign making that acts in and upon the life-world of students and teachers. It is a system-world generated by, and for the purposes of, the life-world. For the life-world and the system-world necessarily stand in relationship to each other, the life-world resourcing the

¹ This article was a preview of this conceptual work, which I have elaborated upon in this study; both draw upon common pre-published source materials generated in my doctoral studies.
system-world and the system-world supporting the life-world. The system-world emerges as a rationalization of the life-world, arising in service to the interests of the life-world. That is, the system-world’s institutional projection of curriculum-as-plan onto the everyday situation of the life-world of student’s study and teacher’s teaching serves to designate educational action: the ends of what shall be taught and the means of how. However, such designated forms of educative action do not always have a good fit with the context of the lived learning situation, or vice versa. Consequently, the system-world may act to enclose the life-world, restricting life within the life-world. In this way, the system-world becomes de-coupled from the life-world. The significance of this insight is that it raises a fundamental question concerning the nature of curriculum design: What is design that it might at once support and destroy the life-world from which it emerges and which sustains its very existence?

One response to this question is to try to disconnect from the system-world that one has created. In curriculum terms, one could simply declare curriculum design as dead and shift one’s focus from the problem of making curriculum to the problem of understanding curriculum through the lives of students and teachers. This is the approach to the question that, collectively, has been described by some as the reconceptualist movement in the curriculum field. By Pinar et al.’s (1996) account, curriculum development was born in 1918 and died in 1969. The authors suggest the era of master planning in the curriculum field came to an end prior to the 1950s—at least in the North American context—and that theorizing about curriculum had become stagnant and morbid, as Joseph Schwab (1969) argued in “The Practical: A Language for Curriculum”. The implication was that curriculum specialists, bound to the institutional context, had been reduced to mere technicians. Consequently, the conceptual move by reconceptualists—as summarized and modelled by Pinar et al.’s (1996) Understanding Curriculum—was to shift the field from a focus on curriculum development, including design, to an intellectual interest in understanding curriculum more broadly.

Another response to this question is to simply ignore it. That is, to remain embedded in the system-world of the institutional text and to ignore the specificity of its connection to the lived experience of those for whom it was created and who sustain it. As one who has worked in various university administration roles, I can attest to the fact
that the system-world possesses a powerful pull on people. It is generally much easier to conform to the system’s rules, and to serve your function within it. However, my study of design and my experience designing curriculum in the institutional context, has demonstrated to me that design as discourse has rich and diverse possibilities.

I shall argue for a third way, to live in the midst of the creative tension generated by the gap between the life-world one experiences and the system-world one creates. As an exploration of this direction, this study seeks to describe and interpret the lived experience of the curriculum designer, living in this creative tension. It is an autobiographical study of my own conceptual development as a designer and teacher, and curriculum designer. My primary question: What is the lived experience of the curriculum designer's conceptualization of curriculum design? And, in the second place: In the wake of his exposure to re-conceptualized curriculum, what is his re-conceptualized understanding of curriculum design? What I plan to show is that understanding the lived experience of the curriculum designer leads to a re-conceptualization of curriculum design.
Chapter 2.

The Study of Educational Experience

My study, as a study of design discourse, involves reading. Rorty (1997) suggests, “virtually all we do involves reading” (p. 85). That is, we read “faces … gestures … the architecture of buildings, the design of a classroom, the style of a haircut … the rituals of religious services and university commencements” (p. 85). In each of these situations, and others, we make interpretations about what we read and we are affected by our interpretations. A critical implication of this distinctively human characteristic is that “what we read affects what we become” (p. 85). It logically follows that we might understand what we have become by tracing backward what we have read. Similarly, we might gain insights into what we are becoming, by considering what we are now reading.

This study investigates design discourse, specifically, in terms of my conceptual development as a curriculum designer, and my experience designing curriculum, by way of my own autobiographical subject matter as my data. In seeking to understand my own biographic situation, my method begins by tracing backward what I have read and the meanings I’ve made. Then, as a consequence of this reading of my past, my autobiographical data expands to include my reading of my present reading—that is, the interpretations I’m now making, and how I’m affected by my present meaning making. This second reading further expands the scope of my autobiographical data to include my present reading as latent potentialities arising from my interpretations.

My methodology and the phenomenon of my inquiry are co-joined. Put simply, my study is of my thoughts on what I think. Or, to elaborate on this statement slightly, it is my conscious articulation of my consciousness. The subject matter of my inquiry—that is, my autobiographical experience and interpretations—folds back upon itself. As Doll
(1993) argues, “such looping, thoughts on thoughts, distinguishes human consciousness; it is the way we make meaning” (p. 177). Given that my consciousness as a curriculum designer is the subject of this study, my conceptualization of this study in terms of its method is itself an act of my conscious designing, thus, becoming part of my subject under study. The implication is that the following is not merely my method, but is also my initial conceptualization of designing—that is, it is a conceptual prototype.

2.1. A Preliminary Sketch

In the world of design prototyping refers to the first form the designer articulates in the working out process of design intent. In visual design terms it is a sketch—a rough and unfinished approximation of a possible final form. This chapter is a conceptual sketch. It is the beginning of a study into the lived experience of the curriculum designer, and for its author—being also the subject of this study—it is a self-reflexive beginning. Not a beginning *ex nihilo*, but a creative transition arising from my initial exploration, where the old still largely evidences itself in the new. It is like an ending that shifts into a beginning. Not a transcendence, but rather a perspectival displacement. Like an artist seizing hold of a new subject I am attempting to let go of my prior perspective, and take a shaky step toward an unknown view. The nature of my shaky step is to make a systematic study of self-reflexivity within the processes of curriculum design. This is a shaky step, taken with a faith-like leap into a world that is both familiar and disorienting.

As a reading of my world of reading, my method may be understood as the tracing of my personal history of thoughts within the broader context of other’s histories tied to those thoughts. It is an idiosyncratic reading of, first, the history of my experiences, and second, my reading of curricular and design histories as conceptual discourses that affected what I have become as a curriculum designer. What I have in mind, here, draws upon as inspiration the genealogical method of historical study, as typified by Foucault’s (1977/1995) *Discipline and Punish*. Following Foucault, rather than taking a view of history in linear chronological terms, I take a genealogical view of history as a “record of emergence” used to “trace out several strands of simultaneous happenings” (Davis, 2004, p. 3). However, the subject of study in my case is my own lived experience. Before I articulate the particulars of this record of emergence, I shall
address the nature of the phenomenon in question. That is, the nature of experience and its educational characteristics.

2.2. Experience and Education

What is experience? In the broadest sense, experience is a personal lived encountering, or undergoing, of some event. In this way, I might say that I have experienced Taekwondo—a Korean martial art, which I once studied. Accordingly, I might describe my experience as the physical sensations going on in my body and also my perceptions of what is going on in the world. My experience in this case may be considered beyond the mere physical, and includes the emotional, cognitive, volitional, spiritual, or in any of number of other characterizations of human nature. Experience also denotes a form of knowing. In this sense, I might say that I have experience in Taekwondo. Conceptions of experience as knowledge span a diverse spectrum of ways of knowing from empiricism to existentialism. Given that the focus of my study is my own conceptual development I shall expand upon this latter notion of experience.

Experiential knowledge is commonly assumed to be procedural rather than propositional. In keeping with this line of thinking, Dewey (1915) states, “no book or map is a substitute for personal experience; they cannot take the place of the actual journey” (p. 255). Dewey’s statement echoes the oft-quoted Chinese proverb by Xun Zi: “Tell me and I will forget. Show me and I may remember. Involve me and I will understand.” However, this is a limited understanding of experience as Dewey (1915) goes on to clarify, “learning by doing does not, of course, mean the substitution of manual occupations or handwork for text-book studying” (p. 255). His point, here, is that the studying of texts is also an “experiential learning” activity. In short, experiential knowledge is both procedural and propositional in nature. What is important to our present discussion is simply the fact that, clearly, we learn through experience—our own and the experience of others, through direct observation and conversation, and indirectly through mediated forms, notably written texts. Now, the question arises: What is experience that we may say we learn through it? That is, what is educative experience?
According to Dewey (1938), learning through experience arises from the interaction of two essential principles—continuity and interaction. Put briefly, continuity refers to Dewey’s idea that each experience that I have will influence, in some way, my future experiences. Interaction, then, expresses Dewey’s idea that there is a relationship between my past experience and my present situation. One influences the other.

Elaborating on Dewey’s (1938) first idea, he writes that continuity of experience “means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after” (p. 35). The implication here for how I understand experience in terms of this study is that every experience I enact or undergo modifies me as a person, and this modification (whether I like it or not) affects the nature, quality and direction of my subsequent experiences. Thus, I might speak of myself growing, or developing, not merely physically, but intellectually, morally, and so forth. Dewey's idea of growth expressed within his principle of continuity also suggests direction, or ends. For instance, I might say that I “grow” to become an expert (in something). Indeed, the words “expert” and “experience” are both derived from the same Latin verb (meaning “to test, or to prove”). And, by expert, my understanding is that we commonly mean one that is tested and/or proved by experience. Thus, what I’ve become is a consequence of my experience.

Regarding Dewey’s (1938) second idea, what is important to understand is that my experience is something both internal to me, shaping my attitudes, desires, purposes, understandings, and knowledge, and it also has an active side that “changes in some degree [my world within] … which [my] experiences are had” (p. 39). As Dewey (1916/2004) writes elsewhere, “when we experience something we act upon it, we do something with it; then we suffer or undergo the consequences” (p. 133). Dewey suggests that I act within a world and my world acts upon me. In short, the principle at play here is what Dewey (1938) describes as the interaction of experience, which means that “an experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment” (p. 43). Here, environment refers to “whatever [external] conditions interact with personal needs, desires, purposes, and capabilities to create the experience which is had” (Dewey, 1938,
p. 44). Simply put, my experience involves my interaction with the world of my experience—I make this world, and it in turn makes me.

Taken together Dewey (1933/1998) describes these two aspects of experience—continuity and interaction—as a learning situation. They “intersect and unite,” as a learning process wherein “as an individual passes from one situation to another, his world, his environment, expands or contracts” (p. 44). Upon encountering a problematic learning situation, Dewey (1916/2004) states, “we simply do something, and when it fails, we do something else, and keep on trying till we hit upon something which works, and then we adopt that method as a rule of thumb measure in subsequent procedure” (p. 139). Dewey (1933/1998) breaks this process down into four parts:

1) an initial impulse (an unreflective desire to act),
2) observation (“of surrounding conditions”),
3) knowledge (“of what has happened in similar situations in the past, a knowledge obtained partly by recollection and partly from the information, advice, and warning of those who have had a wider experience”), and
4) judgment (“which puts together what is observed and what is recalled to see what they signify”) (p. 69).

The value of my experience resulting from this trial and error process is subsequently judged according to the positive or negative effect it has on my present and future. Negative feedback necessitates the correction of an error, and positive feedback accelerates a continued deviation from what was previously known.

Thinking, which Dewey (1938/1963) defines as “a method of reconstructing experience” (p. 141), is at the heart of learning. As a reconstructing of experience, Dewey (1916/2004) describes thinking as “the discernment of the relation between what we try to do and what happens in consequence” (p. 139). The essence of his argument here is that as the details of the connections between our activities and what happens in consequence are made more explicit, the quality of our experience changes. Indeed, Dewey suggests, “the change is so significant that we may call this type of experience reflective—that is, reflective par excellence” (p. 139).
Reflection is an activity in which people “recapture their experience, think about it, mull it over and evaluate it” (Boud, Keogh, & Walker, 1985, p. 19). For Dewey (1933/1998), reflective thinking is an “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends” (p. 118). Echoing Dewey’s learning process, reflective thinking involves: “1) a state of doubt, hesitation, perplexity, mental difficulty, in which thinking originates, and 2) an act of searching, hunting, inquiring, to find material that will resolve the doubt, settle and dispose of the perplexity” (p. 12). Refined as a scientific-like method, Dewey (1933/1998) suggests five phases to reflective thought:

1) Considering the challenge or difficulty (that is, arresting acting directly)
2) Defining of the difficulty under consideration.
3) Suggesting possible solutions (that is, ideation or brainstorming).
4) Developing by (sound inductive and/or deductive) reasoning the possible solutions selected from the alternative suggestions.
5) Rejecting or accepting the solution(s), based on actual, observable results.

Grimmett (1988) builds on Dewey to suggest that reflection results from perplexity in a directly experienced situation that precipitates purposeful inquiry and problem resolution leading to future actions being inferred from past experience, culminating in a re-framing of current action settings. Doll (1993) adds that reflection is a critical and creative thinking process, which “reconstruct[s] … actions taken” and “re-look[s] at meanings made” (p. 141). The implication of Dewey’s reflective thinking model is that knowledge formation may be understood as a constructive process. That is, I “construct” my own meaning by building on my prior experience and knowledge. The notion of constructed knowledge here implies by logical extension of the construction metaphor a guiding design intention. Indeed, Dewey’s conception of reflective thought represents one form of a pragmatic conception of the design process as problem solving. Putting aside this comparison for the moment, what is important to the present discussion is the nature of this constructed meaning. While the genesis of human knowledge, and thus learning, lies in experience, Kant famously argues it is made complete by what we do with that experience. Similarly, the psychologist Adler (1931) observes, “we do not experience pure circumstances … we experience reality always through the meaning we give it; not in itself, but as something interpreted” (p. 3).
Moreover, he adds “that this meaning is always more or less unfinished, incomplete; and … never altogether right” (p. 3). In sum, I make incomplete meanings in the context of a world of ready-made, but incomplete, meanings.

Reflection is an act of conceptualization. That is, it involves concepts. Schön (1963) writes, “there are no observations, data, perceptions, objects, independent of concepts. We cannot even name things without giving clues to the concepts which make ‘things’ of the situations confronting us” (p. 8). In addition, no one concept exists in isolation. As Kuhn (1962) argues, concepts are theory-laden. For instance, our idea of “curriculum” carries with it and depends for its meaning upon our ideas of teaching and learning, and also on our ideas of education and of knowledge. In short, our concepts exist as clusters of interrelated concepts. Our conceptual systems of understanding the world and coping with its challenges have inertia, which over time gives much of our thinking an immutable quality. Schön (1963) observes, “once having resolved a problematic area of experience, having found a way of looking at (and therefore dealing with) a situation which was at first novel and puzzling, our impulse to stick with it is overwhelmingly powerful” (p. 8). The significance to our discussion is, as Schön writes, “while a given situation can be conceived in a variety of ways, it is always a concept-structured situation” (p. 8). Each concept-structured situation is a historical consequence of the socially constructed nature of knowledge. Understanding the evolution of concepts is important, because it is central to our learning.

Learning involves an interaction with new concepts. Either as something entirely new to human history, or something new to the person experiencing a particular learning situation. Following Charles Peirce’s definition of error—“treating different things as though they were similar or the same things as though they were different”—Schön (1963) writes, “coming to form a new concept involves in several ways making a mistake” (p. 26). The formation of new ideas involves juxtaposition of old ideas to a new situation. That is, we tend to see the new through the lens of the old. Trying to make sense of a genuinely new situation with our old ideas leads us to make conceptual errors. To begin with, when we form a hypothesis (even a scientific one) we often make numerous mistaken assumptions, which we, then, (systematically, in the case of the Dewey’s reflective thought process) test and correct through experimentation. In the
second place, our use of old concepts to make sense of new situations, often leads to novelty. That is, in our frustrated attempt to subsume the new under the old we come to new understandings of the new, with the old acting as a metaphorical symbol of the new.

In this process the old is not applied to the new situation, as a concept to an instance, but is taken as a symbol or metaphor for the new situation. The new concept grows out of the making, elaboration and correction of the metaphor. There is no one point at which it emerges since the process is continuous, like the emergence of a biological species, and its freezing at any point is always arbitrary. (Schön, 1963, p. 53)

The significance for this study of curriculum design is that I cannot ever speak without speaking metaphorically. The words of our spoken languages are symbols of their meanings—the signifier of a signified. The word “metaphor” is itself metaphorical in terms of its Greek origin, meaning “to transfer” or “to carry over.” Similarly, the word “curriculum” begins as a Latin term, with the primary meaning of “a running” or “a course,” and a secondary meaning of a “race-course,” which Cicero metaphorically uses to describe his intellectual pursuits as his “courses” of study. Likewise, the word “design” comes to English from the Latin word designare, meaning “to designate,” which in turn is based on signum “a mark.” Here, design begins metaphorically as a mark making designation of something to be made, such as, the making of a blueprint for the construction of a building or machine. Over time the metaphorical richness of words is lost, as concepts evolve and the new displaces the old. Nevertheless, the symbolic building material of language continues to be used by our symbolic minds to relate different things and processes, as we come to understand our world and cope with its challenges.

In writing, “In my own making of programs, courses, and learning experiences, I made curriculum worlds, and they made me” I am metaphorically conceptualizing my lived experience as a curriculum designer. Moreover, I am drawing upon Aoki’s (1986/2005) metaphorical conceptualization of the lived experience of the teacher as an indwelling between two worlds, and his drawing upon Heidegger’s (1962) concept of “dwelling” and Habermas’ (1971) tri-classification of knowledge. Building upon Aoki’s use of Habermas, I am also metaphorically projecting the structure of Habermas’s (1984)
metaphors of social order—as life-world and system-world—onto Aoki’s worlds of lived curriculum and curriculum-as-plan respectively. Conceptual linkages I shall revisit later.

In *The Body in the Mind*, Johnson (1987) argues that the metaphorical conceptual structuring of our experience is not merely figurative, but is itself experiential. Commenting on Johnson’s insight, Brann (1991) observes, metaphors are “extensions or elaborations or projections of image schemata and are thus constitutive of experiences” (p. 152). Simply put, we not only understand our experience metaphorically, but we actually experience metaphor. To illustrate, Brann describes the metaphor of balance as experienced in a visual composition such as “in a drawing of a black dot within a frame” (p. 152). She suggests, “we experience balance in terms of a schematic metaphor, on the analogy of visually apprehended weight and force” (pp. 152-153). Moreover, she argues this projection “structures not only visual perception but our understanding of rational processes such as the logical notions of symmetry, transitivity, and reflexivity” (p. 153). Similarly, there existed an experienced metaphorical projection of curriculum as a course of study and design as a designation upon the life-worlds of the student and teacher that structures the lived experience of study and teaching.

What makes experience educative is best explained through metaphor. Thus, metaphorically speaking, “when [we] designate an experience as educational, [we] imply that its effect upon its subject transcends the immediate encounter; its season passed, a spore remains and grows roots in the psyche, bringing forth new vegetation, nurtured by that singular, inimitable soil” (Grumet, 1975, p. 4). Here, through her lovely organismic metaphor Grumet argues that one’s “encounter with the world is a generative act, spawning experience, a hybrid of objectivity and subjectivity, whose very birth modifies and extends and finally transcends its inheritance” (p. 4). By distinguishing our “consciousness of external reality” from our “awareness of immanent objects” (p. 10) Grumet designates experience a thing to behold. She, then, uses art metaphorically to project onto educational experience her concept of its hybridity of objectivity and subjectivity; writing, “just as art requires the imposition of subjectivity upon the objective stuff of the world, and is embodied in that stuff, in its materials, forms and limitations, so education requires a blending of objectivity with the unique subjectivity of the person, its infusion in the structures and shapes of his psyche” (p. 4). Following Grumet’s
description, my conception of educational experience is the socially constructed metaphorical structuring of an objective world, upon which I impose my own idiosyncratic subjectivity, which this world, then, embodies. The implication for this study is that “education” as experience “emerges as a metaphor for a person’s dialogue with the world of his experience” (p. 4). The implication of this understanding is that this dialogue is both what I seek to study and how I seek to study it. My theorizing about the nature of this dialogue is where our discussion now turns.

2.3. The Study of Experience

Casting its shadow on my dialogue with my lived experience as a curriculum designer is the broader question: What is curriculum designing anyway that I might be a curriculum designer, whose lived experience I might, then, study? Moreover, how might my study be a re-conceptualization? My immediate concern is not to explore these two related questions as stated, but rather to consider my orientation to them. As Aoki (1992/2005) observes our typical understanding of this sort of question is to emphasize the “whatness” of the question, in this case, the whatness of re-conceptualized curriculum designing (p. 191). However, to borrow Aoki’s words, “I wish to ask the same question differently, unavoidably making the it a different question. I ask: What is [re-conceptualized curriculum designing]?, emphasizing the ‘is’” (p. 191). This new question orients my inquiry towards a deeper understanding of the essence of re-conceptualized curriculum designing. That is, it places me in the presence of the beingness of re-conceptualized curriculum designing—a being-in-the-world of the re-conceptualized curriculum designer and his presence with teachers and students. “This presence, if authentic,” as Aoki notes, “is being” (p. 191). Moreover, drawing upon Aoki’s re-conceptualized understanding of teaching, re-conceptualized curriculum designing “so understood is attuned to the place where care dwells, a place of ingathering and belonging, where the indwelling of [curriculum designers,] teachers and students is made possible by the presence of care that each has for the other” (p. 191).

Aoki’s (1992/2005) notion of “place” implies that my study of experience is the study of a world, not merely the study of an activity. Pinar in (Pinar & Grumet, 1976) observes that in curriculum we have often used the word “experience” to refer to activity.
However, in keeping with Aoki’s insight Pinar suggests the German *Lebenswelt* is more descriptive. “*Lebenswelt,*” Pinar writes, “translates as ‘lived experience’ and suggests in English a life-world” (p. 18). The life-world frames my educational experience as a “private existential experience” (p. 18). This concept is of paramount importance, because “curriculum reconceptualized is *currere*; it is not the course to be run, or the artifacts employed in the running of the course; it is the running, is our experience of our lives” (p. 18). Building upon this curriculum metaphor, my move to understand reconceptualized curriculum design is to study it as *currere*. And, it is *currere* as a method of understanding educative experience that will give my study its structural form. However, before I address *currere* as method, I shall consider its conceptual context.

To understand curriculum designing as *currere* is to step into the world of my lived experience as student, teacher and designer. It is an approach that draws upon “phenomenology's emphasis on the reciprocity of subjectivity and objectivity in the dynamic constitution of human knowledge” (Grumet, 1975, p. 5). That is, it takes a view of “knowledge of the world [that] requires knowledge of self as knower of the world” (p. 5)—where objectivity and subjectivity are each realized through the other. This conception of consciousness begins with the work of Edmund Husserl (1970).

Husserl—along with Martin Heidegger, Jean-Paul Sartre and others—developed phenomenology as a study of the structure of human experience, or consciousness. As is implied by the term, phenomenology is literally the study of “phenomena,” or more precisely defined the study of things as they appear to exist or happen in our experience, along with the way we experience these things, and also the meaning of these things in our experience. According to Smith (2013), “phenomenology studies the structure of various types of experience ranging from perception, thought, memory, imagination, emotion, desire, and volition to bodily awareness, embodied action, and social activity, including linguistic activity” (para. 8). All these experiences, which present themselves to a person’s consciousness refer to the objects, events, the flow of time, the self, and others which are being perceived, remembered, judged, believed, or imagined.

Husserl’s understanding of human experience is characterized by intentionality. Here, intention is not limited to aspirations or aims, but includes any aspect of
experience one directs one’s mind towards. Thus, in phenomenological terms, it is equally correct for me to say, “I intended to become a teacher” as it is to say, “I intended my talk as a lecture.” The former refers to a goal I once set, whereas, the latter refers to a phenomenological way of saying that I once directed my mind toward a talk I gave by thinking of it as a lecture. Consciousness for the phenomenologist, as Greene (1973) observes, “is always of something—something which, when grasped, relates to the act of consciousness involved as the meaning of that act” (p. 131). Through the concept of intentionality in our understanding of experience Husserl has established a paradoxical intellectual tension, wherein, “we distance ourselves from our experience in order to come closer to it” (Grumet, 1975, p. 5).

Husserl divides his notion of the intentionality of experience into three parts: intentional act, intentional object, and intentional content. He defines the intentional act as the mode of thought—perceiving, remembering, reflecting, evaluating, believing and so forth—involved in one’s experience. The thing, state of affairs, or topic this act is about is the intentional object. While these two parts are clearly correlated, they are also distinct from each other. For instance, my experience of recalling a quote can be analyzed in terms of its intentional act, my mental remembering, and in terms of its intentional object, a quote. However, my same intentional act of remembering could be directed at something other than a quote, such as, my remembering my childhood house or my remembering my first grade teacher. Similarly, my different directional acts could be directed at the same object, such as, reading a quote or reflecting on a quote. In addition to my intentional act that is directed at a particular object, my experience is further characterized by the intentional content that my life-world brings to it. As Spear (n.d.) explains, Husserl’s:

idea here is that a subject does not just think about an intentional object *simpliciter,* rather the subject always thinks of the object or experiences it from a certain perspective and as being a certain way or as being a certain kind of thing.

Thus, in my experience of a quote, I don’t think about it in unconditional terms, rather I bring my particular perspective to my experience; thus, this quote might “sound poetic” or “be believable” to me. The intentionally of experience will become significant to our discussion of design, because at the heart of design is one’s attitude of intent.
Our “experienced context” (Greene, 1973) is what Husserl calls a life-world, which is his framework for describing how we understand our individual experience in relation to our world and the world we share with others. Put simply, “each person’s life-world is his context as he experiences it” (Greene, 1973, p. 131). Husserl (1970) defines the life-world as our “everyday surrounding world of life” (p. 104) where we are both objects “being here and there, in the plain certainty of experiences, before anything that is established scientifically” (pp. 104-105) and “subjects for this world ... experiencing it, contemplating it, valuing it, related to it purposefully” (p. 105). Conceptually, in a move against positivism, Husserl uses the life-world to contrast the pre-theoretical world of everyday lived-experience with the theoretical, objectifying, rationalization of the world with a scientific type of knowing. He observed the significance of things that arise and are experienced in one’s life-world,

has only ontic meaning given to it by our experiencing, our thoughts, our valuations, etc.; and it has the modes of validity (certainty of being, possibility, perhaps illusion, etc) which we, as the subjects of validity, at the same time bring about or else possess from earlier on as habitual acquisitions and bear within us as validities of such and such a content which we can reactualize at will. (p. 105)

This ontic meaning—our already prescribed (and generally unreflected) notion of what is there—describes the meaning and legitimacy we give to the lived reality of our everyday practical life. It is, in Husserl’s terms, the “natural attitude” we adopt. One implication for my theorizing is that the designer’s intent arises from this attitude. However, at this point in the discussion I shall not elaborate further, I merely want to identify the link.

Because we are immersed in the natural attitudes of our daily taken-for-granted practical life, we are most often unaware of our life-world. And, we assume the constancy of its structures, which surround us. However, there are limits to these attitudes. “The edges and boundaries of this attitude,” write Pinar et al. (1996), “constitute the locations of our self-reflexivity, or consciousness, necessary in order to reflect on or, in phenomenological terms, ‘bracket’ the taken-for-granted” (p. 406). That is, at our life-world horizon, sometimes, the taken-for-granted becomes problematic. “To solve this problem, whether of a practical or theoretical nature,” writes Alfred Schutz
(1966), “we have to enter into its horizons in order to explicate them” (as cited in Greene, 1973). In this way, to “bracket” means to suspend our ordinary ways of perceiving and interpreting our experience. In so doing, we become aware of our own perceptions, and we recognize the way in which we have constituted our own life-world (Greene, 1973, p. 132). In this study, my use of currere is “a method that will allow [me] to ‘bracket’ the educational aspects of [my] taken-for-granted world”—a way to “attend to the contents of [my] consciousness as they appear” (Pinar, 1975a, p. 406).

The life-world boundary is metaphorically described as a horizon. In visual terms, a horizon designates the limit of one’s field of vision. Its central metaphorical significance is that one can never comprehend one’s visual world all at once. That is, one can never see the whole horizon in one view, because one can only ever see in a single direction at a time. One’s visual experience is always from one’s particular momentary perspective, meaning one’s horizon is dynamic; a boundary limit that is always changing—both revealing and concealing little by little—as one moves. In life-world terms, the phenomenological notion of the horizon is extended to include one’s perception of all manner of lived-experience, including one’s everyday social encounters with other people. And by analogy it describes how one’s life-world experiences form a unity, but not a totality. That is, any part of one’s life-world can be brought into view, or made the subject of consideration, but never the whole at once.

The contents of one’s life-world—the meanings and understandings that constitute one’s natural attitude—are open to constant revision and change. In fact, it is possible that every part of one’s life-world can be revised or replaced. In educational terms, Greene (1973) describes the life-world as a life “project” (p. 285) where students “impose increasingly complex orders upon their worlds” (p. 70). The role of the teacher in this life project is to “intend” changes in students’ outlooks and “mean to enable them to perform in particular ways, to do particular tasks” to bring forth this increasingly complex order. Intention, here, is the primary design act; the means are secondary. The significance of design understood in the life-world context is that it may be understood as being both open-ended and unified. For, while the contents of the life-world undergo continuous recreation, the life-world’s existence as “a” world “in a unified way, persists throughout, being corrected only in its content” (Husserl, 1970, p. 105).
Continuing with the development of our life-world concept, Husserl maintained that the life-world may be understood both subjectively and inter-subjectively. In terms of the former understanding as an individual subject, one’s life-world may be understood as the structure of one’s beliefs pre-delineating a world-horizon of potential future experiences that constitute one’s “natural attitude.” Or, as Beyer (2007) puts it, one’s individual “lifeworld consists of the beliefs against which [one’s] everyday attitude towards [one’s] self, the objective world and others receive their ultimate justification” (section 3, para. 6).

While we are subjectively situated within our own life-world (or individual “home-world”), we also encounter inter-subjectivity from our first-person point of view when we engage in acts of empathy. For Husserl, inter-subjective experience is empathic experience, which Beyer (2007) explains, “occurs in the course of our conscious attribution of intentional acts to other subjects, in the course of which we put ourselves into the other one's shoes” (section 7, para. 3) In large part, we come to understand ourselves (notably, our self-image), and our world, in relation to others and their worlds. On this matter, Husserl (1970) writes:

> in whatever way we may be conscious of the world as universal horizon, as coherent universe of existing objects, we, each ‘I-the-man’ and all of us together, belong to the world as living with one another in the world; and the world is our world, valid for our consciousness as existing precisely through this ‘living together’ (p. 108).

The life-world also evolves socially and culturally shared meaning, where:

> we, in living together, have the world pregiven in this ‘together,’ as the world valid as existing for us and to which we, together, belong, the world as world for all, pregiven with this ontic meaning … [and where] we also function together, in the manifold ways of considering, together, objects pregiven to us in common, thinking together, valuing, planning, acting together. (p. 109)

Clearly, beyond one’s own life-world stand others. Therefore, meaning construction is both an individual and social act. Indeed, Doll (1993) notes reflection involves taking experience and looking at it publicly: “connecting our experiences with others’ experiences, building a network of experiences wherein past, present, and future are interrelated” (p. 141). Not only is our knowledge socially constructed, but also our
thinking process. We think with concepts that are socially constructed and we go on constructing new meaning by way of their social act of designing. Our subjective meaning making is an intersubjective process of relating with other life-worlds. The question that now arises is how does one’s world relate to other worlds?

Early Heidegger divides the concept of life-world into three nesting spheres, one’s own world, the shared world, and the surrounding world. For Heidegger (2001), “one’s own world is the world in which a person encounters himself in a worldly manner, in which a person is involved and taken up in one way of another, in which something ‘happens’ to him, in which he is active” (p. 72). Greene (1973) observes “the phenomenologist makes this life-world central to his thinking and, in consequence places great stress on each person’s biographical situation, on each one’s ‘standpoint’ and the way it affects what he sees” (p. 131). The shared world is the intersubjective world, which is “encountered in ‘part’ in one’s own world, insofar as a person lives with other people, is related to them in some mode of care, and finds himself in their world of care” (Heidegger, 2001, p. 72). Heidegger (1962) redefined Husserl's notion of intentionality as “care”, which he described as “definite ways of Being-in” the world, such as, “having to do with something, producing something, attending to something and looking after it, making use of something, giving something up and letting it go, undertaking, accomplishing, evincing, interrogating, considering, discussing, determining” (p. 56). Lastly, the surrounding world is a “circuit of objects” which “do not possess the ontological character and the ‘what’ of that which pertains to the shared world, namely, human beings, i.e. objects that can take care, and have in care, a world” (Heidegger, 2001, p. 72). This is traditionally the domain of those things we think of as having been designed—a system-world of things, which we have brought forth. In Heideggerian terms, while the focus of my study will be on my own world, I shall also be considering my own world in relation to the shared world, and the surrounding world.

To summarize the discussion so far: curriculum may be understood as educational experience, wherein through reflection one recaptures their experience, thinks about it, mulls it over and evaluates it (Boud et al., 1985, p. 19). This reflection is an act of conceptualization or re-framing (Grimmett, 1988), involving problematic concept-structured situations where old concepts give way to new ones through the
evolution of metaphors. Each reflective experience, successively projects itself onto future situations, influencing one’s future experiences and their reflection therein and thereupon. In this way, each experience builds upon prior ones, and one’s world expands. This world of one’s experience may be understood as a life-world of intentional meaning making. Ultimately, this conceptual preamble led us to define education experience as one’s dialogue with the life-world of one’s experience. However, this emerging definition remains incomplete, because as Heidegger (2001) suggests, this dialogue is not limited to one’s own world, but also involves one’s shared world, and one’s surrounding world. I shall defer my consideration of these additional relationships to later chapters. For now it is sufficient to state that these two other worlds will serve to expand the boundaries of my study beyond the context of my own world; nevertheless, my consideration of these two other worlds will remain limited to their relation to my own world. Thus, the ultimate boundaries of this study remain defined by my autobiographic account and conceptualization.

2.4. *Currere* as Method

How do I bracket my educative experience as it relates to curriculum design? By following the methodology of *currere*. Pinar’s (2004) use of the term *currere* refers to “the Latin infinitive form of curriculum [which] means to run a course, or, in the gerund form, the running of the course” (p. 35). As a method it “provides a strategy for students of curriculum to study the relations between academic knowledge and life history in the interest of self-understanding and social reconstruction” (p. 35). In many ways, *currere* reiterates Dewey’s (1916/2004, 1938) analysis of educational experience. Specifically, his idea that education “is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience” (p. 74). Similarly, Pinar (2004) describes how “*currere* reconceptualized curriculum from course objectives to complicated conversation with oneself (as a ‘private’ individual), an ongoing project of self-understanding in which one becomes mobilized for engaged pedagogical action—as a private-and-public intellectual—with others in the social reconstruction of the public sphere” (p. 37). In sum, *currere* is not limited to study of one’s own world but also considers how it intersects with
the shared world, and the surrounding world. Thus, while predominately subjective, *currere* also considers the intersubjective interactions of the subjective individual.

*Currere*, McKnight (2006) argues, builds upon a long tradition of curricular thought, beginning with John Calvin’s text, *Institutions*, “which sponsors the Latin phrase *curricula vitae* as a description of an individual’s journey that begins with a summons, a call to depart by an absolute other, which for Reformation Christians was God” (p. 175). Curriculum intertwined as *curricula vitae*, according to McKnight, “was the intensive, rigorous, even empirical process of an individual studying his or her interiority in an effort to identify a purpose and meaning in life” (p. 175). This self-reflexive tradition was introduced to North America through Harvard—a Puritan college established in the 1630s—in the form of a devotional method, which was at the centre of their *Technologia* curricular framework. Technologia also encompassed a second curricular tradition, one initiated by Peter Ramus during the mid-1500s, which emphasized technical mastery. This was a technological view of organizing life, which encouraged, first, the discovery, and then, the widespread standardization of “the so-called best and most direct map to follow.” (p. 176). As this technical and more administrative aspect of curriculum took precedence the individual’s voice in learning diminished, leading Schwab (1969) to proclaim in “The Practical: a Language for Curriculum” that our thinking about curriculum had become stagnant and morbid. *Currere* was part of a re-conceptualization of technicist curriculum, a rival of the self-reflexivity of *curricula vitae*, which had been lost with the institutional standardization of a Ramist notion of curricular maps, which came to dominate modern education. And for me, in this study, *currere* is a method of reclaiming a self-reflexivity I lost in the course of my own standardized technicist oriented educational experiences.

Pinar (1975b) describes the method of *currere* as an exploration of “the complex relation between the temporal and the conceptual” where “in doing so we disclose their relation to the Self in its evolution and education” (p. 1). It is a revealing of the lived educational experience of the life-world of education; that is, an autobiographical disclosure of “the temporal and cognitive modes of relation between knower and known that might characterize the ontological structure of educational experience (p. 35). What this means, as McKnight (2006) observes, is that “Pinar’s *currere* attempts to provide the
basic contours of a map, much like Calvin’s curricular vitaea, that is to be filled in, and even inscribed by each individual” (p. 178). There is also a parallel here to Dewey’s (1915) insight that while curriculum may be like a map, “no book or map is a substitute for personal experience; they cannot take the place of the actual journey” (p. 255). The method of currere serves as a way to reconnect the map to the journey.

Currere begins from the hypothesis that one is in a “biographic situation” (Pinar & Grumet, 1976, p. 51). Pinar (2004) explains, one is “located in historical time and cultural place, but in a singularly meaningful way, a situation to be expressed in one’s autobiographical voice” (p. 36). For Pinar (1975b), currere emerged from his own desire to “understand the contribution [his] formal studies [made] to [his] understanding of [his] biography” (p. 1). Commenting on his own biographic situation Pinar writes:

while in certain ways I have chosen [my biography] (hence must bear the responsibility for it), in other ways I can see that it follows in causal ways from previous situations. I can look at my life in a linear way, acknowledging its actual multi-dimensional character, but limiting my view to a linear one, to make it more manageable, and I see that this has led to that; in that circumstance I chose that, I rejected this alternative; I affiliated with those people, then left them for these, that this field intrigued me intellectually, then that one, I worked on this problem, then that one. And if I chart these choices and circumstances on a time line, and then begin to describe (as I remember it now), the transitions from that situation to the one that followed, I see that there is a coherence. Not necessarily a logical one, but a lived one, a felt one. The point of coherence is the biography as it is lived. The Lebenswelt. (p. 1)

As a method, currere involves four reflective “moments:” the regressive, the progressive, the analytical, and the synthetical (Pinar, 2004, p. 35). In a formative articulation of these conceptual parts, Pinar (1975a) characterized currere as:

1) regressive, because it involves description and analysis of one's intellectual biography or, if you prefer, educational past;
2) progressive, because it involves a description of one's imagined future;
3) analytic, because it calls for a psychoanalysis of one's phenomenologically described educational present, past, and future; and
4) synthetic, because it totalizes the fragments of educational experience (that is to say the response and context of the subject) and places this integrated understanding of individual experience into the larger
political and cultural web, explaining the dialectical relation between the two. (p. 424)

The regressive moment describes one's lived experience: “One returns to the past, to capture it as it was, and as it hovers over the present” (Pinar & Grumet, 1976, p. 55). Pinar (1976) writes he “conceived of one’s apparently past ‘lived’ experience or existential experience as ‘data source’” (p. 36). The generation of this data begins with “the free associative remembrance of the past” (Pinar & Grumet, 1976, p. ix). This psycho-analytical technique is a re-entering of the past, through an “[excavation] of the present by focusing on the past, work[ing] to get underneath [one’s] everyday interpretation of what [one] experience[s], and enter[ing] experience more deeply” (p. ix), thereby, “enlarg[ing]—and transform[ing]—one’s memory” (Pinar, 2004, p. 36). In terms of my study of conceptual development as a curriculum designer, I also see the regressive moment as a genealogical method of historical study, typified by Foucault’s (1977/1995) *Discipline and Punish*. That is, rather than merely being a linear chronological history, it is a surfacing of a genealogical “record of emergence,” which is used to “trace out several strands of simultaneous happenings” (Davis, 2004, p. 3).

The progressive moment is a looking forward to what is not yet present. Pinar (2004, p. 36) asserts that, as Voltaire (1824) writes, “if the past was pregnant with the present, the present is pregnant with the future” (p. 126). As a particular inquiry technique, “the progressive, asks [one] to ponder meditatively the future, in order to uncover [one’s] aspiration, in order to ascertain where [one is] moving” (Pinar & Grumet, 1976, p. ix). For Pinar, the progressive is distinguished in one of two ways, perhaps, both. First, in regards to style it is fiction, poetic, and otherwise imagistic—an imaginative experimentation. Second, its thematic character is futural—an imagining of the future.

The next two moments, the analytical and synthetical, are two complementary facets of one’s act of self-conceptualization. First, the analytical moment is an examination of both past and present. This analysis is “devoted to intuitive comprehension as well as cognitive codification” (Pinar & Grumet, 1976, p. ix) of what is uncovered in the first two moments. It is a working out conceptually of “what I’ve been and what I imagine myself to be” (p. ix). Importantly, it is “the beginning of agency” (p.
ix). That is, it is my intentional act of reflexively shaping my own world, the shared world, and the surrounding world, which subsequently give shape to my being-in-the-world.

The synthetical moment is one’s re-entering the lived present. Pinar and Grumet (1976) write:

More deeply, now, in the present, I choose what of it to honor, what of it to let go. I choose again who it is I aspire to be, how I wish my life history to read. I determine my social commitments; I devise my strategies: whom I work with, for what, how. (p. ix)

This moment is the totalization of the fragments of my educational experience. For this study, it is my re-conceptualization of what it means for me to design curriculum. It is an integrated understanding of my individual experience that I place into “the larger political and cultural web” and acts to explain “the dialectical relation between the two” (Pinar, 1975a, p. 424). It is my conceptual designing of my re-conception of design.

2.5. Hermeneutic Intent

_Currere_ is an act of constructing and interpreting an autobiographical text. As an interpretation of a text it enters the realm of hermeneutics. Hermeneutics is concerned with asking questions of a text and realizes that people come to a text with a prior set of assumptions and that these assumptions will in part determine the meaning of a given text. In this regard, a text is both written and its meaning is understood within particular contexts. The process of hermeneutics involves coming to an understanding of a text by understanding its parts and how those parts relate together as a whole. Thus, a person will come to a text with a set of taken-for-granted assumptions, which the text will at times unsettle. When something in the text does not make sense according to a person’s assumptions this disruption acts like a question and an interpretive dialogue with the text ensues. For example, a sentence like “it’s raining cats and dogs” may at first appear nonsensical in its localized placement and literal sense; however, by interpreting this statement in terms of its greater textual and cultural contexts it may then be understood as a metaphor for a rainstorm. This process of questioning the text and having it raise questions of its interpreter’s assumptions is known as the hermeneutic circle.
To this point in the discussion I have employed and described the interpretation of my lived-experience in largely critical hermeneutic terms, which “deconstructs economic systems and social meta-narratives by challenging false consciousness in order to uncover the ideological nature of beliefs and values” (Slattery, Krasny, & O'Malley, 2007, p. 548). I shall continue in this approach, which builds upon the contextual hermeneutics exemplified by Gadamer (1975, 1976) that “recognizes social and historical conditions as essential in the interpretive process” where the interpreter is “understood to move within a hermeneutical circle that requires the specification of historical conditions in textual interpretation” (Slattery et al., 2007, p. 545). However, my interpretative approach also seeks to incorporate a post-structural hermeneutics, which—typical of deconstruction theorists like Baudrillard (1968/2005, 1981), Derrida (1972; 1981), and Foucault (1965, 1972/2011, 1980)—“aims at deconstructing the meaning of a text, not in order to analyse it or to reconstruct a different interpretation, but to displace traditional and conservative concepts like identity, meaning, authorship, unity, or purpose” (Slattery et al., 2007, p. 548). The intent of the post-structural approach is not to establish a correct interpretation, but rather to establish “that all interpretations are contingent, emergent, and incomplete” (p. 548). And unlike the post-structural approach, the intent of critical hermeneutics is “to promote distortion-free communication and a liberating consensus” (p. 548). I view my use of these two approaches as complementary to each other.

While the use of both critical and post-structural approaches to interpreting texts is necessary for my study, it is not sufficient for a re-conceptualization of design. Building upon these first two traditions, Slattery et al. (2007) propose an integrated variation they call dialogic hermeneutics. In brief, this method “focuses on an inter-subjective existence and, as a necessary condition aesthetic awareness, empower[ing] educators to resist methodological approaches that seek to certify inert information for canonical accountability” (p. 556). This dialogic approach is similar to the reflective character of critical hermeneutics and the emergent contingency of post-structural hermeneutics, but joined to “a kind of knowing called praxis: a knowing that becomes an opening to possibilities, agency, and empowerment (p. 552). It also seeks to bring interpretation into the productive context of the shared life-world. That is, it is an interpretive approach, which acknowledges that one’s “subjective mental conscious[ness] is structured inter-
subjectively through [one’s] perception of others” (p. 550). What Slattery et al. add to my interpretations of my study’s texts is a creative view of my autobiographical text as an aesthetic design experience, with an emphasis placed on possibility and becoming.

In short, the method of this study of my lived-experience as a curriculum designer is to trace my conceptual development through four autobiographical moments of currere, using a dialogic hermeneutical approach in my interpretation of life-world texts, placing an aesthetic emphasis on possibility and becoming. This discussion of method is also my initial conceptual sketch of my theorizing about re-conceptualized curriculum design. It is my initial prototype that I shall now iterate in the following chapters.
Chapter 3.

The Regressive Moment

What is the past—as I experience it in the present—which bears on my dialogue with the world of my experience as a curriculum designer? To understand my past experience, I must regress, re-enter the past, excavating the present through an autobiographical activity of past remembrance. This regressive moment of currere is an autobiographical act of inquiry, “a process of reflection that reveals [my]self-as-object through [my] reflective self-representations” (Pinar & Grumet, 1976, p. 69). I am both the subject and object of my inquiry, investigating the interaction of internal and external structures as they meet in educational settings, which have shaped my conceptual development as a curriculum designer. Put simply, this is the story I tell about my past experience as student, teacher, and designer of curriculum within educational settings and that I reference in my present teaching practice of making curriculum.

3.1. My Pre and Primary School Years

I was born into a world under construction. I was brought home as a baby to an unfinished house. Consequently, my early childhood years were spent surrounded by the sights and sounds of my father bringing forth the built environment I dwelt within. My earliest memories of this building process were as a toddler, watching my father frame walls, run wires and pipes, and do an assortment of other house building tasks. While most of the major tasks were completed before I started school, the process of building and remodelling our house never seemed to end: fixtures, finishes and furnishings were continually changed to suit the evolving needs and tastes of our everyday practical and aesthetic lives as family. Birthed in this life-world of making and remaking, my childhood play acts mimicked my father’s patterns of designing and redesigning my family home.
I constructed built environments I playfully indwelled. At age three, I took the scrap building material from the construction of our house to build a Frank Gehry-esque envelop over the sandbox my father had built for me. A notable feature that my mother recalls was a neatly hammered row of 27 nails with no less than a hair’s space between each one. While of surprisingly sturdy construction, my dad dismantled this structure for safety reasons, and then, I happily recycled the scraps into other structures. My parents encouraged my designful play, providing me with the space, freedom, and a steady supply of materials to make and remake worlds. I was given a “real” hammer and hand saw, not merely toy ones. And my father brought me an endless supply of lumber trim ends, from the sawmill where he worked and a bottomless pail of nails, which allowed me to make, unmake, and remake a myriad of structures in our backyard.

My building also occurred indoors where I made forts from chairs and blankets, and fashioned an imaginative array of structures from boxes, and other materials. The few manufactured toys I possessed, such as, stuffed animals, action figures, and die-cast vehicles, were cast as characters in micro-worlds I created for them to inhabit, worlds that were continuously evolving with my emerging ideas. Intersecting with my built world of play, were my social and natural worlds. The oldest of three children, my early social world was primarily composed of adults—my mother and my father. I did play with a few neighbour children, but a significant percentage of my play was independent, most often mimicking the construction work I observed my father doing. As for the natural world, if the weather would allow, which was much of the time, I played outside. Our yard was like a big park and there were few fences between neighbouring yards making my neighbourhood an open patchwork of lots, many of which were still vacant and wooded. My friends and I were free to roam from lot to lot; we spent much of our time exploring the wooded lots, where we built trails and numerous tree forts.

Prior to school my life-world was a primary orality. I lived in an oral world of “felt” duration, free from any commitment to abstract routines, such as a “job” or “school,” which is organized in accordance with clock time (Ong, 1977). My most acute memory of kindergarten is a felt spatial temporal displacement of my everyday world. I had to take a
school bus from the outskirts of my town to the heart of its downtown business district. The natural ebb and flow of my day was ruptured by an imposed routine ruled by the clock, I had to awake, get dressed, eat breakfast, take my lunchbox, walk the length of my driveway, and wait for the school bus to pick me up at a regularly scheduled time each school day. I had to take little responsibly in this new pattern of life; I simply had to respond appropriately to my mother’s oral direction. Nevertheless, the novelty of this disruption to my everyday life soon became a rather dull and unimaginative routine.

I recall little of my first classroom experience, beyond how I felt within that particular institutional space. For some reason, still unknown to me, my classroom was in the basement of the United Church, which was located close to my elementary school. I recall that both buildings felt impersonal. My brightest memories were the walks we took to and from the church and the school building. I have no particular memory of my teacher or any classmate. And the most notable event during my kindergarten year was my daily bus ride home. That is, because we drove past a few interesting industrial sites and a new mall under construction. Watching this massive building rise from the ground became the highlight of each school day, and the predominate memory I have from my formative year of schooling. My school and my home seemed like two entirely different worlds, between which I was transported back and forth each school day.

Grade one was at a school in walking distance. Each day, I walked home from school and my mother would ask me, “What did you learn today?” Inevitably, I would reply, “Nothing.” Sadly, this was often true. The teacher divided the class into two groups: the “smart” kids, and the “not-so-smart” ones. She spent her time teaching the “smart” students and gave next to no time with the “problematic” ones. Happily, I found myself in the latter group, which meant she simply let me play quietly on my own. At the beginning of the school year my mother asked my teacher how she could best help me study. The teacher’s reply was that she didn’t believe that parents should get involved. And, over the course of my school year my reports home always appeared good.

Oct 15, my teacher wrote in the “Comments on Student’s Weakness and Strengths” section of my first report card: “Listens and participates well in class discussions; works well independently; work is neatly done; and his attitude is always
positive.” Dec 10 she wrote “Mark will probably finish Level 2 of the Ginn Reading Program before Christmas. He works at a fairly slow, steady pace but his completed work is done well. Mark is relaxed and self confident with other children. He participates in discussion without any hesitation.” The March 25 report stated, “Mark has started Level 4 of the Ginn 720 Reading program. His progress in Reading is satisfactory. In Arithmetic, Mark still reverse [sic] the numbers although he is conscientious about correcting the mistakes. Mark cannot work under pressure. I believe he is working up to capability.” In my final report card on June 25 she wrote: “Have a nice summer, Mark. Have fun working on your home projects! Don’t forget to take some time to read.”

My life changed at the end of the school year. I had a homework assignment, which I didn’t know how to do. In a state of distress, I took it to my mother and she asked me to read the instructions. To her dismay, I could hardly read a word. As a result of this horrifying discovery, my mother in an act of care for me spent the summer teaching me how to read. It was a painful process and both she and I shed many tears. In our first session, I read seven words in fifteen minutes. I soon improved, but difficulties persisted; I had trouble distinguishing between the words “the” “they” and “them.” Clearly, I demonstrated what today might be identified as characteristics of dyslexia; however, at the time I simply thought school learning was impossibly difficult. As a builder of worlds, I intuitively felt writing systems were a technological problem, which I found incredibly frustrating to deal with because they wouldn’t allow me to make them otherwise.

My early childhood experience learning to read, and then, to write remains vivid as I regress into this moment. It was a mysterious world that didn’t make much sense to me. It was an introduction to an alien technological system world of writing, where my earlier “noetic state” of understanding underwent the beginning stage of “a kind of cleavage, separating [me as] the knower from the external universe and then from [myself]” (Ong, 1977, p. 18). While this separation laid the groundwork for the sort of detached abstract reflection I am now making of this same lived experience, there was also a cost. Learning to read and write split up my original unity of consciousness and in this present act of regression I still feel how it alienated me from myself, and my life-world. My original early childhood conceptual unity was not totally satisfactory, or secure, but my world of oral utterance was a world of action, which gave me “a sense of
continuity with life, a sense of participation, because it [was] itself participatory” (p. 21). Writing, as a system, along with its media of signs, transformed the character of my prior educative process, as it began to speak for me in my dialogue with my lived experience.

Ong (1982) argues that, “writing and print and the computer are all ways of technologizing the word” (p. 80). It may at first seem strange to consider writing as a technology. Given its deep penetration into our life-worlds, writing appears to be a natural part of our being in the world. Nevertheless, it constitutes a technology, a textual system-world. As Ong contends, writing “is not a mere appendage to speech. Because it moves speech from the oral-aural to a new sensory world, that of vision, it transforms speech and thought as well” (p. 85). Consequently, writing as a textual system-world has a designing power to restructure the human life-world. It has a history that has shaped the plasticity of human consciousness in a way that is similar to how our buildings have shaped and are shaping our dwelling in the landscape. As a child, I was resistant to it shaping me. And, this regressive moment has resurfaced those feelings of resistance.

The system world of text emerged from the life-world resources of oral language, but its media of signs have become largely de-coupled from our everyday oral understanding. Consequently, from my life-world perspective of primary orality the English writing system of letterforms—with its abstract rules of sequential clustering into words, set with intermittent spaces and punctuation into sentences, arranged into cascading horizontal lines, which are periodically indented, separated by a line break, or both to indicate a paragraph—leaves little space for what Habermas (1984) calls strong communicative action. Moreover, as Habermas argues—albeit in broader theory of social order terms—communicative action as social action undergoes a rationalization, resulting in system media, such as markets or money, which serve to speak for us. Similarly, I suggest that writing may be understood in social system terms, as a system media that can speak for us, in that it is a structure that structures. Habermas argues that these system-world media can act to colonize the life-world. And seen this way, I suggest that learning to read felt to me like a colonizing of my life-world, presenting me with a legitimacy crisis for why this particular technologization of the word should even exist. While I learned to work within this system-world and make it work for me, this early experience cast a long shadow on my life in schools, as I was encumbered by its texts.
Academically speaking, I should have repeated grade one, but I didn’t. Fortunately, my grade two teacher was a wonderful help to my study in schools. She was disciplined, competent, and fair-minded. She also provided my mother with every resource she could to help me succeed during that year. I had to work extremely hard on my studies both in the classroom and at home, but I was able to complete two years of schoolwork in grade two. Indeed, at the end of the year I was recognized as the most improved student of the year. According to my teacher, my reading, writing, and arithmetic skill development was generally good, although, I still had difficulty spelling, and did “not readily apply phonic skills when [I was] spelling new words.” My favourite subject was art, along with burgeoning interests in social studies and the sciences. In short, I was “a conscientious student with a mature attitude towards his school work.”

In grade three, I greatly expanded in many ways as a student. I continued to do well in science and social studies; indeed, I have a record of doing particularly well on a mapping unit. Overall my work was satisfactory, but I still struggled with spelling. My general pace of work was also quite slow. However, as my third grade teacher noted, “although [Mark] is often slow to complete his work, he does so in his free time without the necessity of a reminder.” As I regress to this time, I recall that it took much mental energy for me to code and decode the sign based linguistic and mathematical system worlds, which dominated my school studies. As a result, I was slow at making sense of school texts, and solving the problems they presented. But, I was also self-disciplined and persistent in independently working things out. Moreover, I soon discovered I had other strengths. From the beginning, while I struggled with reading and writing, I was recognized in both grades one and two for excellent printing. Grade three introduced me to cursive writing, and to my benefit, my teacher was a trained calligrapher. With her technical expertise and encouragement I excelled at the “art” of lettering.

Grades four and five were spent in a split class with the same teacher. Grade four is when I fell in love with reading. The boy who could hardly read a single word of English near the end of grade one, read all 58 of The Hardy Boys books that year. Beyond children’s fiction, I also discovered an intriguing and diverse world of non-fiction. At home we had the World Book Encyclopedia set, which I began systematically to flip through, reading every article of interest, which were many. My mother further supported
my new reading habit, by taking me regularly to the public library. Grade four was the year I wrote and delivered my first formal speech—all of 30 seconds—on my favourite bird at the time, the Peregrine Falcon. And, by the end of the year I found myself regularly on the school’s honour roll for my scholastic performance.

In grade five, my performance in the language arts and mathematics remained good, but uneven. My performance in art clearly emerged as a subject area wherein I excelled. Similarly, during my grade four and five years, my teacher introduced me the game of chess, and encouraged me to join the chess club, which strengthened my thinking. That is, as Benjamin Franklin (1779) wrote in his essay *The Morals of Chess:*

> The Game of Chess is not merely an idle amusement; several very valuable qualities of the mind, useful in the course of human life, are to be acquired and strengthened by it, so as to become habits ready on all occasions; for life is a kind of Chess, in which we have often points to gain, and competitors or adversaries to contend with, and in which there is a vast variety of good and ill events, that are, in some degree, the effect of prudence, or the want of it. By playing at Chess then, we may learn: 1. Foresight, which looks a little into futurity, and considers the consequences that may attend an action . . . 2. Circumspection, which surveys the whole Chess-board, or scene of action, the relation of the several pieces and situations . . . 3. Caution, not to make our moves too hastily . . . And, lastly, we learn by chess the habit of not being discouraged by present bad appearances in the state of our affairs, the habit of hoping for a favourable change, and that of persevering in the search of resources. (para. 3-7)

While I continued to struggle with the linguistic and mathematical system worlds, which dominated my school studies, my developing strengths in spatial-visual thinking and persistent self-discipline helped me to offset my weakness, and made me average. Playing chess further developed my emerging ability to be strategic and resourceful regarding my learning challenges. And as a result, I became increasingly resourceful in developing novel learning strategies, which helped me to cope with the school texts.

In grade six, my academic confidence continued to grow; I still struggled in some areas like spelling and mathematics, but I was overall a good student. My penmanship slowly began to worsen; however, this was an intentional coping strategy that I didn’t disclose. I discovered that poor penmanship, if strategically applied, could often mask my poor spelling. I also found other ways to strategically apply my visual-spatial skills to
other school problems. For instance, I built a scale model of a Carthaginian war ship to use as a prop for a social studies assignment. Not only was it visually impressive, it was a way for me to conceptually organize, retain and recall related information. I discovered that by using a model I could effectively communicate my understanding of complex ideas. I used this presentation strategy in numerous social studies and science projects. Moreover, I discovered that I could build spatial models of things and ideas in my mind just like I could build models of real things. Within an oral presentation or conversation I found I could easily tells stories of these pictures I held in my mind. While I continued to struggle with the world of writing, I realized I was articulate orally. My scholastic capabilities and confidence was really growing, but then life circumstances intervened.

A few weeks before Christmas, my father took me ice fishing. On the way we were in a car accident; my father died. It was an immensely violent and traumatic moment. I stared death in the face and expected my world to go black, and for life to be over. However, it wasn’t; I lived. My sixth grade teacher was incredibly compassionate, but my schoolwork suffered. One notable impression I have from that year, was that my teacher read daily to the class from Lloyd Alexander’s (1964) *The Book of Three*. It was an imaginary world I could escape to. Importantly, I also identified with the protagonist, Taran, the Assistant Pig-Keeper; an orphaned boy, raised by an enchanter and retired soldier, who was similar in age to me and like me was becoming a man on his own. The story gave me hope that I could still find success in the world without my father.

The details of grade seven are blurred together in my memory; as a consequence of being taught by a team of three different teachers, in addition to a music teacher. While I still struggled with spelling, my writing radically improved, and I made significance progress in the area of reading. By the second term of the year, I was back on the school honour roll and by the third term I was grouped with the top students in the highest level. Being socially grouped with these students, further strengthened my continued scholastic development, as they modelled higher order thinking strategies, which I learned to mimic. That is, I was able to closely observe their successful learning strategies, and began to apply these strategies (tricks of the trade) to my own learning.
At the end of my elementary school years my family moved from our rural town to a big city—to be nearer to family. The move compounded our felt losses, notably the loss of the house my father had built. Our new house was half the size of our old house with a yard that was similarly reduced. An additional discouragement was that this new house was poorly built and many parts of it were substandard in the way it had been finished. Even its basic configuration didn’t truly fit our needs—we were initially short one bedroom. Emotionally, I became acutely aware that the design of the environment we lived in affected our family’s wellbeing. Thus, after a year of living with my family’s state of dissatisfaction, bordering on depression, in the ninth grade I began to slowly, year-after-year renovate the whole house from the top to bottom. As I worked to redesign our home to better fit our dwelling there, our state of being improved. This renovation project continued throughout my secondary and university years of education. The significance of this fact is that my continuous work redesigning my lived-environment remains in the background of my secondary and undergraduate experiences to which I now turn.

3.2. My Secondary School Years

Secondary school in a new city was a fresh academic and social start for me. Some of my classmates knew each other, but many did not. My classes were filled with a mix of graduates from different elementary schools and the multi-session subject-based course timetable used at my school further broke up previous student cohorts. Consequently, each course I took were embryonic social and learning situations, wherein I was able to start afresh. My grade eight art class was a notable highlight.

Art in secondary school presented me with a more formal discipline under the guidance of an art teacher who had trained as an artist in Europe. I loved my art class and I excelled at it. Because I demonstrated artistic talent, my teacher gave me advanced assignments, which allowed me to develop my skills further. My grade eight art class was also where I met another talented art student, who would become one of my closest friends. This relationship proved to be very significant in terms of my schooling, because he was one of the top students in the school; indeed, by the end of secondary school he was one of the top students in the province. At first, I assumed that he was significantly smarter than me, but as I observed his study strategies I realized his
success was largely due to the disciplined work that he put into his studies, assignments and exam preparation. Study was clearly a matter of hard work, not just intelligence.

Beyond art, grade eight also introduced me to formal industrial education, initially spanning woodworking, metalworking, electronics, and technology education. While I excelled in all these areas in grades nine and ten I chose to focus on technology education. It was a British industrial designer who taught this pilot course. I didn’t realize it at the time, but this experience introduced me to still emerging practices and discourses in design thinking. I was introduced to what Cross (2006) calls "designerly ways of knowing" (p. 27). According to Cross, the educational value of this formative exposure was threefold. First, he suggests that “design develops students’ abilities in tackling a particular kind of problem . . . characterized as ill-defined, or ill-structured, and is quite distinct from the kinds of well-structured problems that lie in the educational domains of the sciences and the humanities” (p. 27). Second, design develops a characteristically constructive “kind of thinking that is peculiar to design” (p. 28). Contrary to a Piagetian ‘stages’ notion of cognitive development, where concrete reasoning is thought to give way to higher level abstract analytical reasoning, design demonstrates that this supposedly lower level concrete mode of cognition does, in fact, develop into higher levels, as Bruner’s ‘continuous’ theory of cognitive development suggests. Third, design ‘culture’ as opposed to literary or scientific cultures “relies not so much on verbal, numerical and literacy modes of thinking and communicating, but on nonverbal modes” (p. 28). Design uses models, drawings, diagrams, sketches and mental imagery to think and communicate. This early exposure to the formal discipline of the technical culture of design, along with complementary experiences in the visual arts, established within me an affinity for working with ill-defined problems, constructive kinds of thinking, and nonverbal modes of thinking and communicating.

My close friend excelled not only in art and technology education, but also in the traditional humanities and sciences. Moreover, he had the ambition to pursue university studies in the area of engineering, and per entrance requirements at the time, he needed to take all these academic courses. Due to his influence I took a similar set of courses. I continued to struggle with spelling and mathematics, but having the role model of my friend’s good study habits as my guide I learned how to perform well in school.
Grade 11 presented me with an educational crisis. Since my school only offered grades eight to ten, I had to go elsewhere for grades 11 and 12. The problem with this prospect was that the two closest schools both had poor academic reputations. While I wasn’t aware I had other options, the “smart” kids I socially associated with had discovered that our district offered an International Baccalaureate (IB) Diploma Programme with enriched and accelerated courses in the sciences, mathematics, literature, and languages. I could not see myself as being able to do this program, but my close friend encouraged me to apply. I was confident he would be accepted, but to my surprise I was also accepted.

While my IB academic performance wasn’t noteworthy, the experience revealed profound insights that set the course of my future studies. First, under the intensity of enriched and accelerated study I realized that formal logical-mathematic thinking was not my area of strength. Second, I discovered that I had greater verbal-linguistic capabilities than I realized. Third, I observed that I enjoyed reasoning within the spaces where logical and linguistic modes of thinking intersect. A core part of the IB programme was the study of epistemology in a Theory of Knowledge course. This philosophical kind of understanding made sense to me, even though it seemed many of my clearly very brilliant peers actually struggled with it. Similarly, the programme exposed me to other interdisciplinary forms of knowing, such as, the socio-economic methodologies employed in human geography. Fourth, I noticed that in areas where I could employ my spatial reasoning, such as, within certain aspects of mathematics (notably, geometry and trigonometry), physics, and geography I excelled. Lastly, given the juxtaposition of the IB programme within the general education context of the public school, I became aware of a simple fact that there is actually no definitive curriculum, but rather curriculum is open to multiple interpretations. In short, I discovered the power to shape my own studies and make them responsive to my own authentic being.

After a year in the IB programme I arrived at the conclusion that while both science and mathematics were certainly powerful and useful, their pre-eminence in my world was unfounded. As a result of this insight, in my final year of secondary schooling I shifted my course of study to my strength in art. Once in IB visual art I was able to complete two years worth of course requirements in one. And following my love for
making, my future intent was to pursue studies in architecture, or urban planning, or (as a backup plan) teaching art. Within the region I lived, the most appropriate path for me to become an architect was to complete a university BFA (art) degree, then, take a M.ARCH (Master of Architecture) program. Alternatively, to become an urban planner I could complete a (human) geography B.A. degree, then, take a Community and Regional Planning M.A. program. With either of these undergraduate degrees, I could also become a (secondary school) teacher, which required me to have only one teachable major (such as, art or geography) or two teachable minors (such as, art or geography), and then take a fifth year professional teaching program.

3.3. My Art School Years

I began my undergraduate studies by taking courses in both visual art and geography. I remained intent on continuing both courses of study, but I soon became totally absorbed by art. Ironically, it was not because I found my art studies easy, but rather because I found them surprisingly difficult. Why? I came to university as a representational painter with a fixation on naturalist subject matter and a commitment to realism’s concern with “reality,” “truth,” and “fact.” Given this artistic self-identity and skill, I was initially quite disoriented by the contemporary art curriculum I encountered. Indeed, verisimilitude was not privileged, nor was positivistic “truth” valued. Instead, I was expected to work abstractly and subjectively in my first open studio course, which took me systematically through “the progressive development of artistic practice from simple mark-making to full scale installation” (Simon Fraser University, 2012)² It was a highly conceptual and iterative production/reflection “process of continuous transformation, [where] an original idea is developed in a sequence of methods, materials and scales.” This was the first of eight sequential open studio courses, one each semester, over four years. The second course, built on the first, “culminating in the Campus Project, a site-specific public work designed, built and installed at the end of the term.” The second year courses were more exploratory, involving “a combination of freely chosen and

² I have cited a more current course description, here, based on the fact that it accurately describes what I actually experienced at the time I took the course, whereas the course descriptions in 1992 did not.
assigned projects in various contemporary media.” The third year courses required me to “have a program of work prepared at the beginning of the [first] term,” which constituted the basis of my work in the two studio courses. It was also the basis of a continuing critical discussion, which was “integrated with theoretical studies in … [two] parallel seminar course[s].” These seminar course connected “historical, critical and theoretical” research to my own artistic work. Lastly, the fourth year courses involved the proposal, preparation and installation of the graduating art exhibition.

Surrounding my open studio courses were two foundations courses, followed by, progressively more advanced elective courses in the practices of various art production media, including drawing, painting, sculpture, and photography. In addition there was a largely interdisciplinary set of art and cultural theory courses. First, there was an introduction to “some basic issues in the fine and performing arts through the presentation and discussion of selected works in dance, film, music, theatre and visual art.” (Simon Fraser University, 2012). Second, was an introduction to contemporary theory in the arts. Then, branching out from these two theoretical foundation courses were a set of arts in context courses, which exposed me to the various “theoretical concepts and historical issues that have informed the creation, perception, interpretation, and analysis of selected artworks in formative epochs, such as the Renaissance, Romanticism, Modernism, or Postmodernism.” Lastly, I studied two broad historical survey courses of visual art and culture. The first course covered the nineteenth century “with attention to the social, institutional, national, and international contexts of art.” And, the second course covered the twentieth century, “with attention to the artists, artworks, movements, and discourses that re-defined the functions and meanings of art.”

In terms of both theory and practice, I felt disoriented. The contemporary art world presented itself as a multiplicity of art practices and seemingly indecipherable discourses. Self-evident notions of art as image, object and space appeared to be giving way to strange conceptions of art as idea, found object, happening, and so forth. Where I expected to experience mostly practical art making as technological and imaginative craft, I encountered mostly conceptual art thinking. Where I expected to employ constructive thinking, de-constructive thinking was more often required. Where I expected to see clear (media) boundaries I was encouraged to experiment with new

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(intermedia) hybridizations. Where I expected to engage in a unified system of visual language, meaning and artistic agency I entered into a complicated landscape of contested discourses. And lastly, where I expected a curated seminal history of art I found disparate art histories. In short, while I was initially disoriented, and lost my way at times, I learned to study with purposeful uncertainty, and the program’s developmental process left an indelible mark on me.

Having loosened my conceptions of art, the program’s disruptive developmental process led me to discover early twentieth century ideas of abstraction in painting; notably the Russian works of Kasimir Malevich and Vasily Kandinsky. The process also exposed me to a related movement known as constructivism, which radically re-imaged the practices and understandings of sculpture; notably the Russian works of Vladimir Tatlin, Alexander Rodchenko, and Naum Gabo. These “modern” ideas and practices reconnected me with my childhood play acts of making spaces, but in a new conceptually informed way. And, this influence flowed directly into the formative development of my work as an artist.

Indirectly emerging from these two closely interrelated modern art movements was the Hungarian born artist-designer-educator Laszlo Moholy-Nagy, who largely experienced the entire course of modern achievements in his own theorizing and practice of art and design. His unique story intrigued me, because his stylistic autobiography felt similar to my own process of being transformed from a representational painter, to abstract photographer, to intermedia artist. His role as educator also intrigued me. Moholy-Nagy replaced Johannes Itten as head instructor of the Vorkurs, or preliminary course, at the Bauhaus school in Weimar Germany and later established the New Bauhaus school in Chicago. In Weimar, Moholy-Nagy rewrote the Vorkurs, shifting it from Itten’s original expressionism leanings towards the New Objectivity ideas emerging in early twentieth century Germany—which represented a shift toward “useful” art practices. This curricular move was not a radical shift, but rather a further step toward the original aim of Walter Gropius, who founded the Bauhaus in 1919, to merge the craft traditions with modern technology in a grand project of integrating all the arts into a total work of art. This approach to design was “truly modernist, scientific, and reductionist in its intention” (Kim, 2006, p. 19). In America, the
Bauhaus design theory became even more imbued with the scientific and analytic. Moholy-Magy extended the “new unity” between art and technology Gropius envisioned into a new model of modern design as “a dynamic relationship between art and science, revealed and materialized through technology” (Findeli, 1995, p. 34).

Discovery of the Bauhaus was a revelation to me, in particular, the curricular influence of its Preliminary Course, which Findeli (1995) concretely outlines as follows:

There are two main categories to consider, one being the plastic elements (line, shape, color, texture, structure, volume, motion, space, and so forth) and the other, the specific tools and materials used to create form (brush, pen, power tool, camera, pigment, paper, clay, wood, plastics, and so forth). The Preliminary Course set out to familiarize the students with these two categories through carefully designed assignments and to allow them to choose the workshop where their talent and latent aptitudes, which the course had revealed, were likely to blossom in the following three years. (p. 33)

During the first year of my art studies remnants of this old idea were still clearly present, in the form of two foundations courses. However, in the midst of taking these two courses, a critical discourse amongst the students and faculty unfolded about their continuing relevance. And, in the end, it was decided these courses would be removed from the program. That is, only after I had taken them. This experience made me aware that curricular designs have storied histories, that curricula in institutional contexts are open to critique, and that they can be changed through discourse. Also, I personally felt that this curricular change was a loss. That is, I personally longed for more of the modern technical rational form of art education that had developed at the Bauhaus.

Truly, I struggled to make sense of the contemporary art world and how I was situated within it. Berger (1972), a Marxist art theorist, stated that “to look is an act of choice” (p. 8) and more importantly the “way we see things is affected by what we know or believe” (p. 8). This was the first idea I was exposed to in my art studies, but my reflection on it was a prolonged and arduous process of actually revealing my way of seeing my education. In fact, only now do I fully recognize that I had come to my studies in art with what Schön describes as a Technical Rational perspective of professional art practice. That is, I was clearly affected by a Positivist view that saw “professional activity” as “instrumental problem solving made rigorous by the application of scientific
theory and technique” (Schön, 1983, p. 21). How did this Positivist Technical Rational thinking affect the way I saw things? First, I expected my art studies to have a systematic knowledge base that was “specialized, firmly bounded, scientific and standardized” (Schön, 1983, p. 23). Moreover, following my IB experience I tried to make sense of my university art experiences in a largely scientific way, believing that “real knowledge lies in the theories and techniques of basic and applied science” (Schön, 1983, pp. 27-28). Second, I saw art as an “applied science” that “yields diagnostic and problem-solving techniques which are applied in turn to the actual delivery of [artistic] services” (Schön, 1983, p. 24). In short, on the one hand, since grade twelve I had firmly decided to shift my course of studies from the sciences to the visual arts, and on the other hand, my thinking about art remained deeply inscribed by the culture of the sciences and its characteristically Positivist orientation.

The theoretical concepts I struggled to make sense of first emerged with some clarity in my Introduction to Contemporary Theory in the Arts course. The primary text used was Silverman’s (1983) book The Subject of Semiotics. Silverman briefly traces the history of semiotics from structuralist notions of signs to the post-structural discourses of subjects, covering Féminand de Saussure, Charles Sanders Peirce, Roland Barthes, Jacques Derrida, and Emile Benveniste. Saussure’s two parts of a sign—the signifier and signifier—were introduced; as well as the triad of what Peirce calls the “sign,” the “interpretant,” and the “object;” Barthes distinction between “connotative” and “denotative” signifying systems; Derrida’s deconstruction of the signifier/signified relationship; and Benveniste’s demonstration of the theoretical integration of the language, discourse and subject. Through Silverman (1983), I learned that these “signifying processes [are] responsible for the construction” (p. 53) of two very different discourses—the conscious and the unconscious. Moreover, I learned to use semiotic, psychoanalysis (Freud and Lacan), feminism, and post-structuralism theory to analyze the ways art works, notably films, convey meaning. It became clear to me through my exposure to poststructural semiotics and socio-cultural analysis that a multiplicity of meanings are ever present in all created works. Similarly, I was presented with the powerful idea that “the author must be seen as constructed by social and ideological factors—and moreover, constantly re-constructed in this way—rather than as an entity above these factors, developing by some internal logic of its own” (p. 129). Through
these discourses I came to see the author, and his or her works of art, as situated within a social reality, which as Berger and Luckmann (1966) neatly articulate, is socially constructed. On the one hand, society is constructed by people, and on the other, these people are themselves constructed by their interpretations of society.

I found myself situated within the swirling confluence of modern and post-modern conceptions of art. As a way of retreating from the cognitive dissonance I was experiencing between a (modern) structural Bauhaus like way of seeing things and a (postmodern) post-structural deconstruction/reconstruction, I became fixated on the relationship between art and technology. And, so I made it the theme of my proposed program of work and ongoing critical discussion in my third year studies.

In the course of studying this relationship I discovered Walter Benjamin’s (1936) essay The Work of Art in the Age of Mechanical Reproduction. Benjamin, in this essay, explores how cultural perceptions of art shift in the wake of new technological developments. He begins by briefly tracing a technical history of art reproduction from the Greek’s use of “founding and stamping” (I section, para. 1) to the modern advent of, first, lithography, then, photography, and ultimately film. The significance, Benjamin argues, of these new modern art forms is that they had reached a technical standard of quality, which permitted the reproduction of “all transmitted works of art” (I section, para. 3). Moreover, these new forms had also, rather prominently, taken their own place “among the artistic processes” (I section, para. 3). Together, these two new manifestations profoundly changed how the public saw art. First, the public’s mass exposure to quality reproductions broke down the dominant mystique, or “aura” as Benjamin labeled it, of the “original” work of art in its traditional form. That is, the value of art was no longer dependent on its traditional ritualistic value, whether it be magical (as in prehistoric times), religious (as in classical antiquity or the Middle Ages), or in service to the “secular cult of beauty” (as in the Renaissance and prevailing to modern times). Second, he argues that “uniqueness” and “authenticity” ceased to be relevant criterion of artistic production. Indeed, Benjamin notes that in photography, for instance, the notion of an “authentic” print simply makes no sense. In short, the crux of Benjamin’s celebrated analysis is that as authenticity ceased to be important in art production due to its mass consumption, the ritualistic basis of art shifted to an emphasis on politics.
By this point in my studies it became apparent that I was historically situated in the advent of the digital media revolution. Whereas mechanical reproduction “substituted exhibition value for cult value as Benjamin claimed, digital imaging further substitute[d] a new kind of use value—input value, the capacity to be manipulated by computer—for exhibition value” (Mitchell, 1992, p. 52). Thus, building on mechanical photomontage—cut-and-paste amalgamation of image fragments into new compositions—pioneered by Moholy-Nagy, and his contemporaries, I began experimenting with my own digital approaches to photomontage. While my work went in various directions, as experiments often do, it culminated in a critical concern with Mitchell’s (1992) insight that in the digital age “digital imaging now constructs subjects in cyberspace” (p. 52).

Following my third year I had the fortunate opportunity to study briefly with William Mitchell—then Dean of Architecture at MIT—who prophetically suggested to me that the most crucial task before us in the emerging digital age was:

not one of putting in place the digital plumbing of broadband communications links and associated electronic appliances (which we will certainly get anyway), nor even of producing electronically deliverable ‘content,’ but rather one of imaging and creating digitally mediated environments for the kinds of lives that we will want to lead and the sort of communities that we will want to have” (Mitchell, 1995, p. 5).

While I was keen to pursue studies in architecture, Mitchell suggested that I consider studying media or even education.

Meeting Mitchell was a critical inflection point in my university studies, shifting me from the linguistic turn (R. Rorty, 1967) laden discourses of contemporary arts theory back to more science imbued ones. My art program required breadth courses outside of the contemporary arts, drawing upon the social sciences, humanities, and the sciences. This led me to discover communication studies. In my third year, before meeting Mitchell, I had already completed the foundation courses in this applied science. These new discourses were in many ways similar to the contemporary arts ones: notably, the deep integration of critical theory, semiotics, and related socio-cultural forms of analysis. At the same time, these discourses were also more scientific, with a technical application of science. In this way, my visual artistic experience was reframed as visual communication design.
By the senior year of my undergraduate art studies, I had fully internalized the innovative development process that I had initially resisted in my first studio course, and I had turned it back on itself by reconstructing my program of study as an act of my own artistic practice. For instance, I discovered that I could substitute some of my upper level art major courses for communication ones that better fit my art and technology concerns.

In this self-constructed space of personal study, I took a seminal course in my studies, fourth year communications: *Issues in the Information Society*, taught by Richard Smith. I didn’t have all the prerequisites, but I challenged them on the grounds that my own art and technology inquiry was sufficient preparation. Smith presented the basic elements of design theory, and more importantly, its relationship to communication theory, the collaborative nature of the innovation process, and how innovation in new media happens. The course involved working in a team of students for a real-world organization, wherein we researched and envisaged how media innovations might change their industry, and how the organization might be impacted by, and take advantage of, these technological changes. Given the historic timing of this course—in the spring of 1996—at the dawn of the dot-com bubble, this exercise had a profound influence on me, as I witnessed in real time how design was changing the world.

Witnessing, and actively participating in the design of the emerging Information Society kept me reflecting, repeatedly, on Mitchell’s (1995) concern that the most crucial task before us in the emerging digital age was “of imaging and creating digitally mediated environments for the kinds of lives that we will want to lead and the sort of communities that we will want to have” (p. 5). Media was an interesting, and important component of these changes, but I also felt there was something more significant at stake within this massive change of age. While Mitchell had pointed me away from an architecture education and toward something like media studies, he also suggested education as another area that he felt was going to be an important contributor. His reason being, education has long dealt with the design of complex information worlds.
3.4. My Art Teacher Education

Following my art education I enrolled in a secondary (art) teacher education degree program (B.Ed.). My program involved twelve months of continuous studies comprised of courses in educational psychology, educational sociology, educational philosophy, communications for the classroom teacher, school and society, curriculum and pedagogy of art education, and a series of school-based practicums. At the heart of my program were a set of courses in art curriculum and pedagogy. The essence of these courses was understanding how to implement the British Columbia secondary art curriculum, encoded in a, then recently updated, Ministry of Education document known as the Integrated Resource Package (IRP). This school curriculum reflected a “move in art education toward a discipline based notion which includes inquiry in art history, aesthetics, criticism and studio production” (Grauer, 1997, p. 76). That is, it was a move to diminish the traditional emphasis on studio instruction in art education and to expose students to more modes of inquiry. The Ministry of Education art curriculum had four content-based organizers (that is, disciplines, or modes of inquiry)—image-development and design strategies; context; visual elements and principles of art and design; materials, technologies, and processes; and two process-based suborganizers—perceiving/responding and creating/communicating.

The pedagogical approach modelled within my art education courses was explicitly based on constructivist principles of instruction, as Grauer (1997) notes:

In British Columbia … all Ministry of Education documents in all curriculum areas are based on three constructivist principles of learning: learning requires the active participation of the learner which includes examining one’s beliefs and knowledge as an essential process in the process of learning; people learn in a variety of different ways and different rates; and learning is both an individual and a social process concerned with the construction of knowledge and meaning. The newly developed instructional resource documents in art education echo this philosophy. (p. 77)

These constructivist principles appear more evident in art education than in most other areas of the school curriculum. Citing a cross-Canada study of art teachers conducted by Gray and MacGregor (1987, 1991) Grauer (1997) quotes two key propositions about art education: first, “to hire a teacher is to hire a curriculum” and
second, “art is an idiosyncratic activity” (p. 74). Grauer (1997) adds, “unlike other school subjects that are driven by covering content in prescribed textbooks or by attempting to cover the content of government exams, decisions about content and evaluation in art are very much in the hands of the classroom teacher” (p. 74). Unsurprisingly, art “teachers are as likely to ignore a curriculum as embrace it depending on whether it corresponded to their own particular vision of what content is appropriate for art education” (p. 74). Consequently, what is taught and how is largely derived from the teacher’s “own school experience” (p. 75), specifically, “their school-enculturated form of the subject (Doyle, 1990)” (Grauer, 1997, p. 76). Grauer (1997), who taught my core art education curriculum and pedagogy courses, walked the talk of utilizing constructivist “strategies [in support of pedagogical content in my art teacher education] which encouraged [me] to reflexively recognize [my] subjective knowledge by comparing the models of art education [I was] learning to [my] previous and present school experiences” (pp. 78-79). As a result of her modeling, I felt empowered and prepared to shape curriculum in my own particular way.

What conception of teaching practice did I construct? Following the notion that concepts are metaphorical. My teaching metaphor was the teacher as a tree in a forest:

1) A mature tree has deep roots (grounding in life), a strong trunk (core of knowledge), expanse of branches (breath of experience), and unique form (personality/style).

2) While each tree must stand on its own, each tree helps support the others in the forest, protecting each other from the full effect of stormy times.

3) The mature trees can provide an ideal environment for the young trees to grow, but each young tree must grow on its own.

4) The mature trees must lower its perspective to see the world from the young tree’s point of view.

5) The mature tree must give room for the young trees to reach for the sky, and not try to hold them down beneath its canopy.

Throughout the duration of my art education program the issue of art and technology, specifically digital media, was a reoccurring theme. Moreover, my art curriculum and pedagogy courses were engaged in an experimental online collaboration with a cohort of art student teachers at another university. In the context of these
instances of discourse and practice regarding technology I found myself rising to the occasion, repeatedly taking opportunities to instruct my own classmates in digital media. My final course in my art education program was, fortuitously, about digital art education. The course was taught by Don Bergland, “the former Director of Visual and Audio Arts for Electronic Arts, one of the world’s largest multimedia companies” (Grauer & Irwin, 1997, p. 253). Bergland exposed me to the life changing idea that there were other career opportunities for me, beyond, the public/private school systems. Specifically, he suggested that I consider the work opportunities in the emerging digital media industry. I shall return to this storyline, but first I shall regress further back to trace another storyline.

3.5. Teaching Martial Arts

My art teacher education was not my first exposure to the practices of teaching. My first experience was teaching Taekwondo. At 15 I earned my black belt, which entitled me to teach. I was not instructed how to teach: I simply taught as I had been taught. Students’ feedback was positive; I seemed to be a natural. In short order I was regularly teaching children several times a week. By 16 I was also regularly teaching adults several times my age. I enjoyed teaching, but by the end of my high school years my teaching load had become very heavy, and I had little remuneration. I no longer had to pay my own tuition fees, but I taught far more than I was taught, so I quit.

Not long after I quit, in the first year of my undergraduate studies, I started my own Taekwondo school with my close friend from IB—who also had achieved his black belt in Taekwondo. The impetuous of our enterprise was our siblings’ desire to study Taekwondo as we had, along with our perceived lack of a satisfactory place for them to study it. In response to this perceived need, we started our own Taekwondo school. At first, my friend and I taught as we had been taught. However, this was almost immediately problematic, because we soon realized it was not very clear what it was we had been taught. To understand why we found ourselves in this situation requires a brief consideration of Taekwondo’s historic developments. And, more importantly how we encountered its diverse and often contradictory curricular forms as students.
My first school as a student of Taekwondo used the International Taekwondo Federation’s (ITF) curriculum. At that time, I thought this was the one and only form of Taekwondo. When my family moved to a new city and I had to change schools, my exposure to Taekwondo changed. To my surprise, what I was taught at the new school was substantially different. Then, after a few years studying at this second school my instructor had a falling out with his instructor and the curriculum changed on me again. A few years later the curriculum changed once more, as my instructor changed masters yet again. The summative effect was my study became a blended hybrid of several sources. As a result I had not experienced a coherent curriculum, so it wasn’t clear what I should replicate.

The widespread curricular dogma I was taught as a martial art student was there as one legitimate form of truth for the particular style one studies, which was derived from the art’s “master.” In changing from one Taekwondo style to another, our instructor’s justification was always that we were now learning a more legitimate form of Taekwondo. Thus, later as instructor of my own school I felt my eclectic assemblage of experiences was somehow illegitimate. Indeed, upon reflection I didn’t know where to place my trust. As an assiduous student, I set out to research the problem I faced.

I had been told Taekwondo had historically emerged from an amalgamation of ancient Korean martial practices into Taekkyeon, which had then blended with Japanese influences (largely the result of the Japanese occupation of Korea), along with additional influences of other martial arts originating from China and Manchuria. What I learned in my own study of Taekwondo’s history, was that following the end of the Japanese occupation of Korea in 1945, Korean martial schools—banned during the occupation—started to open. By the mid-1950s, nine Korean martial arts schools—called Kwans—had emerged and South Korean President Syngman Rhee ordered them to unify under one name, curricular system, and organizing body. In 1962, the Korean Taekwondo Association (KTA) was formed, which named Choi Hong Hi as its president. Later, in 1966, General Choi formed the International Taekwondo Federation (ITF) to oversee Tae Kwon Do practice globally. And, it was through Choi’s leadership that Taekwondo came to Canada, where I studied it. But, this history, I discovered, was only one history.
I also learned that Choi only created the ITF, because he had been forced to resign his presidency of the KTA. In 1971, Korean President Park Chung-hee proclaimed Taekwondo as Korea’s national sport. To support Taekwondo’s change in direction from martial art to martial sport, with the long-term aim of making it an Olympic sport, Park appointed Kim Un Yong president of the Korean Taekwondo Association in 1970. In 1973, Kim helped form a new World Taekwondo Federation (WTF), which began promoting Taekwondo as a sport around the world. In 1971, the Korean Ministry of Education had begun requiring all Taekwondo schools to have private school permits. Moreover, these newly state regulated schools were forced to comply with the government’s policies and curricular standards. Kwan leaders were being punished for retaining Japanese names and other curricular aspects within their programs. Choi—a black belt in shotokan karate—who closely modelled his Taekwondo patterns on Shotokan’s katas, chose to resist this intimidation. However, due to progressive marginalization, Choi—who moved the ITF headquarters to Toronto Canada in 1972—along with other notable Taekwondo pioneers left Korea. These marginalized pioneers and many former students of the early Kwans also left Korea to start new schools and associated systems, including Haeng Ung Lee who started the American Taekwondo/World Traditional Taekwondo Union and Jhoon Goo Rhee who first introduced Taekwondo to the United States in the 1950s. Living in North America, I was exposed to the early diversity Taekwondo represented by its outcasts.

In my study of Taekwondo’s history I experienced a tension between a traditional dogma that viewed curriculum as ‘one way’ of a master and the many different ‘one ways’ I actually encountered in my learning. I had been under the impression I was studying an ancient practice passed down through the generations. In practice, I moved from one master’s way to another’s one way, all the while accepting this dogma that the latest iteration was a more authentic way of Taekwondo. What I didn’t realize as a student, and later didn’t want to believe as an instructor, was that this discipline was relatively young and highly contested—even within Taekwondo’s own discursive field.

Looking beyond the politics I discovered that Taekwondo’s early curricular structure followed that of Japanese karate, specifically the Shotokan style, which is composed of three parts: kihon (basics), kata (patterns of moves), and kumite (sparring).
While the basics are essentially the same between schools, the patterns—commonly called hyeong or pumsae in Korean—varied greatly, along with sparring rules. Again, following the Japanese model, the Taekwondo curriculum is delineated as a sequence of colour belt grades, terminating with a black belt. The black belt, representing peer-reviewed mastery, was divided into additional levels. The common underlying logic, here, is that a master, in the past, had devised a set program of study. As a student I was first to replicate the master’s set movements and patterns, then internalize the essence of the master’s movements and patterns and in so doing develop my ability to apply this knowledge in unscripted sparring. Each colour and black belt level required me first to learn and then perform one or more pattern and also sparring with a partner.

Faced with my realization that Taekwondo as a historically secure art form was a socially constructed illusion, I simply decided to embrace its fragmented history and the multiplicity of my own lived curricular experiences. The realization of the constructed and contested nature of the Taekwondo curriculum gave my friend and me the courage to be divergent in our own instructional practice. Our first move was not a radical rupture; rather we simply looked beyond the Korean tradition to its sources in Japan and China. While the martial traditions of these cultures were older, there were still no secure canons of practice to be found in these contexts either. And, the further afield we searched, the more diverse and contradictory the histories, practices, and cultural idiosyncrasies became. Emboldened by this diversity of histories, we went our own way.

Being both rationally minded people, my friend and I sought systematically to define our own program requirements and standards. It was a rationalization of our own lived experiences. Therefore, our designs were initially based on the same Shotokan division of training, which Choi used to design his Taekwondo curriculum, and our patterns were—like Choi—closely modelled on what we had learned as students; however, we modernized it. A few years into our program development work, serious conceptual conflicts emerged along the lines of broader historical conflicts within the discursive field of martial arts. For instance, we soon realized that we were not clear about our program aim: were we teaching a traditional martial art, a martial sport, or modern self-defence program? As our own program design unfolded, more and more design assumptions, which had arrived to us from the past, were revealed and we
continually made changes in response to mounting problems. The first things to go were the Korean cultural elements. Then, we dropped the name Taekwondo, simply calling the practice we taught Martial Arts. Over time, we distanced ourselves from being a martial sport. Ultimately, self-defence, in all its pragmatic purity, became our primary aim.

Having abandoned the culture, sport, and artistry of the Martial Arts we turned to science for our source of conceptual security. Science—notably, psychology, physiology, bio-mechanics and physics—became our guide to what remained valid in our eyes. Our curricular intent simply became: to prepare the peaceful person to survive an encounter with hostile forces of some kind. That is, we trained people for a survival fight that may or may not happen. As such, our training became necessarily general to account for all manner of violence between two or more persons engaged in an empty-handed struggle, or one with hand-held weapons such as knives, sticks, or projected weapons.

Our program logic was based on the premise that the precise conditions a person will face in a survival fight can never be known in advance. Every situation will be different and there will not be prescribed rules of engagement. The person or persons that one may face, the time, the place, the methods of the attack are all unknowns. Logically, we thought, in any real survival situation, no two actions are ever repeated in precisely the same way. Thus, a solution to one situation will not necessarily be effective in another. Given thousands of possible situations that a person may encounter, we thought it was practically impossible to prepare students for actions in advance for a fight that only may happen. Our prior training had been based on a model of training for specific situations. So, the curricular problem was how to train a person for a situation where specific preparation is not possible? Our solution was to identify and refine a person’s given habits and intuitions to improve their survivability in the face of danger.

Our teaching practice shifted away from drilling our students in a canon of traditional patterns set by past ‘master’ practitioners to a principle based method, which encouraged imaginative applications. Our theory of practice was based on the basic supposition that all engagements must operate within the systems of an already existing universe. Thus, it was possible in our view to draw on a faith in its predicable systems
and use this knowledge to freely create technique. For instance, our system of teaching drew upon the scientific principles of inertia, force, and mechanical efficiency (physics), the body as a lever system and the efficiently of its movement (biomechanics), life as an organism and how vital systems sustain body functions (physiology), the body as a whole structure and the organization of its parts (anatomy), how the mind knows the world and copes with its challenges (psychology), and the right relation of self to others (ethics). We, then, taught our students to integrate these principles dynamically with their natural abilities to create the momentary techniques they needed to address any given situation. The only expectation of mastery our system of practice placed on our students’ generated techniques was the maximum efficiency to create effectiveness. This principle was tempered, however, by our training ethic, which ensured that a student’s training and attitudes do no damage to his or her body or psyche, or to his or her partners.

This curriculum project occurred in parallel with my art school and art teacher education years. At first, my work making my martial art curriculum became a way to express my longing for a Technical Rational perspective of art practice, which I found lacking in my art schooling. For example, I was driven in my curriculum design by an aspiration to systematize all my martial art knowledge into a coherent model. However, my art schooling also exposed me to conceptual and cultural deconstruction and post-modern sensibilities that over time tempered my above modernist intentions. This critical theorizing also helped me to see my experience with Taekwondo curricula as socially constructed. Thus, in making my martial arts curriculum I found myself struggling to come to terms with this growing tension between the diversity of unique student and teacher life-worlds I saw, and the system-world I was trying to create. The only system-worlds I knew, I knew were flawed, but I didn’t really understand in what ways. I only felt that there was not a good fit between these systems and people’s lived-experiences.

As the primary designer of our school’s curricular system-world, I was designing in a designed world inscribed by what the past had sent to it. Initially, my designs were largely reproductions of the past practices I had already experienced. Slowly my own design intentions emerged. Some of my changes were successful, others failures. I was a teacher living within the system-world I was creating. I treated my martial arts school like my own personal experimental laboratory where I would go about creating
curriculum plans, and then testing how they translated into lived experiences. Conversely, when something interesting developed in my teacher-student interactions I would try to systematize it. I didn’t limit myself to making small incremental changes, but often made radical program alterations. Nevertheless, certain institutional features like graded belt levels, and their accompanying set of patterns, persisted for a long time.

Ultimately, following my art teacher education I was finally able to articulate an emergent curriculum design that I intended to systematically help my students explore their own individual potential and interests by creating an environment that encouraged creativity and self-discovery. General principles were taught, but the specific use and application of these principles was left to the individual to discover. My curricular approach allowed my students to find their own abilities and limits, and those of their study partners. While my curricular system provided guidance, each student was challenged to find his or her own ability through his or her own expression of my system’s ideas. In short, I encouraged each student to create his or her own system of defence based on his or her own natural movements and instincts. My program was grounded in my underlying assumption that each student’s body has different anatomical variations in terms of height, weight, muscle mass, and range of joint motion. Similarly, physiological factors also differ, as do a person’s cardiovascular endurance, feeling of balance, clarity of sight, range of hearing, tolerance of pain, and capacity to recover from injury. Moreover, each person has different life experiences, values, attitudes and behavioural strengths. In view of these subjective factors, I felt as an educator I had a responsibility to each of my students to encourage and support them in adapting a course of study to one that fit closely with their own lived experience.

My final curriculum design had a beautiful elegance to it, a responsive system-world designed to serve the unique lived-experiences of different students and teachers. However, as an institutional enterprise, my project ended in failure. My martial arts school operated for over a decade; at its peak we had over 90 enrolled students and a teaching staff of seven volunteer instructors. While students had to pay a modest tuition fee, all teachers were volunteers. We collectively taught because we all loved to teach, and our school had a strong community feel to it. As one of the principal leaders, I relentlessly iterated the re-design of our curriculum. My friend, however, would have
preferred I made more measured and incremental changes, because our constant state of managing transitions was wearisome work. Our students clearly valued the learning environment we created, what they learned, and the community of relationships we nurtured. However, my radical and never ending curriculum designing frustrated both our students and instructors. It was particularly difficult on my friend and school cofounder and he left our collaboration, because I had lost sight of the particular life-worlds in my care that my system designing, ironically, sought better to serve. After a decade leading change in this curricular design project, I ultimately found myself in a state of physical, mental, and emotional exhaustion; consequently I made the decision to close my school.

3.6. School Based Practicums

My Art Teacher Education program included two school-based practicums, one shorter (merely two weeks), the other longer (approximately two months). These were my first substantive teaching experiences within the public education system. However, given the depth of my prior martial arts teaching experience I entered into these practicum experiences with more experience and confidence than is typical of most.

The first day in my practicum school I not only saw, but felt with visceral clarity how the school world that I had re-entered functioned as an artificial environment with its school subjects disconnected from the broader life-world components—culture, society and personality—that generated “real” problems. I felt the imposing institutional weight of this learning context. As a designer of my own learning, I empathized with the underlying student plight. That is, as Dewey (1916/2004) puts the situation, in the absence of real problems, “the pupil’s problems are not his [or hers]; or, rather, they are only his [or hers] as a pupil, not as a human being” (p. 150). I felt the faceless voice of the system prescribing its designated learning outcomes on the life-worlds of my students, and my own life-world as a teacher. As a result, little dialogic space appeared to exist for truly strong communicative action where the system’s validity claims could be challenged.

This bounded life-world generated its own “real” problems. Working within this horizon bounded by the surrounding school system, I observed how the real problem generated by this school environment for the students was most often the task of “finding
out what the teacher wants” (p. 150). It felt strange that I, as the teacher, was now an agent of institutional generated learning problems. Where, at best, as Dewey (1916/2004) puts it, the student studies, but “unconsciously to himself [or herself] the objects of his [or her] study [were] the conventions and standards of the school system and school authority, not the nominal ‘studies’” (p. 150). And, at its worse my students’ “real” problem was, “how to come near enough to meeting [the system-world requirements of school life] to slide along without an undue amount of friction” (p. 150).

Drawing on my prior teaching experience, I tried to acknowledge the reality of these “real” school problems, and then, expand upon them. Fortunately, art was a rather loosely defined school subject, and I had spaces within the official curriculum to make meaningful learning experiences.

The study of art is a creative act, involving the expression of the artist—in this case, the student artist. Art is an expression of what the artist sees, feels, thinks, values and believes. Drawing upon the material of the artist’s individual life-world the artist’s work is a reflection of his or her own identity. And, drawing upon the cultural and social material of the life-world, the artist’s work is a reflection his or her particular sociocultural times. Moreover, the historic and contemporary study of prior art, along with the broader study of visual culture in general is itself a creative act. Dewey (1934/2005) writes, “to perceive, a beholder must create his own experience” (p. 56). Given the creative and subjective nature of art, I had the communicative space for experimentation. The low definition of the official art curriculum gave me space to use art as a way for each of my students to understand their own particular sociocultural and biographic situation, and to empower them to express their identity and their relations to the world. Together, we acknowledged and explored our lives in the institution. In short, the real problems of school became the starting points for understanding our lives in school, how it stands in relation to our lives outside school, and how the two intersected.

While I still had to work within the confines of prescribed learning outcomes, I also had a relatively high degree of latitude to create the day-to-day curriculum. As a result of seeking to understand my students’ own lived experiences, and my responsibility responding to them in the ways that personalized the art curricula I taught, I faced few behavioural issues. This particular success was not because my classes
were filled with attentive and well-mannered students. Indeed, like most student teachers, many of my classes were filled with students who didn’t want to be there. However, by drawing upon my prior and concurrent experiences and experiments in both teaching and designing my martial arts curriculum, I believed that good curriculum design was critical to engaging students in learning. This is not to say I didn’t face challenges, I did. Or, that I didn’t make mistakes, for I did that too. Or, that my students didn’t find ways to surface my weaknesses, because they certainly did. What I did do was, first, try to understand my students’ biographic situation, then, help them to situate the subject I taught—Art—within the context of their own situation. The truly significant design insight I gained was that pedagogical problems in schools are curriculum design problems.

3.7. Designing a University's Website

As an art teacher education graduate I decided not to teach art in a high school. In the course of my search for an art teacher position I stumbled upon an opportunity to work as the website editor for a small liberal arts university. I pursued the position, and quite unexpectedly, I was hired. Upon starting my work in this design role, I found myself uniquely positioned to lead the university through a period of rapid and radical technological change. My purview as the website editor quickly evolved into a master planning role, and I became the architect for the university’s whole web enterprise.

As the website architect my work built upon the institution’s preceding efforts to computerize its administrative and scholarly life. The collective intention of this computerization process was to make the institution’s everyday functions and practices better ones. My work was historically situated within broader societal technology shifts in university life, which began with a move from hand written to typed documents, then, to ones being produced by digital word processors; along with a related move from paper bookkeeping ledgers to digital spreadsheets. Following the introduction of personal computers and productivity software, efforts were made to digitize and interconnect documents—such as, ones that had been stored in manila file folders in file cabinets, or the card catalogues of libraries holdings—and organize this newly digitized information in relational databases. By the time my work began in late 1999, computerization at my
university was well underway; however, its interface to the Web was limited to a single website of a few hundred pages. In the course of my tenure as website architect, nearly all aspects of communications converged, in part, or whole, with the university’s website.

My initial technical work involved creating, editing, and organizing a set of plain text documents, punctuated with Hypertext Markup Language (HTML) instructions. These web instructions, known as HTML tags, define the semantic organization and visual presentation of each webpage. Tags link a webpage to digital images, audio, and video—most often embedded within the page’s presentation. Alternatively, the tag might link to another webpage, or digital document. On their own these files and tags did little, but when I placed them in a special file directory, on a computer running web server software, connected to the Internet they became a part of the Web. In this way, web browsers on networked computing devices could access these simple computer files by a Uniform Resource Locator (URL) address via the Hypertext Transfer Protocol (HTTP).

The hyperlink changed the nature of documents. Weinberger (2002) observes, the Web is essentially “a loose federation of documents—many pieces loosely joined” (p. ix). Web designers like me, through our HTML coding connected a network of documents, one to another, making implicit textual relations explicit hyper-textual ones. As a consequence of our combined web making, we disaggregated traditional documents, “treat[ing] tightly bound volumes like a collection of ideas . . . that the reader [could now] consult in the order she or he wants, regardless of the author’s intentions” (p. ix). This transformation was not solely limited to the world of documents; “what the Web [had] done to documents it [was] doing to just about every institution it touch[ed]” (ix).

To understand the Web’s transformative impact on institutions requires us to consider the nature of an institution’s knowledge statements. Foucault (1972/2011) argues after their initial formation our knowledge “statements”, textual or spoken, sustain themselves within a “field” of use and exchange.

To say that statements are residual . . . is not to say that they remain in the field of memory, or that it is possible to rediscover what they meant; but it means that they are preserved by virtue of a number of supports and material techniques (of which the book is, of course, only one
example), in accordance with certain types of institutions (of which the library is one), and with certain statutory modalities (which are not the same in the case of a religious text, a law, or a scientific truth). This also means that they are invested in techniques that put them into operation, in practices that derive from them, in the social relations they form, or through those relations, modify. (p. 139)

Historically, knowledge in the university context had been preserved primarily through the material technique of the book, and related forms like printed journals and paginated papers. Institutionally, knowledge within the university was preserved through the library, the bookstore, publishers, and in many cases the university’s own press. From the emergence of universities in Europe in the twelfth century the book has largely given shape to its life. Ridder-Symoen (1992) recounts: “The book—the manuscript book, and from the last quarter of the fifteenth century the printed book—was vital to the intellectual life of the university” (p. 128). From its beginning and throughout the Middle Ages, to study at a university primarily meant one was to study great books. That is, one’s course of study—encoded in a syllabi document and by the fourteenth century often in statutes—involved mastering the “authorities” of a discipline through study of their seminal books, and others commentaries on them. This course of study involved two primary exercises, the lecture (lectio) and the disputation (disputatio). The former consisted of the “professor” reading out a canonical text, then, explaining it in segments; while “the audience followed the lecture in their own copies of the text and made notes” (p. 232). The latter, was an oral debate where theses, counter-theses, or cases which arose from a text or a comparison of texts was established, defended, or refuted. These disputes typically involved application of Aristotelian syllogistic reasoning, and depended on constant reference to the great texts of the authorities. In short, the book was central to university life, and its practices were shaped around this particular material technique of preserving the university’s knowledge statements.

The book form over time set in place design patterns that not only preserved the university’s privileged knowledge statements, but also shaped a certain kind of understanding. First described by the Roman poet Martial in the first century AD the book format was far more convenient, allowing for random access, compared to the preceding material technique of the scroll, which was accessed sequentially. By the sixth century the book had completely replaced the scroll. And by the twelfth century the
modular logic of the book had been further extended to include the slicing of narration into paragraphs, the division of chapters, the numbering of chapters and verses, the outlining of the book in tables of contents, the alphabetical arranging of glosses as glossaries, the indexing of subjects, the demarcating of interwoven quotations with punctuation (Illich, 1993).

In the context of the book’s use and exchange within the university, the material technique of the book became deeply integrated with the practices of scholarship, study, and teaching, and the institutional functions that supported these practices. While the book’s content was clearly contestable, its form was largely taken for granted. However, as Foucault (1972/2011) notes, “the frontiers of a book are never clear-cut: beyond the title, the first lines, and the last full stop, beyond its internal configuration and its autonomous form, it is caught up in a system of references to other books, other texts, other sentences: it is a node within a network” (pp. 25-26). The Web arrived in the university’s world of the book as a technological expansion of information design, which began encoding the broader network structure of knowledge, which had previously been beyond the reach of the book. With the Web, the Word became a node within a vast knowledge network. And old boundaries between ideas began to breakdown.

For instance, prior to the emergence of my university’s website in the late 1990s the university’s academic calendar was a bound print document in book form. Surrounding the calendar was a process of annual revision, wherein faculty proposed additions, deletions and changes to policies, degrees, programs and courses. These proposals would be reviewed, discussed and approved first by department heads, then Deans, and ultimately senior academic administrators. All these revisions were compiled and edited by one senior academic who worked in collaboration with an internal copy editor to prepare and publish each calendar edition. In its final printed form, the academic calendar represented the university’s overarching curricular document, defining all the program requirements, course titles and descriptions, standards of assessment, rules regarding plagiarism, and a range of other academic policies. The calendar was also the formal curricular contract between the university and its students. In short, the print calendar was both the official internal heart and external face of the university.
The Web’s arrival blew apart the university’s academic calendar. The Web was an alternative publishing platform, which allowed academic departments, and course instructors to extract specific curricular resources from the academic calendar and place these pieces into new contexts, such as, department and course websites. This new ability to publish to the Web directly allowed academics to circumvent the traditional print based institutional process. For instance, a change to a course or program could be communicated immediately on the Web, whereas before it was bound to an annual revision cycle. Similarly, due to the negligible production costs of the Web compared to printing, the Web allowed expanded versions of academic calendar content to be published. A plethora of unofficial academic sites emerged in the early years of the Web, in addition to the official academic calendar and marketing websites. Numerous, and often contradictory, instances of calendar content was placed into these various contexts, with all these bits and pieces linked together in new ways. The calendar on the Web no longer existed as a singular bound entity, but became a knowledge network.

Beyond blowing apart the traditional spatial boundaries of the academic calendar, the Web changed the calendar’s historic legitimacy in another way. Once printed, a book’s contents do not change without a material record, but the digital nature of the Web allowed changes to be made without any indication of what preceded it. The Web unseated the traditional academic process of production and use, challenging taken-for-granted assumptions about the document’s contractual relationship between the institution, its faculty, and its students. Even though I did not initially change a word in the academic calendar, my act of merely reformatting its contents to fit the web’s hypertextual form began to change the academic calendar’s mode of existence, its system of relations with its environment, its schemata of use, and its possibilities of transformation (Foucault, 1972/2011). Moreover, the economic cost savings of the web version led to the eventual displacement the print version. As the web version grew in importance, institutional processes surrounding the document’s production, exchange, and use changed. As a result of the document’s change of form from book bound text to web hypertext, institutionally, it also became a more adaptive, living document, which was now accessible to everyone and subject to more public deliberation and redaction.
What the Web did to the calendar, it did to most other curricula documents at the university. It even began to disaggregate traditional ideas about university teaching and study. The components of document bound course syllabi were extracted, ordered by informational schemas, and reintegrated into course management systems. The historic time and place of my work as a website architect presented me with the opportunity to participate in the convergent development of a class of information technologies referred to as web content management systems that now form the infrastructure for most websites and web applications, including course and learning management systems.

Initially, the work of building websites required manually coding and managing individual text files, as I described in the beginning of this section. As a website grew two problems emerged. First, given the static nature of hand-coded website design, adding pages increased the complexity of interrelationships between pages exponentially. For instance, if I moved a page on my website—that is, if I manually moved an HTML file from one directory to another on the web server—I had to, then, manually change every link I had made to that page. In some cases, this might involve making changes to thousands, or even tens of thousands, of links across an equal number of pages.

The second problem emerged from the fact that to build a website required specialized technical knowledge, which limited participation in making websites. As the size and importance of an institution’s websites grew, an increasing number of authors often became involved in creating web content. However, the technical complexities of manual web publishing made broad institutional collaboration difficult. All published was funnelled through a few technically competent individuals, creating a publishing bottleneck. Similarly, as the Web began to become an increasingly desirable place for communication exchanges between a myriad of different individuals, the need arose for less technical ways for the Web’s users to communicate and collaborate with one another.

In my work as a university website architect I faced both of these problems. My technical solution to these problems was threefold. First, I started breaking documents down into ever more discrete and structured data, and stored this data and its structures in relational databases. Second, I wrote scripts to retrieve, join, and sort this data, and
then, dynamically compose well-structured webpages and ultimately entire websites. Third, I designed web-based content creation, editing, and organization tools that decentralized the process of web content authoring. These web technologies that I made evolved into ever more sophisticated collaboration and communication tools.

I was not alone in the problems that I faced, and similar web content management systems (CMS) convergently emerged in many different places around the world. Today, they have become generic Web infrastructure technologies, powering an overwhelming percentage of the Web. For instance WordPress is a CMS, which at this writing powers upwards of 70 million websites. And MediaWiki is the CMS, which powers Wikipedia. All these CMSs allow authors, with a minimal level of technical expertise, to easily create and manage a distributed network of semantically structured, interconnected pages. Systems like MediaWiki are able to facilitate editorial collaboration on a massive global scale. The Wikipedia project—a free, multilingual, encyclopaedia, which is collaboratively edited by volunteers around the world—has now almost entirely displaced the traditional expertly curated encyclopaedias like the Encyclopaedia Britannica. Educationally speaking, the effect of Wikipedia and related projects on learning is significant, although its formal use is clearly controversial. I know many faculty who disapprove of Wikipedia use and I find most students do not explicitly cite it, but Head and Eisenberg (2010) found that “far more students, than not, used Wikipedia” to help them learn new ideas and find other sources. In short, Wikipedia has become a ubiquitous knowledge network, playing a supporting, and perhaps central, role in actual student learning within our Web age of learning. More importantly, it illustrates for me the disruptive power of the Web for collaborative content creation and communicative action on a massive scale, made possible by CMS technologies.

At this point in the discussion I want to stress that while my present regressive account has drifted into the deeper recesses of my technological experiences, and was therefore more technical, its significance to my study is that it represents my story of a bottom-up experience of emergence in becoming a curriculum designer in a university context in which I first designed its media foundations. Because of the historic situation I found myself within, I lived through the technical emergence the Web. Moreover, I experienced its birth and evolution within an educational and institutional context.
witnessed how the Web not only changed the nature of the texts used in learning and how those texts are authored, but how it changed the nature of educational discourses.

What I observed in my years creating and implementing web systems, and migrating our academic community from one system to another was an information technology system’s power to reconfigure an aspect of an institution’s life-world into its own image. That is, I observed that an information system’s design goes on designing as a social system. Here, I refer to system as an entity conceived as a coherent structure of elements, governed by rules. A system exists in relation to its environment, which means it must maintain its existence by bringing the complexity of its own governing rules into an appropriate relationship to those of its environment (Luhmann, 1995). A CMS or LMS may be understood as a technological system that maintains its existence within an environment—the social system of teaching and learning.

The educator’s practice and web software design are closely intertwined. As Dougiamas (2011)—creator of the MOODLE LMS writes, “the ‘shape’ of the software can help or hinder the teacher in what they are trying to do.” For instance, one of MOODLE’s rules as a social system is Dougiamas’ referent that “all of us are potential teachers as well as learners—in a true collaborative environment we are both.” Dougiamas and his collaborators have designed MOODLE’s activities, such as forums, wikis, and glossaries, to allow students to control the shared course content. Similarly, roles, which define what the administrators, the teachers, and the students can do in the system, are designed to make it possible for administrators to give teachers more administrative control over their courses, and also for teachers to allow “students more flexibility to do things that were previously thought of as something teachers should do.”

Technological systems, such as books, or an LMS like MOODLE are, in part, encoded knowledge statements, which exist within the discursive field of curriculum and pedagogy. Indeed, all knowledge exists within a discursive field. The critical insight that I want to identify in this regression is that in my years designing Web technology systems in a university and leading the university through successive technological transitions, I observed that my system designs changed other people’s practices. In short, I observed that as the system’s designer I gave shape to institutional practice. I also observed that it
is a technology's deep structures that go on structuring the structure of practice. For instance, it is the fundamental hypertextual structure of the Web, building on the book’s structure that has transformed the world’s knowledge into a vast network of knowledge networks. That is, a technological structure that goes on structuring study and teaching, in addition to the way we relate to each as social networks in life and business. Today, this deep technical structure which brought forth the Web is now entirely taken-for-granted, buried beneath layer upon layer of higher level abstractions, which in regards to the everyday design and use of the contemporary Web has become a normalized form.

### 3.8. My Leadership Studies

My web architect work unexpectedly placed me in an influential role within discourses that reshaped the design of the university itself. These factors became so significant to my work that I found it opportune to pursue advanced studies in leadership.

My graduate studies differed from previous school experiences. The program began with two experiential courses, where the organizational behavioural concepts of organizing, politics and leadership were studied through simulation. This value the program placed on learning through lived-experience and the ideological primacy the program gave to people had a profound impact on me, as this approach brought my course of study to life. In addition, my graduate studies introduced me to rigorous self-reflection. I learned how to reflect on my experiences and to dialogue with my readings as living texts. The nature of the readings was also noteworthy; they were highly relevant curated collections of scholarly book chapters, articles, and vast array of primary grey literature from a variety of the institutions presented in the program as case studies.

One notable thought leader whose writings resonated with me, was practitioner-scholar-educator, Peter Senge (1990a), who argued organizations ought to be places “where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together” (p. 3). Senge contrasts a traditional view of leaders—“as special people who set the direction,
make the key decisions, and energize the troops” (p. 340)—with a view of leadership in learning organizations, where “leaders are designers, stewards, and teachers” (p. 340).

Senge’s notion of leadership is based on the premise that “organizations, like individuals, can learn” (Salomon & Perkins, 1998, p. 16). According to this line of thinking, organizations reproduce themselves as “communities of practice . . . engaged in the generative process of producing their own future” (Lave & Wenger, 1991, pp. 57-58). Because organizations are composed of “individuals and larger units in different roles that involve different perspectives and values, passing information through their own filters, and with noisy and loss-prone information channels connecting them” (Salomon & Perkins, 1998, p. 16), an organization’s social practices are characterized by conflict and contradictions, which are continually resolved through the social learning process. Given that learning the “new” takes place within the context of the “old,” Lave & Wenger (1991) write “learning, transformation, and change are always implicated in one another, and the status quo needs as much explanation as change” (p. 57). The working out of contradictions within the context of an organization’s “social reproduction implies the renewed construction of resolutions to underlying conflicts,” making these “reproduction cycles productive as well” (Lave & Wenger, 1991, p. 58). In my role as a website architect I witnessed how the informational technology systems shaped social systems. Similarly, in my graduate leadership studies institutions were revealed to be a social technological form, which as an organizational structure also structured practice.

Senge (1990a) framed the work of leadership as a productive practice of working out of an organization’s emerging contradictions through the leader’s role as designer, steward, and teacher. For Senge, the leader as designer shapes the organization’s social architecture—it’s operating policies, strategies, and structures, in addition to its supporting learning processes. As a steward, the leader cares for the organization’s assets, most importantly its people. In addition, the leader as steward also cares for the organization’s “purpose story—[its] larger ‘pattern of becoming’” (p. 346) that gives unique meaning to members’ aspirations and their hope for the organization. As a teacher, the leader helps everyone in the organization, including oneself, “achieve more accurate, more insightful, and more empowering views of reality” (p. 353). More
importantly, this role is not simply about teaching people how to achieve organizational ends, but rather it is “about fostering learning, for everyone” (p. 365).

Senge’s (1990a) metaphors of the leader as teacher and leader as designer both resonated deeply with my own lived experiences. Regarding the latter metaphor, Senge presents an intriguing thought experiment, along with his anecdotal findings:

Imagine that your organization is an ocean liner, and that you are “the leader.” What is your role? I have asked this question of groups of managers many times. The most common answer, not surprisingly, is “the captain.” Others say, “The navigator, setting the direction.” Still others say, “The helmsman, actually controlling the direction,” or “the engineer down there stoking the fire, providing energy,” or, “the social director, making sure everybody’s enrolled, involved, and communicating.” While these are legitimate leadership roles, there is another which, in many ways, eclipse them all in importance. Yet, rarely does anyone think of it. (p. 341)

Senge (1990a) argues that “the neglected leadership role is the designer of the ship” (p. 341). Indeed, he suggests, “no one has a more sweeping influence than the designer” (p. 341). For instance, Senge asks, “What good does it do for the captain to say, ‘Turn starboard thirty degrees,’ when the designer has built a rudder that will turn only to port, or which takes six hours to turn to starboard” (p. 341)? As a university website architect I had observed that people’s work and my software designs were closely intertwined in the enterprise information systems I made—the shape of the web software that I created could help or hinder staff or faculty in what they were trying to do. And while I did not directly lead many people, as a system designer my leadership influence was broad.

Of the three metaphors, the idea of the leader as a steward was new to me. Broadly speaking, stewardship involves caring for an array of assets, including capital, technology, information, and people (Senge, 1990a). Greenleaf (2002) expands upon the human aspect, metaphorically describing the ideal leader as a servant who leads. He suggested the practice of leadership begins with one’s “natural feeling that one wants to serve” followed by a “conscious choice bring[ing] one to aspire to lead” (p. 27). According to Greenleaf, the “best test” of this aspiration, is to ask: “Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants?” (p. 27). The marriage of
Senge’s concept of the learning organization, Greenleaf’s notion of the servant-leader, and an assortment of other similar ideas shaped my conception of leadership.

Senge helped me identify and understand the leadership significance of my designing in an institutional context. Paraphrasing Lao-tzu, Senge (1990a) writes:

The bad leader is he who the people despise. The good leader is he who the people praise. The great leader is he who the people say, “We did it ourselves.” (p. 341)

Here, Senge uses Lao-tzu to illustrate, first, that leadership as design is often neglected, because “the functions of design are rarely visible” (Senge, 1990a, p. 341). Indeed, in my own experience as a designer in an institutional context, I had received little credit for my work as a website architect, nevertheless, over time I had observed that the web-based information systems I built were clearly important and acted to shape, in part, the way the whole university worked. Moreover, while my influence by way of my designs were not often recognized as acts of leadership, Greenleaf (2002) helped me see them as acts of servant-leadership. Second, Senge (1990a) uses Lao-tzu to illustrate that “the consequences that appear today are the result of work done long in the past, and work today will show it benefits far in the future” (p. 341). The implication of this idea for the leader as designer is that one’s organizational designs—as institutional texts—often extend long beyond their creators in terms of both space and time. Lastly, Lao-tzu illustrates that the best organizational designs should empower others to act.

3.9. Teaching Design

The semester I went to “Massive Change” at the Vancouver Art Gallery, I had begun teaching an undergraduate art course—Digital Design. I was provided little guidance regarding the course content, which gave me the freedom to be creative. Drawing on my own professional experience as the university’s website architect, my stated purpose for this course was to acquaint the Art student with the field of Graphic Design in the digital realm. While I could have limited my syllabus to merely web design matters, I wanted to take a broader inter-media approach. Moreover, I wanted to present my conception of the graphic designer as a creative problem solver, who is able to
investigate a visual design problem, create ideas to solve the problem, evaluate possible solutions, and activate plans to bring a design into being. The course introduced students to the basic concepts and techniques of graphic design through a series of creative assignments that I developed to teach visual literacy skills, encourage an awareness and refinement of their own creative process, and promote strong conceptual thinking. My course activities consisted of workshops and lectures, studio projects, class critiques, research and writing on design issues, and explorations of contemporary and historical designs. The summative assessment to this course was a portfolio review.

I modelled my classroom’s learning environment after a professional design studio. That is, I structured the class environment and activities to simulate the working environment of the professional studio. Having led a creative team of design professionals, and being familiar with the industry’s workings I believed the most important element for a prospective designer was the quality of the candidate’s portfolio of work, and their ability to present themselves well. Thus, I structured my coursework as a sequence of design problems that build up a professional portfolio by the end of the course. The students would, then, make their respective presentation as if it were a professional job interview, or promotional pitch to a new client. My preliminary lectures and assigned exercises exposed students to basics skills, which the students would then apply to real-world problems. These real-world problems were designed to surface new requirements, which required students to learn new skills and conceptual knowledge in order to devise appropriate solutions. The underlying emphasis of my course design was teaching my students self-study within the professional context of design, specifically the graphic design disciplines. My framework for this guided self-study was my own lived-experience of self-study—a reflection of what I have outlined in the preceding regressive moments.

Assessment presented a unique challenge, particularly given the diversity of student abilities. Some students had substantial technical ‘artistic’ skills and were looking for a course that gave them the digital perspective. Other students were technically inclined, but lacked ‘artistic’ ability. Still others had little to no technical or artistic ability. My course was classified as a core elective within the context of a liberal arts university, which meant my students’ academic disciplinary backgrounds were diverse; however,
most had strong communication and critical thinking skills. In addition, students had broad interdisciplinary background knowledge. I built on these common strengths and so my assessment strategy emphasized critical thinking, balanced with creative risk taking, conceptual development, and also technical craft. That is, students were asked to define for themselves the weighting of these three categories on each assignment. While not entirely successful this design allowed me to challenge students equally and at the same time accommodate different student experiences, by making these variables dynamic.

The wonderful thing I discovered in teaching a university course was the simple fact that it ended frequently. Prior to this point my primary teaching experience was with martial arts, which was structured as a cumulative assessment system, wherein each level of assessment also reassessed prior requirements. Consequently, every time I made changes to the martial art curriculum it affected everyone in the school at all levels, a particular burden for instructors. After my first semester teaching Digital Design it was over for those student, and I had a fresh group of students the next semester. This allowed me a new freedom to iterate my curriculum designs each course session. The following semester—spring 2005—I taught the same course, but my vision had been broadened by my exposure to the “Massive Change” exhibition. Inspired by that experience, I took a more integrative approach to the design arts, and included an exploration of environmental and industrial design, in addition to the graphic design focus in the first iteration of my course design. Also, I reconceptualised the technical orientation of graphic design as a broader conceptual construct—communication design.

In my second semester teaching, a new opportunity arose. The department chair of the Art program was planning to expand the current BA program into a BFA program with an array of specialist streams. As part of this program redesign, she asked me to design a set of courses for a digital design stream. I jumped at the opportunity.

The purpose I articulated for this new design stream was to prepare students for professional practice and graduate level studies in the various design disciplines. I structured my stream courses in a way that would allow students to be grounded in a full continuum of design practices, including environment design, object design and communication design. My goal was for students to learn concepts and skills needed to
engage in professional practice as an interdisciplinary designer within a diverse set of fields, such as urban planning, architecture, interior design, product design, fashion design, film, print media, and screen-based media. My overarching emphasis was on communication design, but put within the context of interdisciplinary design practice.

By fall 2005, my earlier technological approach to teaching design began to shift more toward the conceptual. While the technological was historically a prominent feature of design programs in the tradition of the Bauhaus, framed within the liberal arts context of my university I was challenged to think more deeply about how design was situated as critical scholarship. To begin with, I conceptually divided design, broadly speaking, into three parts: image, object and space. This division reflected the three primary types of design programs that I observed at colleges and universities around the world: graphic or communication design, industrial or product design, and architecture or environmental design. However, given my institution’s economic limitations to the number and type of courses my university could reasonably support, I had to seek a balance between these very real constraints and my desire for an interdisciplinary program design. My solution was to imagine a minimum set of courses that would encourage both interdisciplinary breadth and disciplinary depth. The primary conceptual problem that arose was trying to determine how design could be studied in a broad integrated fashion without following the graphic designer, industrial designer, or architect traditional patterns of practice.

The task of designing design courses situated within an art program presented another conceptual issue: establishing a scholarly distinction between art and design. I argued art practice was a problem generated by an individual’s act of expression. Clearly, the artist’s work is historically, culturally, and socially situated, however, its locus is largely a self-initiated act of creative expression, or cultural dialogue. Design’s problems emerge from the needs, wants, or desires of others. This problem-solution orientation of design lends it to having a more methodical and scientific approach to its study of form, space and creative order. The culture emerging from this more Technical-Rational science-based approach has often been at odds with the critical-creative artistic-based culture of arts practitioners. However, my own study of design emerged from within my study of visual art, so I viewed these two perspectives as complementary. Rather than create a cultural separation between these two discursive fields I shaped
the design of my courses in such a way as to create interdisciplinary dialogue not only between the design disciplines, but also between design and art modes of discourse.

Spring 2006, I continued to iterate design variations for my new design stream. My new thinking about program design also shaped the design of my Digital Design course, which I taught each semester. Indeed, it was the only space I could experiment with my ideas in practice. In my Digital Design course I continued to take a broad interdisciplinary approach, but I had observed that my students needed a stronger technological foundation. Given this was the only design course at the university, I tried to integrate more basics into their study. I introduced students to the digital tools and techniques of practice through a series of creative assignments that I thought would develop their technical skills, encourage an awareness of creative process, and promote strong conceptual thinking. The topics I set out for the course included vector drawing, raster imaging, typographic layout, 3D modelling, and motion graphics. My course activities still consisted of technical workshops and lectures, studio projects, group work, class critiques, and explorations of current and historical design technology. However, my return to a skills focus gave less time to the student’s conceptual development.

My classroom experience folded back into my overarching program design, where I was also struggling with similar technical versus conceptual trade-offs. My personal interest was in giving shape to a truly interdisciplinary program. However, I was becoming increasingly aware of the economic factors of the program’s implementation. I started asking bureaucratic administrative questions like how many students will likely enrol? How many instructors will the program need and in what discipline areas? What facilities will be needed? The answers to these questions began to limit what was actually possible. The simple solution would have been to abandon my interdisciplinary vision and narrow the scope of my stream design to one discipline—graphic design. However, while this discipline was the most economically viable and the design discipline I knew best, I remained committed to taking an interdisciplinary approach.

By mid-semester, Spring 2006, my interdisciplinary design stream curriculum coalesced into a preliminary design proposal, composed of the following core courses:

1) Design & Designing
2) Graphic Media Design (planned to replace Digital Design)
3) Image & Illustration
4) Symbol & Typography
5) Format & Layout
6) Interface & Interaction
7) Object & Space
8) Motion & Interaction
9) Material & Sensation
10) Interaction & Experience
11) Integrated Design Studio I
12) Integrated Design Studio II

As a further abstraction of my technological analysis of the design arts, I imagined these courses as spaces where both conceptual and formal inquiry would be explored.

The chair of the Art department and I selected Symbol & Typography as the first new course I would implement. This decision introduced me to the bureaucratic and political process involved with creating a new course within the university. I had to develop a detailed new course proposal, which articulated curriculum shaping components, pragmatic issues (such as, budget analysis, facilities impact, library impact, technology impact, instructor availability), a proposed syllabus, a detailed department chair endorsement, library endorsement, and technology coordinator endorsement. By the end of the Spring 2006 semester the course was approved and I was set to teach it in Fall 2006. Going through this process also revealed to me that the university had a required standard for structuring my syllabus. This standard syllabus was divided into six parts: description, objectives, texts, activities, assessment, and outline of activities.

Fall 2006, I refactored my Digital Design course design to fit the university’s syllabus standards and I narrowed my integrative approach, focusing the course on digital graphic design practice. My students still explored the digital design tools and techniques through a series of creative assignments to develop technical skills, encouraged an awareness of the creative process, and promoted strong conceptual thinking. However, my topics became more technological in nature. My rational for this
change was that I could now shift the focus of this foundation course towards technical fundamentals, because I had a new upper level course—Symbol and Typography. In this new course I explored the history, theory and craft of typography and symbol design. It integrated the technical, conceptual and praxis. Students were encouraged to become aware of the messages inherent in graphics, as they use descriptive, symbolic and typographic design elements to solve various communication problems. The major course topics that I covered were glyph development, letter forms, setting text, grid systems and professional practices. I used studio work and assignments to explore type's relation to image, information systems, media forms and cultural contexts. And, in the last half of the course I had the students work on projects for real clients.

Spring 2007, the increasing technological emphasis of my Digital Design course softened slightly, and I shifted my focus to the use of technology in relation to the practices used by communication designers, and added more critical “design thinking”. This move reflects my new thinking about design education as a liberal art. Thus, the notion of critical “design thinking” became a focus of my teaching in Digital Design and the next upper level course I started to teach—Image and Illustration. My intent in this new course was to explore the enhancement, manipulation and production of images for design, the use of raster and vector software technologies, and the creative process from concept to final production art. That is, I attempted to integrate the technical, the conceptual, and professional practice in regards to a particular aspect of communication design—the image and its communicative role in design. Thus, principles of visual storytelling and conceptual image making were also investigated. And the professional practice of solving the practical design problems of verbal to visual idea translation were considered in a variety of applications, such as advertising, publications, software, and film. Moreover, the technical, the conceptual, and professional practices taught in the course, were all situated within critical contemporary and historic design discourses.

Little changed in my Digital Design course during the 2007-2008 academic year, however, in the Spring 2008 I introduced a third design course—Format and Layout. This third upper level course explored the integrating layout elements, principles, and strategies used by graphic communication designers in both print and screen media. The technical topics I covered included composing form and space, using colour
schemes, designing with type, illustrating with imagery, and organizing content for usability. The context of my assignments considered the layout of books, periodicals, brochures, advertisements, promotional displays, websites, and screen devices. Again, the technical, the conceptual, and professional practices taught in this new course, were all situated within critical contemporary and historic design discourses. In this course more than the others I found success creating a space where my students and I could co-create the learning experiences of the course in response to real client needs. At the beginning of the course I had the class divide themselves into small teams, which then found their own clients and worked through the semester as a mock design firm. The students collaborated with each other and the client first to define the design problem and then to develop a satisfactory solution for the client. All the technical, conceptual, and professional practices that I taught emerged in response to each client's problem.

The 2007-2008 academic year also saw my work on my design stream expand into a full BFA proposal. The scope and complexity of my design work expanded significantly. One new complicating factor was a new institutional requirement to conform to a set of external accreditation standards for art and design programs, specifically the policies and procedures of the National Association of Schools of Art and Design (NASAD, 2007). Statements, like the following, began to structure my designing:

Studies in design comprise 25-35% of the total program; supportive courses in art and design, 20-30%; studies in art and design history, 10-15%; and general studies, 25-35%. Studies in the major area, supportive courses in art and design, and studies in visual arts/design histories normally total at least 65% of the curriculum. (p. 89)

Up to this point in my program designing I had envisaged integrating theory, practice, and history into each and every course of the program. Each course in my design defined a space for a particular type of design problem to emerge, with an associated set of resources to help students define and solve this type of problem. The NASAD specified program logic in terms of types of programs, with types of courses, in different component percentages. The sort of deep interdisciplinary integration I was imagining in my emerging program design did not easily fit these standards, or at least in the way that these requirements were being interpreted in my institutional discourses.
My design intent for deep interdisciplinary integration was increasingly being constrained by institutional economic limitations, disciplinary accreditation programmatic logic, and ideological tensions between design and art within my academic unit. In my final proposal my design was a communication design program, but framed in interdisciplinary terms. That is, I designated an integrated set of subjects that dealt with visual perception, communication, interaction and cognition. My program intent was to develop learning experiences with an emphasis on the technical and aesthetic “how” of visualization, the expressive “how” of communication, and the critical “how” of (re)framing design problems in an interdisciplinary and collaborative way. Moreover, I envisaged this practical and broad study of design within a web of historical, theoretical and critical contexts, wherein students would explore the potency of design in social terms and how it powerfully creates and changes the world(s) within which we live. In sum, I reimagined the technological nature of graphic design as a humanistic discipline. The technical character of my core courses was reframed in more open humanistic ways. The technical was still important but it was placed in tension with its role as discourse. For instance, note how I conceptually reframed the following courses:

- “Image & Illustration” became “Iconographic Communication”.
- “Symbol & Typography” became “Typographic Communication”.
- “Format & Layout” became “Designing Communication Systems”.
- Human-focused courses like “Design and Social Change” were also added.

In 2008 the failure of Lehman Brothers led to a global financial crisis that affected many institutions, including my university. The prospect of launching a new BFA degree in Design, which required building new facilities, outfitting them with new technology, and hiring new faculty, quite simply evaporated. However, while my dream of launching a full design program increasingly felt dim, my ideas continued to evolve regarding design as a liberal art and this thinking was still reflected in the courses I continued to teach.
Chapter 4.

The Progressive Moment

This is my progressive moment, an anticipation of the future in the present, based on Pinar’s (1975b) idea that the “[future] influences, in complicated ways, the present; it forms the present” (p. 11). To understand the future I must consider the future’s existence in the present, because “the future is present in the same sense that the past is present” (Pinar, 1975b, p. 11). In short, the future presents itself in the present. Stylistically, this is a poetic and imagistic moment. It is a subjective imagining of things, not an empirical or logical argument predicting future events. Thematically, it is futural. Knit together, it is my imagining of a future within the context of our present evolving historic conditions. Put simply, this moment is the imaginative story I tell about the future emerging in my experience of the present within those educational settings that influence—indeed, forms—my present everyday practice of making curriculum. Pinar (1975b) argues, this “moment of currere may not elicit fantasies of the future in a literal sense, just as the regressive phase may not recall remembrances of the subject’s past” (p. 125). The implication for the futural moment to follow is that it is only one of many possible futures—a possible future, structured by my emerging conception of study and its design. It is a description of where my interests in study and its design have been leading me, how these relate to the private life of study I’ve designed, and how these two things relate to the evolving historical conditions that I live within.

4.1. Study as Emergence

My present world of study is as a doctoral student in the field of curriculum. I continue to teach, but it is the story I tell about my doctoral student experience, which best describes where my interest in curriculum design has been leading me. My doctoral studies began as an entering into a vast historic conversation of Western educational
thought. My starting point, as one of a group of doctoral students, was a passage from Plato’s *Meno* where Socrates engages in dialogue with Meno’s slave, demonstrating to Meno that his slave is capable of learning a geometrical truth, because “his soul ... always possessed this knowledge.” Beginning from this starting point, our discourse flowed forward in time to the present as an emergent conversation. Following *Meno* we read Plato’s *Republic*, with particular consideration given to Plato’s ideas about knowledge, the good, and social order. In the context of Plato’s world our conversation momentarily moved beyond the West to consider Lao Tzu’s *Tao Te Ching*, identifying critical differences and similarities between early Western and Eastern thought. The divergence was brief, but it made me mindful that there are histories of educational thought beyond the Western one. The current of Plato’s dialogues brought us to the texts of Aristotle, who subsequently critiqued and revised Plato’s ideas, and significantly expanded the historic conversation by generating his own new ideas. We briefly skimmed over the Roman story, noting a few of Cicero’s contributions, and we gave Augustine’s *On the Teacher* a close reading. From Augustine we jumped forward to Aquinas who stood at the heart of the Middle Age’s intellectual development. Aquinas’ marked an historic feedback loop that led us to trace back the histories of Jewish and Muslim thought, including key works by Maimonides, Averroes, Ibn Tufayl, Al-Ghazali, and Al-Farabi. Returning, once again, to the continental European discourses, our conversation moved through the Renaissance highlighting Erasmus, Comenius, and Montaigne. Then, with the works of Bacon and Descartes we crossed the threshold into early modern discourses. Key texts by Locke and Rousseau were then read. Ultimately, our conversation radiated into a multiplicity of modern histories, punctuated by Pestalozzi, Wollstonecraft, Froebel, Dewey, Steiner, Whitehead, Buber and Montessori.

A unique characteristic of my experience studying the *History of Educational Theory*—my first doctoral course, which I have just described above—was its unfolding pattern as an emergent conversation. This experience of study is characteristic of the theory and practices of “the educators of Reggio Emilia [who] perceive the curriculum as emerging from the interests and ideas of the children” (Fraser, 2006, p. 162). Knowledge, I observed through the process of my own re-experience of its historical conceptualization in the course of my own study, appears to be rooted in human interest.
As Habermas (1971) puts it human interest is the cognitive precondition that makes knowledge possible. Briefly summarized, Habermas argues that knowledge emerges from human interest, and this knowledge constitutive interest is bound to the limits of a subject. As a result, knowledge is subjective, which is simply to say that it is bound to the existential limits of the subject from which it is said to have emerged. As the subject of an emergent study, its limits were bound by my life-world context and my shared life-world, which was composed of my fellow doctoral students and my professor. Given that knowledge is subjective, I as a particular student necessarily have a point of view in the process of shaping the direction, nature and quality of my own study experiences. Through my professor’s act of situating the history of curricular inquiry and implementation in the course I described above in the subjective worlds of student’s study, including my own, I experienced firsthand an emergent making of curriculum where our autonomy as students was recognized in formal terms. As students we were given active roles in our course of study and in our construction of knowledge, which was directly tied to our interests. This masterful educator powerfully illustrated for me how to listen to students and to surface their interests and ideas.

The educators of Reggio Emilia also “believe that there should be negotiation between all those involved in the development of the curriculum—in the planning and in the projects as they unfold (Fraser, 2006, p. 162). That is, while study emerges from the interests and ideas of students, because this learning is socially situated it must also involve negotiation between the social actors involved. This negotiated aspect of the emergent design of study was another significant component of my doctoral studies experience described above. Indeed, my doctoral studies experience began, in a rather open-ended way. And, within the broadly given topic—the History of Educational Theory—we agreed and committed to a shared agenda that emerged from our collective interests as a group. We decided to begin with Plato’s account of Socrates’ thought, then, trace the historic conversation in a somewhat evenly divided fashion through to the twentieth century. Moreover, we agreed to give the most space to the Western conversation, but to also include other perspectives. Our conversation was cooperative, reflective of other’s thoughts, feelings and experiences, and deliberative in the way we located and agreed to our emerging agenda of what to read and discuss. Each reading
was talked about and questions were raised, which led our group to read other writings (and thinkers), which influenced, or were influenced by, what we read and discussed.

Our method of inquiry involved a spiral process moving between historic texts, their contexts, and our texts, and contexts; first, we would expose some relevant, interesting, or intriguing, historic developments in educational thought that was standing beneath our contemporary situations; then, we reflected on possible historic meanings of these past developments within their own time and place, and ultimately, we made personal connections to our own lives and times. In this way, the histories of educational thought re-emerged discursively for us as our own lived experience—not a strict recapitulation of the past, but a critical archaeology of sedimented histories.

This emergent course of study, and the responsive teaching that brought it forth is a futural image of my teaching and designing of curriculum in the context of my present experience of my doctoral studies. Formally modelled and encouraged through a thoughtful teaching relationship in an institutional context of the highest social order—a doctoral program in curriculum theory and implementation—this experience has served to legitimize for me what has been my intuitive approach to study and teaching. It also brings to the surface my interest in theorizing about the design of my own study, while I am immersed in this design of my own study as a doctoral student in curriculum studies.

4.2. Curriculum and the Evolution of Ideas

My present world of study as a doctoral student is backward looking. My studies began with the concerns of the past and I’ve become most interested in looking at the history of the ideas that stand underneath my present situation. Consequently, my progressive moment focuses on my study of the past and my interest in what the past has sent to the present. While this personal study is historical in nature, as my act of currere, it should not be misunderstood as a regressive moment. It is, indeed, futural in that it is my anticipation of the future in my present study of past ideas. The future I anticipate in regards to my study of study and its design is that it will continue to emerge, as it has emerged historically in the evolution of ideas over time. In short, my image of
the future in the present is that ideas about study, teaching, curriculum and curriculum design are acts of design, designing worlds that go on designing other worlds.

Schön (1963), drawing on the metaphor of evolutionary biology, suggests that new concepts “emerge” from old ones (p. 8). He argues that we bring forth the new from the old, without reducing it to the old through a process of figurative, approximate, and analogous displacement. To recap my earlier sketch of this process, it may be understood as an act of comparison; “juxtaposing the old and the new, so that they can be ‘seen as one’ (pp. 25-26). However, concept formation may be further understood as a form of error. That is, trying to make sense of a genuinely new situation with old ideas leads one to make conceptual errors. For instance, when one forms a hypothesis (even a scientific one), one often makes numerous mistaken assumptions, which one then (systematically, in the case of the sciences) tests and corrects through experimentation. Similarly, use of old concepts to make sense of new situations often leads to novelty. In one’s frustrated attempt to subsume the new under the old one comes to new understandings of the new—the old acting as a metaphor or symbol of the new.

The process of making, elaborating, and correcting the metaphor representing a new concept can be understood as four phases: transportation, interpretation, correction, and spelling out (Schön, 1963). Transportation is the initial use of an old concept for a new situation. “The process of transportation is complicated,” according to Schön (1963), “by the fact that there are in ordinary thought and discourse no isolated concepts, but only concept clusters or, in an informal sense theories” (p. 54). Interpretation is the specific assignment of particular attributes of the old concept for the new situation. Because every new situation has some form of pre-existing structure, “there is resulting adjustment in the process of displacement” (p. 55). Schön calls this correction. The process of correction is bi-directional, wherein, both “the old theory and the new concept-structured situation are modified in various ways so as to suit one another” (p. 55). This mutual adaptation may involve aspects of the old theory being rejected for transportation to the new situation, or more than one of the old concepts may be compounded to fit the new situation better, or the interpretation given aspects of the old concept by be changed. As use of the new concept become less figurative and
more familiar and legitimate its theorizing also tends to become more formal. This formalization of a new concept’s theorizing is the final phase, called spelling out.

Schön’s (1963) theory describes the inherent evolutionary design process that is present within the social construction of knowledge. In the course of my present studies to understand curriculum design as an institutional text, my interest is directed at the way these terms have been brought forth as metaphorical structures that go on structuring.

The first term to bring under this conceptual inquiry is curriculum. What is curriculum? Put simply, it is “what is to be taught and how” (Alexander, 2001, p. 549). Framed more broadly, “curriculum communicates what we choose to remember about our past, what we believe about the present, what we hope for the future” (Pinar, 2004, p. 20). Many definitions are, in fact, possible, but what is critical to understanding curriculum is “all [these various] definitions are parts of arguments” (Jackson, 1992, p. 12). In this way, the “enacted” curriculum, the “delivered” curriculum, the “received” curriculum, the “experienced” curriculum, the “hidden” curriculum, and so forth, are all “rhetorical structures” (p. 12). As rhetorical structures, they all “attempt to persuade us to conceive of curriculum in particular ways” (Pinar, et al., 1996, p. 28). Even the traditional definition of curriculum, as a course of study, began its life as a rhetorical figure of speech. Its secure appearance within many of our curricular discourses is merely a consequence of its familiarity. That is, we have become so accustomed to this historic Latin term that “once referred to a race course” that we have forgotten that “its first application to education was surely metaphorical and, hence, a rhetorical one” (Jackson, 1992, p. 12).

As Egan (1978) explains, the initial Latin meaning of the word curriculum “was ‘a running,’ ‘a race,’ ‘a course,’ with secondary meanings of a ‘race-course,’ ‘a career.’” (p. 66). How did the term first develop as an educational metaphor? Egan cites two formative uses by Cicero. First, he cites (and translates) a “neat epigram” from Pro Rabirio: “‘Exiguum nobis vitae curriculum natura circumscripsit immensum gloriae’ [Nature has confined our lives within a short space, but that for our glory is infinite]” (as cited in Egan, 1978, p. 66). The term ‘curriculum’ is used here by Cicero to metaphorically describe the lived experience of human life as a limited temporal space—
“a course” of life, or vitae curriculum. The term is transported by Cicero from its old reference to a “race-course” or “a running” to a new situation—one’s experience of one’s life. His interpretation assigns the temporal-spatial boundaries of the race course to the horizons of one’s lived experience. He also assigns the attribute of winning a race to an ends aspiration of living one’s life toward a lasting recognition of one’s achievements.

The second quote Egan cites is from De Senectute, which Cicero wrote later in his life: “Hae sunt exercitationes ingenii, haec curricula mentis” [These are the spurs of my intellect, the course of my mind runs on]” (as cited and translated in Egan, 1978, p. 66). Here, Cicero has “corrected” his metaphor, to use Schön’s (1963) term, narrowing Cicero’s interpretation of the old idea’s attributes to the lived experience of his intellectual pursuits—his “courses” of study. The temporal space of Cicero’s early notion of vitae curriculum is contracted to delineate the more limited confines of the lived experience of study—that is, the life-world of study. Cicero describes study as being like a course, or path, that his intellectual pursuits follow, or run on. Egan argues that this contracted correction of temporal space, however slightly, represents an interpretive shift from the idea of curriculum as “container” to curriculum as “content” (p. 66). Curriculum is no longer merely a span of lived experience, but particular activities unfolding within the horizon of that experience.

When Cicero writes about “the courses” his mind “runs on” he is making an interpretive reference to his personal acts of collecting accounts of ancient history, editing his past speeches, investigating matters of law, reading Greek literature, and reflecting on his daily state of affairs. Several things are notable about his activities. First, he identifies multiple courses of study, which suggests that curriculum is not a singular phenomenon, but one with variation and variety. Second, we may note the primacy of texts, in both written and oral forms, as the contents of his studies. Third, the nature of his curricular work is editorial and organizational. In anticipation of syllabi and synoptic texts he is engaged in conceptual survey, selection, and structuration of the contents within his courses of study. Lastly, his curricular work is autobiographical, wherein his continuous reflection situates himself within his courses of study. In addition, Cicero conceives of his courses of study as being nested within his broader course of life, stating he is a person who “lives always amid” (11.38) his studies.
While seemingly absent from educational usage throughout the Middle Ages, Jackson (1992) notes that the term curriculum reappears in a document from the “University of Glasgow in 1633” (p. 5). Here, Jackson refers, by way of Hamilton’s research (1989, 1990, 1999), to Peter Ramus—“schoolmaster, headmaster, Regius Professor of Logic” (Doll, 2008, p. 190). Hamilton’s (1989) review of Northern European university records revealed that the only other mention of this early usage of curriculum was in 1582 at the University of Leiden (in the Netherlands). Furthermore, he suggests, “the most obvious connection between these two institutions is that, during the late sixteenth-century, both were heavily influenced by Calvinist ideas” (Hamilton, 1989, p. 44). Within this post-Reformation context the notion of curriculum denoted a singular educational entity that embodied both “‘disciplina’ (a sense of structural coherence), and ‘ordo’ (a sense of internal sequencing)” (p. 45). Thus, in both Glasgow and Leiden, curriculum was “a series of disciplinary oriented courses leading to a degree” (Doll, 2008, p. 191). This further correction of the curriculum metaphor introduced the idea that a course of study was something to be completed and not merely followed. Previously, “the sequence, length and completeness of medieval courses had been relatively open to students negotiation (for example, at Bologna) and/or teacher abuse (for example, in Paris)” (Hamilton, 1989, p. 45). This correction and subsequent spelling out of the curriculum metaphor “brought a greater sense of control to both teaching and learning” (p. 45). Commenting on this point, Jackson (1992) observes, “at the heart of the word’s educational usage, therefore, lies the idea of an organizational structure imposed by authorities for the purpose of bringing order to the conduct of schooling” (p. 5). From Cicero through to Ramus, curriculum increasingly becomes a structure that structures.

The story of the conceptual spelling out of the idea of curriculum has continued into modern times as Doll (2008) summarizes, from Ramus its continuing evolution runs, through Johann Comenius and Rene Descartes, into Puritan thought on both sides of the Atlantic, then into New England schooling, to American 19th century schoolbooks and that century’s efficiency movement (epitomized by Frederick Taylor), and comes to culmination in what today is known as the Tyler Rationale (p. 192).

And, with the contemporary discourses of re-conceptualists, notably, Pinar et al. (1996) the metaphor has been corrected again to give primacy to human experience. In
fact, it is a recovery of something that was lost from Cicero’s formative metaphor—that is, a re-transportation in Schön’s (1963) terms of “the Latin infinitive form of curriculum [which] means to run a course, or, in the gerund form, the running of the course” (Pinar, 2004, p. 35), corrected and spelled out as re-conceptualized curriculum. And, it is in re-conceptualized curriculum that I discovered study was the site of curriculum. In my regressive moment I experienced both remembrances of my personal life-world of study, wherein my own structuration of learning emerged and also of a surrounding of world of language systems, programs of study, syllabi, synoptic texts, and grading work that I felt imposed itself upon my life-world of study and whose legitimacy I could not easily challenge. As I became more active in the design of my own personal study, and also of others’ study, I found myself living in a state of tension between these two worlds. Initially, I tried to resolve this tension by making my life-world of study fit more closely with the artifactual world of curriculum as institutional text. However, in doing so I would lose myself, because in fitting myself into the institutional text I became disconnected from my own lived-context of study, or the lived-contexts of my students’ study. As I gained understanding and confidence as a designer over time I became increasingly aware of the artifactual nature of the world of curriculum as institutional text, and that I could frame this world as a design problem for redesign, fitting it to the world of study. As a doctoral student I am experiencing what had previously been my own emergent design as an institutional revealing. From this insight I anticipate the future of reconceptualised curriculum design will arise from the understanding of study as the site of designing.

4.3. The Life-World of Study

What is study? The term comes into English as a shortening of the Old French noun estudie, and its verb form estudier, both based on the Latin term studium. Cicero provides us with a formative use of the term in De Inventione: “Studium est autem animi assidua et vehementer ad aliquam rem adplicata magna cum voluptate occupatio, ut philosophiae, poeticae, geometricae, litterarum” [“Study is the assiduous and vehement occupation of the mind applied to anything with great eagerness (voluntate), as the study of philosophy, geometry, letters.” (as translated in O'Malley, 1881, p. 269)]. Cicero’s notion of study turns on the idea that it is a particular sort of practice he characterizes as
an "occupation" of the mind, specifically, mental work that has to be done, or matters of the mind that have to be attended to. Study is a careful application of this mental attention to a subject of inquiry. Indeed, study is an act of considerable labour as Erasmus (1965) writes in his dialogue The Art of Learning, “For my part, I know no other art of learning than hard work, devotion, and perseverance” (p. 461).

Cicero’s definition also suggests study is a zealous act of pleasure. He argues study is not merely the laboured devotion of time and attention to acquiring knowledge on a given subject, but rather a passionate pursuit of knowledge, understanding and practical wisdom. Commenting on Cicero’s definition, O’Malley (1881) writes,

Whatever we strongly love we desire to possess, and if we see any probability of our efforts being crowned with success, we strain every nerve to make it our own. So intense is the pleasure of the votaries of knowledge as she unfolds and offers them her treasures, that labour ceases to be labour, or, if you will, becomes a labour of love, and receives a name which indicates its agreeable nature. (p. 269)

Pleasure, here, is not limited only to a life of leisurely study, but is at its heart an act of utility to win self-control through self-formation. This act may take many forms. As McClintock (1971/2000) puts it, “the ways of study are as diverse as the ways of men (sic), for both result, not from conformity to outward precept, but from the aspiration to assert inward control over the moving conjunction between one’s self and one’s circumstances” (para. 13). The implication of McClintock’s insight is that, while the highest goal of study—such as, Plato’s pursuit of the “Good,” or Aristotle’s human “flourishing”—may be similar, “the path, the course of study, that leads to the goal will differ for each: thus the study appropriate for the quiet cleric will not suit the proud prince, the worldly merchant, or the sturdy artisan” (para. 14). Study emerges from the unique life-world’s of those who study—the subjective human interests of students.

For McClintock, “study itself is neither a single path nor the final goal; it is the motivating power by which men (sic) form and impose their character upon their role in life” (para. 14). I agree with Pinar’s (2006) comment that McClintock’s use of “the verb ‘impose’ is too voluntarist and essentialist,” and more importantly, that any “reinvention of ourselves is limited, and occurs, yes, through acts of ‘will,’ but, as well, through waiting, withdrawing, dissimulation” (p. 112). More importantly regarding the individual’s
practice of study as self-formation, I, like Pinar, share “McClintock’s sense that there is an ethical, even, we might say ontological, call to “be here,” in Sartre’s sense of ‘engagé’” (p. 112). Indeed, the art of study as articulated by McClintock and expanded by Pinar is not something, which is bound to formal curriculum. McClintock reminds us that all of culture, and nature, can be educational. Going back to antiquity, Hutchins (1968) notes that “education was not a segregated activity,” but rather as was the situation in Greece, “the Athenian was educated by culture, by paideia” (p. 33).

Building upon study as self-formation is my subjective habit of making sense of the world and finding my own way in it. It is a movement of thought characterized by Pinar’s (1975b, 2004) conception of currere, a running within the lived-experience of my own life-world, shared life-world, and surrounding life-world. Understood as currere, study is my subjective act of structuring an objective world, upon which I impose my own idiosyncratic subjectivity, which this world, then, embodies as my world of thought (Grumet, 1975). It is an attentive and open dialogue with the world of my lived-experience made possible by human language, which makes study discursive. As the dialogue with my lived-experience study is a reflective act where I both reflect in and on my experience (Schön, 1983). Through study, I prepare for future action by using my experience of the past. I reflect on present action, building upon what I already know. And, I consider what I don’t know, or what I think I know but don’t really, to estimate emerging opportunities, and predict future action by imagining the impossible and determining new capabilities. Study, writes Pinar (2015), “provides that knowledge from which we exercise judgment, as we reflect not only on the possible consequences of that step we’re about to take next, but the effects of steps that we have taken before” (p. 192). In sum, study is a converging and emerging of my past, present and future.

The unforeseeable future, the not fully accessible present, as well as the persistence of the past, converge to contribute to the gravity of study, even when it is conducted playfully. Study acknowledges the mystery saturating everyday life, thereby decentering the self as it redirects our attention to reality in which we live. Steadied through study we can reactivate the past in the present, unsettling our sense of what is at stake in the situation we face today and tomorrow. Studying the past permits us to anticipate the future. Not only temporality structures study, so does space, as the boundaries of one’s world blur into the world, which we know extends well beyond our capacity to apprehend it. (p. 192)
Bound by a space and a time, study is a particularity, not a generality. Study is embodied in individual lives, it is a place and situation “saturated by meaning, with culture and history as these are personified in specific people with whom we live as neighbors, fellow citizens, and humanity” (Pinar, 2015, p. 192). The critical insight that emerges in this progressive moment is the idea that “study is the site of education” (Pinar, 2006, p. 112). As such, it can be argued that study is the ground upon which the curriculum as institutional text is built. While I acknowledge that Pinar would argue that study takes one beyond the institutional text, study is also the site from which the institutional text emerges as something designed. And in the instituting of curriculum as something designed—implied by the Latin root of the term institute—it is the life-world of study where some ground must be cleared. It is from the individual lives that embody study that currere becomes curriculum. The life-world of study is where curriculum has historically emerged, and where it still resides.

How the institutional text of curriculum has emerged from the resources of the life-world of study is where I now turn. In making this move, the merit of my developing argument is not its historicity, but rather its subjectivity as an expression of my present theorizing about my study in anticipation of a future theory of curriculum design and its re-conceptualization. Thus, the following is my present impression of historic threads that are giving shape to my future thinking about designing curriculum as text. Thus, as is the nature of study in the context of one’s individual life-world, my conception represents a momentary unity, but is not to be interpreted as a totality in a modernist sense. Indeed, this moment is subject to further change and revision as the course of my study unfolds.

4.4. Rationalization of Study

The life-world of study is not a static background, but involves change, learning, and acts of designing. As the life-world becomes more diverse and complex, its structural components and processes get differentiated, which is to say, the life-world of study becomes increasingly rationalized. Generally, the taken-for-granted assumptions of the life-world of study serve people pretty well; however, when they disrupt life, persons are forced to question their own assumptions and those of others. This process
of critical questioning leads to innovations and learning: new ways to think about the world emerge, new ways to coordinate action are enacted, and new competences formed.

Habermas (1984), suggests that these life-world differentiations, understood in broad cultural, social and personal terms, give rise to interaction contexts that increasingly “come under conditions of rationally motivated mutual understanding, that is, of consensus formation that rests in the end on the authority of better argument” (p. 145). His notion of a rationalized life-world is similar to Max Weber’s (1952, 1958) argument that the global “superiority” of the West was a consequence of its greater social rationalization. For Weber, this was “expressed in the greater and more consistent use of instrumental reason, not merely through highly efficient technology but also through effective administration and social organization, rationally consistent legal and moral systems and even more rational art” (Edgar, 2006, p. 128). While I think Weber’s argument is too simplistic, I nevertheless find the idea of instrumental reasoning helps me to explain the emergence of institutions, including the curriculum as institutional text.

In his redaction of Weber’s rationality Habermas (1) points out that the life-world is never fully rationalized in an instrumental sense, and (2) he places the focus of life-world rationalization on communicative rather than instrumental reason. The rationalization of the life-world for Habermas is first of all a differentiation of validity claims. In this regard, “a rationalization of the lifeworld can be systemized under three perspectives: (a) structural differentiation of the lifeworld, (b) separation of form and content, and (c) growing reflexivity of symbolic reproduction” (Habermas, 1984, p. 145-6). Put differently, rationalization of the life-world is an emergence from a sort of ideal dogmatic integration of culture, society, and personality—that is, a continuous rational critique of cultural traditions, rational democratization of social norms, and rational abstraction of ego-identities. This ideal process of life-world rationalization relies on:

the continual refinement of communicative rationality, as received wisdom is increasingly subject to cooperative processes of discursive will formation, where all participants have an effective right to challenge any decision made, and agreement is realized solely through the force of better argument. (Edgar, 2005, p. 175)
What Habermas's theorizing about the life-world's rationalization suggests is that social order arises through discursive social action, which he calls communicative action.

The general notion of Habermas's communicative action may be understood as a form of critical hermeneutics that he termed formal pragmatics. His idea is that human beings make utterances (such as, chains of spoken, written, or otherwise mediated language) in social situations based on reasons, which are judged by others as valid or invalid (in pragmatic, not formal logic terms). When a reason is understood to be invalid, the speaker's reasons will in principle be challenged. This conflict may then be repaired by means of an ensuing dialogue, which functions to make oneself understood and/or to reach an agreement. These reasons (that is, pragmatic validity claims) embody utterances based on the double structure of language, which is to say, language both structures what a person says about the world (that is, propositions), and also invokes social relationships (that is, commitments). Habermas contends the pragmatic aim (or telos) of language is to reach understanding, bring about consensus, and coordinate the actions of a plurality of social agents (Finlayson, 2005, p. 34). The significant point for our discussion is that Habermas’s theory is pragmatic in the sense that it focuses on what language does, rather than on what language says, a theory of social language use (Finlayson, 2005, p. 32). Here, it is also helpful to note that Habermas also draws inspiration, here, from Austin's (1962) notion of “speech act.” That is, Austin's idea that by saying something, we do something, such as, promising, warning, or ordering. Communicative action is not only a social act that brings forth something in the world; it is also an invitation to challenge the validity of what is brought forth, and in the event of a breakdown in communication, it is also the means by which this breakdown is repaired.

The pragmatic meaning of an utterance depends on its validity, which is to say that its acceptance in a particular social situation is reasonable and believable. Habermas frames the validity claims of utterances in terms of four assumptions that humans seem to make when they say something. First, about the way the world around them is; second, about their right to say what they are saying; third, about being sincere or otherwise in what they say; and forth, about the comprehensibility of what they say (Edgar, 2006, p. 167). Habermas denotes these four assumptions as validity claims of truth, rightness, truthfulness, and meaning respectively. A validity claim may be taken as
valid in terms of the taken-for-granted agreement on assumptions among interlocutors, or it may be challenged, or a consensus may be reached by way of dialogue. For example, as a student I may ask you as a teacher what a word means. In making this utterance, I assume that you have knowledge of the word, or if you don’t that you will likely tell me you don’t know of the word, or that you forgot what it means. I also assume that it’s appropriate to ask the teacher for the meaning of the word. You may be teaching a lesson and willing tell me the meaning of the word assuming that I want to understand the lesson. Or, I may be in the midst of writing an examination and you may give me a disapproving look and ignore my request. In addition, if you remember that I’ve demonstrated in the past that I clearly understand the meaning of the word, you might become suspicious of my request and ask me if I have forgotten the word’s meaning, or otherwise inquire about my reason for asking. Lastly, if my speech came across unclear (say, I have a strong accent) you might ask me to repeat myself, to speak more slowly, or louder, or to use different words. As a result of this discursive counteraction between social subjects, authentic consensus and meaning may be established. The significance of these speech act patterns is the types of discourses that emerge from them.

The first three validity claims (truth, rightness, truthfulness) correspond to three types of discourse: 1) theoretical, 2) moral-practical, and 3) aesthetic. Broadly speaking, these discourses are applied, respectively, to 1) the sciences, 2) our everyday practical and moral life, and 3) to the arts and literature. When considered in terms of the curriculum field, Habermas’s differentiation of these three discourses within the life-world of study can be used to describe how the re-conceptualist movement represents a move from the cognitive-scientific theoretical discourses toward the moral-practical and aesthetic discourses. For, as Gage (1989) sketched out, the re-conception of curriculum resulted in a significant paradigm war, ultimately involving the retreat of the social sciences in curriculum theorizing and the advance of critical and interpretive forms of inquiry. Thus, Pinar et al.’s (1996) re-conceptualization of curriculum design as curriculum as institutional text may be viewed as a post-structuralist insight that framed the field in literary terms. I believe that this linguistic turn by Pinar et al. was a significant design act, important and certainly necessary. In Habermasian terms, this act may be understood as a move to return curriculum design to the life-world of study by reconnecting it with a richer complement of communicative action discourses. But in this
move it is also important to understand that curriculum design as institutional text has moved away from that which was, in fact, initially brought forth by the communicative action of the life-world of study.

For Habermas, the rationalization of the life-world occurs through strong communicative action, where the truth, rightness, and truthfulness validity claims of a speech act are all being met. However, he also acknowledges that maintaining this sort of social coordination is difficult—particularly in complex, pluralistic societies—and consequently, mediating “systems” of coordination often emerge. These systematically structured contexts use non-linguistic media to coordinate social action, allowing the role communicative action would otherwise play to be relaxed. For instance, systems like markets and bureaucracies, use the media of money and power, respectively, to “do the talking, as it were, thus relieving actors of the demands of strongly communicative action” (Bohman & Rehg, 2011, “3.1,” para. 12). That is, some social structures (such as, the market) become so abstracted from everyday interactions that they take on a reified (material) form. This reified non-social surrounding world, as Heidegger (2001) might describe it, possesses objective naturalistic characteristics. Habermas describes this surrounding world as systems, or systems-world. The significance to our discussion is a similar relationship exists between the life-world of study and the world of curriculum as institutional text, which I characterize as a reified social structure, or system-world.

The term system refers to a structure of independent, but interrelated, elements comprising an integrated whole (Von Bertalanffy, 1968). The concept was initially developed in the context of the 19th century natural sciences, with Sadi Carnot’s (1960) work on thermodynamics being one of its earliest articulations. In Biology the idea was applied to explaining organisms (such as, plants and animals) and the interaction between organisms (such as, ecosystems). The biological notion of system was borrowed by the social sciences as a means to explain cognitive structures and social order. The trans-discipline use of the term developed into a general systems theory with a generic system definition: “A set of elements or parts that is coherently organized and interconnected in a pattern or structure that produces a characteristic set of behaviors, often classified as its “function” or “purpose” (Meadows & Wright, 2008, p. 188).
Within the realm of general systems theory, a system is defined (or scoped) by a boundary with its environment. Each system is understood to exist within an environment, wherein and with which it interacts. Put differently, the idea is that one’s surrounding world may be conceived as a complex system composed of progressively more discrete sub-systems, wherein there may be additional sub-systems, and so forth. Each system, then, serves as the environment for its sub-systems. Although, clearly an over simplification of this concept, metaphorically, general systems theory conceptualizes the structural relations of the surrounding world like a Russian nesting doll. If you are familiar with this unique doll, each wooded doll opens to reveal another smaller doll contained within, which in turn opens to reveal another one, and so forth.

While the nesting doll metaphor may help make a systems view of the surrounding world comprehensible, theoretically and practically speaking, systems theory is more complex. For instance, a general characteristic of systems is that they can be either “open” to influence by events outside their delimitation, or entirely self-contained within their declared limits and thus “closed” to environmental influences (Von Bertalanffy, 1968). For Habermas, social systems are seen as open. His open delineation is important, because it means that social constitution and reproduction can only be properly understood within the context of its environment, which for Habermas is the life-world. Others social theorists like Luhmann, to whom Habermas is largely indebted for his systems ideas, articulates society as a closed system—that is, “[Society] is the all-encompassing social system that includes everything that is social and therefore does not admit a social environment” (Seidl, Becker, & Luhmann, 2005, p. 36).

Regarding curriculum I think an open systems conception makes for a better fit. By taking an open systems approach, Habermas argues that experience, such as, social phenomena can be analyzed through either a methodology oriented to the lifeworld or through one oriented to systems. Thus, for example, culture can be understood as a structural component of the lifeworld, or as a subsystem within an environment that includes society and personality as subsystems alongside nature and the physical body of the agent (so that the relationships between culture, society and personality can be analysed in terms of the inputs they each require and the outputs they generate)” (Edgar, 2005, p. 177).
A consequence of this hybridized approach is that there are two senses in which the distinction between life-world and system may be understood. In the first sense, there is a difference in the point of view, wherein the life-world approach considers people’s own understanding of their experience; in contrast, systems theory takes an observers perspective. As a result, while the systems approach may generate “counter-intuitive” explanations, “it will seem to play down human agency, and leave the agent as a mere dupe to overarching social mechanisms” (Edgar, 2005, p. 177). Thus, both approaches are useful to understanding experience and curriculum in socially structured situations.

In the second sense, there is a difference in terms of what each theoretical frame leaves unexplained. Given that a life-world approach privileges an understanding of individuals’ own worlds, their shared social worlds, and their surrounding worlds, the “unintended consequences of human action must go unexplained,” because, “in being unintended, they become contingent and meaningless” (Edgar, 2005, p. 177-8). In contrast a systems approach cannot incorporate the understanding of particular individuals, thus, “the limitations that are placed upon system integration by the very inability of agents to understand economic and administrative processes—and thus the impact that experiences of alienation, anomie and disenchantment have upon social reproduction—cannot be explained” (Edgar, 2005, p. 178). Again, both perspectives are necessary to understand study as a socially situated educational experience.

Curriculum as text may be understood as both life-world and as system-world brought forth from the resources and the communicative (designing and redesigning) actions of the life-worlds of study and teaching. In my present reconnection to Habermas’s theory, I am seeking to understand the conceptual groundwork the past has brought to my experience of Aoki’s (1986/2005) metaphor of living between two worlds: “the worlds of curriculum-as-plan and curriculum-as-lived-experiences” (p. 159). In making this move, I am anticipating future re-conceptualized curriculum design theorizing as intentional designing in between the life-worlds and system-worlds of study, which is the site of education and curriculum in the sense that the latter is understood as “the study of any and all educational phenomena” (Egan, 1978, p. 71).
Now, the question that emerges at this juncture is how does the system-world of study emerge?

### 4.4.1. The Course as Schedule

In the midst of this study, I was approached to design and teach an upper-level undergraduate course titled “The Learning Organization.” I had previously developed and taught a set of communication design courses at the same university over the past few years. So, to design and teach a new course was not entirely a new experience. After accepting the offer I was given the new course proposal, which had been developed by a curriculum development committee as part of the university’s B.A. in Leadership program. I was the first to teach this course and to expand its design beyond its brief proposal description. This description included the course title, description, learning objectives and required text. Conceptually, the course was framed according to Senge’s (1990a, 2006) seminal summary synthesis on this topic titled *The Fifth Discipline*. This detail is significant, because I had completed a M.A. in Leadership program, wherein my research area was the role of learning in organizational development. Specifically, in the course of my M.A. research I had studied Senge’s body of work, those of his collaborators, and also his primary influences in some depth. Consequently, I was known within my university to have the unique requisite expertise to teach this course.

A unique design constraint placed on “The Learning Organization” course was the structure imposed on its delivery. Now, every course taught within an institutional context has a predefined delivery structure. That is, at a minimum the typical course starts, ends, and defines the course of study in between these two points. In fact, the syllabus, which defines these matters in writing, serves as the *de facto*, if not *de jure*, institutional contract between the student and the teacher. The academic calendar title and description for a university course design is like the lay of the land for an architect. It is the context wherein the design must be made to fit. And more often, than not, it seems to me that what we might call the academic calendar is as naturalized in the mind of an institutional curriculum designer, like myself, as the found landscape is in the mind of the architect. Nevertheless, it is entirely an unnatural construct. At one point the calendar is
set, metaphorically, like the foundation of a grand building and subsequently each floor of the academic enterprise is overlaid upon this foundation. While the definition of the academic year, which sets the spatial (that is, room scheduling) and temporal (that is, meeting times) parameters for institutional courses, it is not arbitrary, but neither is it absolute. That is, it’s socially defined, with a particular historical locus and one of many possible definitions and subsequent histories. For instance, the semester, which is a common unit of course measurement within universities, has numerous institutional definitions. That is, it has been divorced from its own etymological history as a Latin rooted German term that meant six-months. Now, in my own university context, the term semester is defined as a four-month period, and further defined as 32 seat hours.

The unique calendar parameters placed on the design of “The Learning Organization” course, was a seven week term, wherein there was only one three hour instructional block each week on a weekday evening and one additional six hour block on a Saturday. Moreover, there was to be an online component to the course, making it a hybrid of face-to-face and web mediated interactions between course participants. A further stipulation was that the content design was to facilitate accelerated learning within a truncated term. These rather simple and arbitrary demarcations form the outer boundaries of a curricular system-world that contains the lived-experience of study. Course scheduling is a systematically structured context that uses nonlinguistic media to coordinate social action, allowing the role communicative action would otherwise play in determining the timing and duration of student and teacher interactions to be relaxed. In universities, this social structure has become so abstracted from everyday interactions that they have taken on a reified form, possessing objective naturalistic characteristics.

The initial design problem I faced was releasing my prior conceptions of how best to design a course within the old schedule I had taken as a naturally assumed form. That is, my mental model of a university course was a standard twelve-week term with one or more class sessions per week, varying only by the number of semester hours designated to the course. In addition, each term had a two-week examination period when an examination session was scheduled for each course. This institutional schedule had framed my past experiences of designing and teaching courses. Moreover, it felt very natural as a consequence of its similarity to my student experience at other
universities. Much like the passageways and rooms of a building fundamentally order the circulation and activities of people, this institutional system-world had ordered the pattern of content and conversation that composed my lived experience of each course I taught.

The impact something as simple as a course schedule can have on a course design was made more clear to me as a consequence of what occurred next. After designing and teaching “The Learning Organization” course in the format above, the next time I was asked to teach this course its temporal foundations had shifted. As a further design move to accelerate the pace of study, seven weeks were reduced to six and half the course utilized online technologies, making it a 50/50 hybrid format. My memory of my lived-experience of the first instance of this course was temporally ripped apart and spatially reconfigured in a radical new projection of the future iteration I was now anticipating. In short, my old experience no longer fit the new constraints. This experience made me vividly aware of how the institutional system-world acts upon the life-world of study to give it temporal shape; thus, the system is curricular.

4.5. Study as Emergent System-Worlds

Initially, both historically and presently, the curricular system-word of study emerges as an institutional text through our family relations. Grumet (1988) argues, “what is most fundamental to our lives as men and women sharing a moment on this planet is the process of reproducing ourselves” (p. 8). The critical insight, here, is that as human beings we reproduce ourselves biologically, ideologically and critically. As an anticipation of the future of re-conceptualized curriculum design this present insight points to the centrality of human relations in the emergence of study as system-world.

While familial learning practices have histories beyond memory or record, we may infer from accounts of foraging societies that “the youth [were] trained to practice the arts which their parents [knew], to continue their friendships and alliances, and to cherish their resentments” (Williams, p. 19). Studies of juveniles in hunting and gathering societies, as well as in lower primates social groups, suggest there was “little teaching (that is, direct and deliberate tuition) of the younger members by mature individuals” (Herzog, 1984, p. 74). Rather, learning was a socialization process, predominately in the
form of “play” with “peers and slightly older playmates” involving “imitative activities” of “competent behavior” being observed within the context of the local “social and physical environment” during a “period of freedom from responsibility and of the need for self-support” that was “unusually long” compared to other species (Herzog, 1984, pp. 72-74). This process of learning through indirect (social role-modelling) and direct teaching in family relations continues today in the pre-school years of children.

4.5.1. Study as Social Order

As the physical, mental, and social capacities of our ancestors grew through evolutionary and social change they brought forth ever more complex, interconnected and constructed worlds. 10,000 to 12,000 years ago agriculture was added to hunting and herding, which allowed for sedentary societies to emerge based in built-up villages and towns. With the advent of farming, the scale, density, and interconnectivity of human societies increased significantly. Trade and industry emerged as agricultural productivity led to surpluses, and more time was made available to the processing of raw materials. Arts and sciences appeared as we collectively sought to better understand the world and cope with its challenges through our creative invention and use of tools and techniques. Initially, our capacity to “internalize the wisdom of our elders” led to “self-sustaining norms that required minimal reinforcement by authorities” (Heifetz, Grashow, & Linsky, 2009, p. 14). As tribal populations grew they developed into states, nations and empires, new institutional forms necessitated by the need to govern many people living close together. What is critical to recognize, here, is that these new institutions are human inventions, technologies of organization built upon the fossil record of human innovation.

Over time as a social species, we have developed a complex set of interconnected social arrangements, social institutions, and social practices, which first emerged from, and later acted to conserve, maintain and enforce, our ways of relating and behaving with each other. Sociologists describe this form that our human social relations take as social order. The concept of social order may, usefully, be understood in structural terms. On the simplest level, where two or more people are connected to each other a social group is formed. This social group is more than a simple collection of individuals; it is a collective social entity that exhibits some degree of social cohesion.
That is, according to social psychologists Muzafer and Carolyn Sheriff (1956), a social group consists of a number of individuals interacting with each other with respect to:

1) Common motives and goals.
2) An accepted division of labor (such as, roles).
3) Established status (social rank, dominance) relationships.
4) Accepted norms and values with reference to matters relevant to the group.
5) Development of accepted sanctions (praise and punishment) if and when norms were respected or violated. (pp. 143–180)

A more complex way of understanding social order in structural terms is as social networks. A social network is the social structure of the dyadic ties (that is, groups of two) between social actors (including both individuals and social groups). Social networks describe the relationship ties and social interactions that exist between social groups, as well as within each social group, that serve to create social order.

Social groups and social networks serve the coordination of human activity. Humans are purposeful beings. As a result, when people gather together to form a social group, or network it is most often to accomplish a purpose, either pre-existing or arising from a coordinating situation. This purposeful coordination of human activity is brought forth by a leadership act, which in an educative context is a pedagogical act. The Greek root of pedagogy is *paid* (meaning “boy”) and *agōgos* (meaning “guide”), which phrased as a colloquial transliteration means to “lead a child.” Broadly speaking, Storey (2008) argues that, the “concern of leadership is the movement of people toward purpose” (p. 28). And the structural context for that movement is the concern of organization. That is, leaders create organizational structures to move people, collectively, toward a purpose. Putting these broad conceptions in curricular terms, the concern of the pedagogue as educative leader is the movement of student’s study toward a purpose. And the structural context for that movement is the curriculum as institutional text. In short, I see the educational institution as something that emerges from the act of teaching. To make sense of the nature of this emergence I find Habermas’s theory of social order useful.

How is social order brought about? Habermas (1984) suggests that it is through our rational actions. Habermas distinguishes three kinds of rational action: 1)
instrumental action, 2) strategic action, and 3) communicative action. According to Habermas an instrumental action involves an individual doing something as a means to bringing about a desired end. In a modern society this takes place as non-social acts of technical rationality. Similarly, strategic action occurs where an individual gets others to do something as a means to bringing about their own desired end. Strategic action may be understood as a competitive action, which occurs within a context where there are other social agents. Whereas the first two types of action are oriented towards success, communicative action is oriented towards real understanding through intersubjective cooperation. Primarily, it is through communicative action, Habermas argues, that we speak stable, ordered, and meaningful social worlds into existence. That is, he argues that society is a linguistically mediated world, which is produced and reproduced through the communicative competences of its social agents. Put simply, we speak the order of our society, and its institutions, including curriculum as institutional text, into being.

4.5.2. Study as Purposeful System

The Western institutions of study we have spoken into being first appear within the context of ancient Greek society. The Greek system was based on both informal familial and community schooling, along with formal schooling in the form of private tutors or schools for those of economic means. The existence of formal schooling in early antiquity, however, does not mean it was commonplace. Indeed, the primary institutional form of education was the family and community. In ancient Athens:

education was not a segregated activity, conducted for certain hours, in certain places, at a certain time of life. It was the aim of the society. The city educated the man. (Hutchins, 1968, p. 133)

The ancient person was educated first by family and then, by culture (that is, *paideia*). One’s familial and cultural relations largely defined the ancient life-world of study. However, as these ancient societies—notably, Greek city-states—rationalized, becoming states and nations defined by laws and rules, institutional systems of study emerged to support the reproduction of increasingly complex forms of social order.

Plato (2003) cast a formative vision of this system-world of study:
By maintaining a sound system of education and upbringing you produce citizens of good character; and citizens of sound character, with the advantage of a good education, produce in turn children better than themselves and better able to produce still better children in turn, as can be seen with animals. (p. 125)

While Plato’s idea had little affect in his own time, clearly, the shadow that his idea has cast upon the future is significant. Indeed, it appears to me that Plato planted an ancient seed that became our modern idea of progress cast, here, within the context of curriculum design. Closely related to his idea of progress, and progress in a society’s institutional curricular design is Plato’s notion of the “good.” The good is a central element of Plato’s theory of knowledge, his vision of a just society and individual, and the purpose of his system of education (that is, his institutional curricular text). Plato’s pithy definition of the good comes near the end of the Republic when he compares the concept with that of evil by stating, “I call anything that harms or destroys a thing evil, and anything that preserves and benefits it good” (Plato, 2003, p. 355). His definition appears to be straightforward and clear, but it raises questions about what precisely does he have in mind by “anything that preserves and benefits” a thing? In social terms, his “Good” relates to the preservation and benefit of the whole community. For the individual, it relates to the preservation and benefit of a person’s mind/soul as a whole.

For Plato, development of the good is made possible through study. Specifically, it is the individual’s upward progress of the mind from the lower world of shadows and opinions towards the upper world of light and knowledge. Beyond what we can know lies the “Good,” which is distinct from knowledge, and yet it is through knowledge that one can come closest to the “Good.” While Plato’s epistemology is clearly more complicated, the important insight for our discussion is that Plato established the subsequently persistent idea that study is directional, and that it is oriented toward seeking ends. That is, study is an educative experience that results in a person becoming educated.

Writing in the philosophic tradition of Plato educational philosopher Richard Peters (1966) argues that the historic development of the term “education” has “normative implications.” That is, it suggests a worthwhile outcome is to be achieved.

It implies that something worth while is being or has been intentionally transmitted in a morally acceptable manner. It would be a logical
contradiction to say that a man (sic) has been educated but that he had in no way changed for the better, or that in educating this son (sic) a man (sic) was attempting nothing that was worth while. This is a purely conceptual point. Such a connection between 'education' and what is valuable does not imply any particular commitment to content. It is a further question what the particular standards are in virtue of which activities are thought to be of value and what grounds there might be for claiming that these are the correct ones. All that is implied is a commitment to what is thought valuable. (p. 25)

Peters’ assertion that study’s educative character makes it more than a synonym for learning is surely correct, albeit uninformative. For learning is something that human beings simply do regardless of whether it is of moral value or not. People naturally learn all sorts of things, including negative attitudes, defensive social skills, and various forms of misinformation, which are counterproductive to one’s identity, purpose, values and goals, or role in society. Thus, while an accurate definition, Woods and Barrow (2006) argue that Peters’ definition leaves two interesting and vitally important questions unanswered, “What are the worthwhile things which are to be transmitted?” and “How do we tell whether a manner of transmission is morally accepted or not?” (p. 30).

The “what” and “how” questions of study as education take us a step closer to understanding what it means to be educated. Broadly speaking, Peters’ assertion that education involves something of value being learned in a particular way implies that to become educated involves a transformation or a change. That is, to become educated means one becomes something more than knowledgeable. Consider, our common use of “to educate” in our everyday speech. When we say we must educate someone about something, such as, “We must educate the public” about such-and-such, “the clear implication of this familiar way of speaking is that certain information is to be imparted, this information is to be understood and, in virtue of the understanding, what people do, or do not do, is to change” (Woods & Barrow, 2006, p. 35). Thus, study as education means not only coming to know such-and-such, but how to do various sorts of things.

Educational ideas about what things of worth should be studied and how they should be studied emerge from our theories of knowledge. That is, how one seeks to lead others to know presumes knowledge of what knowledge is and how one comes to have knowledge. Moreover, knowledge is (often, if not always) value laden, making
ethical claims on how people ought to live. So, it might also be said that people’s educational ideas about knowledge are informed by their ethical propositions. Lastly, knowledge (typically) is directed at something, which further requires a metaphysical consideration of what there is. That is, a consideration of the ways in which the known (anything that is) relates to knowledge (what is represented or thought to be).

Plato’s pre-modern theory of knowledge illustrates what Doll (1993) describes as an organic unity—a paradigm that compelled balance between elements of one’s life-world such that they fit together as the necessary parts of a whole. Plato, in Republic describes the human soul as being composed of three necessary parts that ought to fit together harmoniously: reason, spirit and appetite. When these elements are in balance by means of reason (the first among equals, as Doll puts it), the soul as a whole is said to exude a fourth element, which is that of the just or good. For Plato, knowledge is intrinsic to the soul and one comes to have knowledge by means of questioning and remembering. Thus, leading others to know in Platonic terms was largely a matter of helping them to remember by means of questioning—the Socratic method.

Indeed, this way of understanding knowledge and education persisted through Roman times, the Middle Ages, and the Renaissance, with remnants remaining to this day. The early meaning of the word “education,” reflected this pre-modern condition of thought. The word arrives in the English language in the mid 16th century from the Latin term educatio, from the verb educare, with the stem educo, meaning 1) to draw out, lead out, or 2) to bring up, raise, rear, educate. The first thing that I find interesting about this etymology is that the theory and practice of education and leadership have always been related to each other. That is, education from its earliest conception involved leading others in the act of study. What may not, at first, be apparent is the original meaning of the idea of “drawing” out, or “leading” out, that finds its formative source in antiquity.

In Meno Plato (2011) gives this formative written account of the ancients’ educational notion of “leading out” others’ study. Plato described how Socrates engaged in dialogue with Meno’s slave, where he demonstrated to Meno that his slave is capable of learning a geometrical truth, because “his soul must have possessed it always.” (p. 305). Put in the context of the broader dialogue, the text Meno begins with the character
Meno asking Socrates if virtue can be taught? Socrates responds by asking Meno to define what is virtue? Then, using what has come to be known as the Socratic method—that is, asking Meno question after question to help him critically understand his thinking by exposing flaws in his logic and reasoning, followed by encouraging him to refine his theories, and ultimately helping him arrive at a tenable conclusion—Socrates brings Meno to the question: What is knowledge? The answer, which Socrates uses Meno’s slave to demonstrate, is that one is not taught, but rather only recollects knowledge from past lives. That is, knowledge is innate—one possesses a priori knowledge—and we study by remembering what we already know, but didn’t yet know that we knew it. Put simply, study as education involves “drawing forth” knowledge from within the person.

It is important to note that the ancients did not view this knowledge from within that one could draw out as a “subjective” form of knowledge, as we might now interpret this idea. Rather, it was an “objective and universal” truth that existed within one’s soul.

This idea persisted, and by late antiquity Augustine, in his dialogue *On the Teacher*, still presents a similar concept of the educational experience when he writes, “Concerning universals of which we can have knowledge, we do not listen to anyone speaking and making sounds outside ourselves” (Augustine in Nash, 2010, p. 156). As a Christian, Augustine reframes Plato’s concept slightly, suggesting: “We listen to Truth which presides over our minds within us” (p. 156). For Augustine, this Truth within each person is Christ whom he considers to be the real Teacher. This real Truth within is like light that allows people to discern things; in so much as we are able. Augustine’s theologically reframed idea was common through the Middle Ages and the Renaissance.

Broadly speaking, “while the Greeks devoted time to the methodology of knowledge acquisition, they encased this methodology in ethical terms” and as such it was just as “meaningless to consider knowledge without virtue” as it would be “impossible to have virtue without knowledge (such virtue would lack meaning)” (Doll, 1993, p. 112). While Aristotle viewed the soul in less mystical terms than Plato, he “accept[ed] the general thesis of reason (nous) connected with harmony and of harmony connected with virtue” (p. 112). However, knowledge in Aristotelian terms was not intrinsic, but rather the product of reason’s potential power, which must be developed
through its use. Knowing for Aristotle was “like” sensation—an analogy in which one came to know the universal “essence” of something through the “particulars” of its sensation. Learning for Aristotle focused on observation of the object or content and the teaching act involved instruction about, and inquiry into, the selected subject. Aristotle did share Plato’s ethical concern arguing that in learning, “the two qualities of knowledge and virtue develop one another, producing a just and wise person” (p. 112).

Like Plato, Aristotle also made a strong connection between the good of society and the significance of education. In book VIII of Politics Aristotle (2007) asserts that “the legislator should direct his attention above all to the education of youth; for the neglect of education does harm to the constitution” (part I). He argues education shapes one’s society and therefore society ought to give education its shape, or design. His perspective echoes Plato’s (2003) concern in the Republic, “that those in charge of our state must stick to the system of education and see that no deterioration creeps in; they must maintain it as a first priority” (p. 125). Aristotle (2007) observed that, “every one looks after his own children separately, and gives them separate instruction of the sort which he thinks best” (book VIII, part I). However, given his assertion that a society “has one end,” he also advocates that “education should be one and the same for all, and... it should be public, and not private” (book VIII, part I). Thus, for Aristotle the primary aim of education is creating and sustaining the character of society. An ideal he shared in common with Plato, and one broadly evident in the role that national public school systems has had within the rise and proliferation of most modern nation states.

Plato and Aristotle’s conceptions of education, as a societal institutionalization of study, were formative sign-making design acts—designations seeking to shift the context of study beyond the individual, family and community. They set out socially to institute acts of study in service to the society. Now, the question arises what does it mean to “be” an institution? Is it simply a group of people who study together? While certainly a necessary condition, it is not a sufficient one to be considered an institution of study.

According to Argyris & Schön (1996), a group of people who study together must meet three conditions to be considered an institution; that is, this collective must:
1) devise agreed-upon procedures for making decisions in the name of the collectivity,
2) delegate to individuals the authority to act for the collectivity, and
3) set boundaries between the collectivity and the rest of the world. (p. 8)

Argyris and Schön’s (1996) critical insight is that to be an institution is to become a political entity—that is, “before an [institution] can be anything else, it must be ‘political,’ because it is as a political entity that the [group] can take [institutional] action” (p. 9). This political characteristic implies that the members of the institution must decide and act not merely as individuals, but as agents of the institution. That is, the individuals not only have the power to act on their own behalf, but to act on the behalf of others. In short, the power to act on behalf of others is what it means to say an institution is political. The word “political” derives from the Greek word polis, which referred to the “body of citizens” of a Greek city-state. In short, “insofar as members of a [group] create [the sort of] rules, which we call ‘constitutional,’ and become a polis, they have organized [as an institution]” (p. 9). This is what Aristotle has in mind for his educative system.

Envisioning an ideal future, Aristotle’s (2007) asserts, “education should be regulated by law and should be an affair of state” (book VIII, part II). Beyond the essential conditions of bringing forth an institution into being that Argyris & Schön (1996) articulate, Aristotle (2007) also suggests there are additional questions to address for institutions to be educative in nature. First, he asks, “what should be the character of this public education” (book VIII, part II)? That is, what should be taught? Second, “how [should] young persons . . . be educated” (book VIII, part II)? That is, how are the subjects to be taught? Here, in Aristotle’s writing emerges two essential curriculum design questions, which historically brought forth curriculum as institutional text, and continue to bring it forth: What is to be taught? And How? In regards to the first question, Aristotle admits, “there is disagreement about the subjects” and “the existing practice is perplexing; no one knows on what principle we should proceed” (book VIII, part II). Moreover, he observed that “the useful in life,” “virtue,” and “higher knowledge” have all been entertained (book VIII, part II). Regarding the second question, “again, about the means there is no agreement” (book VIII, part II). As an example, Aristotle notes that “for different persons, starting with different ideas about the nature of virtue, naturally disagree about the practice of it” (book VIII, part II). For Aristotle, the only thing that
remains clear in regards to these essential curricular questions is that “children should be taught those useful things which are really necessary, but not all useful things” (book VIII, part II). Nevertheless, determination of what is useful raises the fundamental problem of educational ends.

In the opening of *Nicomachean Ethics*, Aristotle (2004) states, “every art and every investigation, and similarly every action and pursuit, is considered to aim at some good. Hence the good has been rightly defined as ‘that at which all things aim’” (p. 3). In unpacking this idea Aristotle articulates that the ends of one sort of thing (such as actions, arts, and sciences), may in fact be subordinate to another end. And, more importantly, he asserts, “the ends of the directive arts are to be preferred in every case to those of the subordinate ones, because it is for the sake of the former that the latter are pursued also” (p. 3). Given this desire to pursue higher ends, over subordinate ones, Aristotle argues that knowledge of the good (that is, the supreme end) is of critical importance, making it more likely that we will achieve this end. Clearly, more conceptual groundwork, here, is being laid for our modern curriculum as an institutional text.

Aristotle’s (2004) notion of the ultimate end (or good) of life is happiness—that is, human flourishing, or “living well and doing well” (p. 7). In book VII of *Politics* he briefly sketches out how this theme relates to his views on education. He begins by restating his understanding of the soul as being divided into two parts, “one of which has a rational principle in itself, and the other, not having a rational principle in itself, is able to obey such a principle” (Aristotle, 2007, book VII, part XIV). When each part has the virtues of its respective part, in this way we might call a person good. Following this line of thinking Aristotle divides the world in two, between business and leisure, useful action and noble action, and so forth. Moreover, he suggests there is a “preference given to one or the other class of actions” (book VII, part XIV). Moreover, he argues that this preference of action “must necessarily be like the preference given to one or other part of the soul and its actions over the other” (book VII, part XIV). For example, there must be business for the sake of leisure, war for the sake of peace, and so forth. Thus, according Aristotle, when one frames a system of education, “he should consider the parts of the soul and their functions, and above all the better and the end; he should also remember the diversities of human lives and actions” (book VII, part XIV). In the course
of the discussion above, Aristotle sketches out a significant tensionality between the overarching purposes of the institution of study as a system-world and the particularities of unique life-worlds that I anticipate a re-conceptualized curriculum design must consider.

The essence of Aristotle's (2007) viewpoint on the general aim of education is to teach “children and persons of every age” (book VII, part XIV) the virtues that are necessary for right action. In so doing, the good character (that is, the moral and intellectual virtues that lead to human flourishing) of a society is preserved. By the late Middle Ages this Aristotelian aim reshaped the academic division of labour between the trivium and the quadrivium that had emerged in Roman times. That is, it stirred Aquinas to reimagine how students study and how they are taught, proposing a systematically structured movement of the students’ through the curriculum as a whole “towards the good of comprehensive and completed understanding” (Macintrye, 1998, p. 105). What I find compelling about this historical narrative, as my present anticipation of the future of re-conceptualized curriculum design, is its progressive intent, first, as a pattern of individual development, and second, as a collective social pattern of societal development.

Plato and Aristotle make it clear that institutions exist to serve a purpose. Institutions of study implicitly, if not explicitly, exist to serve the fulfilment of our complex mix of needs, wants, and ultimate desires. Does this mean that everyone is flourishing? No. As Shah and Marks (2004) estimate, within the US alone, “less than 20 per cent of the population are flourishing and over 25 per cent are languishing, with the rest being somewhere in between” (p. 5). While the system-world of curriculum as institutional text emerges from the resources of the life-world of study, the purpose that these institutions bring forth are often instrumental and or strategic, where the means of many act to serve the ends of a few, with the result that some flourish at the expense of others who languish. In bringing forth institutions of study something is lost, one pattern dominates others, because the act of “creation is ever co-joined with destruction” (Fry, 1999, p. 52).
4.5.3. Speaking Systems of Study Into Being

Up to this point, I have focused on a single thread of Greek thought, albeit a familiar one—that is, the educational thought of Plato and his students. Plato’s view of study as a particular practice represents a continuation of “Socrates’ never-ending quest for truth, regarding intellectual culture and philosophy as the ideal for the education of the citizen” (Kimball, 1986, p. 17). However, this is just one thread situated within the pluralistic milieu of ancient Greece. As a consequence of the rise of democracy in Greece, along with its slavery-based economy, which allowed free time for study, several different education ideals emerged in response to the new problem of preparing free citizens to govern their own society. Kimball (1986) identifies two other influential groups, one that put rhetoric before philosophy in the practice of study and another view of study that sought a balanced integration of both rhetoric and philosophy. These other threads are important to our discussion, because philosophy was not the only designing force shaping the system-world of ancient curricula; rhetoric was also a productive force.

The first “other” group involved individuals, “such as Gorgia, Protagora, Prodicus, and Hippias, [who] taught the skills of composing, delivering, and analyzing a speech” (Kimball, 1986, p. 17). These methods were known as a certain kind of wisdom (sophia) “that was political: the ideal methods for making one’s point and winning arguments” (p. 17). To this end, the persuasive education of the sophists was crucial to participating in the deliberative bodies of democratic city-states. Plato contrasts himself with the sophists by making a distinction between sophia and philosophy. For Plato, the highest truth is never attained (through a persuasive argument, or otherwise) and what is important to him is pursuit of the highest knowledge through dialectics—an endless search. This commitment to the importance of philosophy is carried forward by Plato’s students, notably, Aristotle (2004), who argued in Nicomachean Ethics that our highest happiness is achieved in the pursuit of theoretical knowledge or contemplation, “for it is the wise man that posses these qualities in the highest degree” that is happiest (p. 276).

Isocrates, often incorrectly identified as a typical sophist, proposed a third tradition of educational thought that has shaped study. Kimball (1986) argues that Isocrates is distinct, because he, “criticized the sophists for their emphasis on rhetorical display and technique at the expense of character ideals” (p. 18). Isocrates extolled a
view of the orator as “one who would live out the noble virtues [of the past] and persuade the free citizen of the democratic city-state to adhere to them” (p. 18). Moreover, whereas Plato argued in *Gorgias, Protagoras*, and *Phaedrus*, that “rhetoric is mere sophistry,” Isocrates viewed rhetoric as integral to philosophy suggesting that the height of philosophy was to both “speak well and think right” (Isocrates in Kimball, 1986, p. 18).

These historical understandings are the headwaters shaping the emergence of study as an institutional education form in the West. In *Orators and Philosophers* Kimball (1986) argues there is a dialectic tension between two distinctive approaches, or foci to the rationalization of study: wisdom and eloquence, with culturally distinct advocates on both sides of the equation. On the one hand, the Socratic Greek tradition shaped study in a tradition advocating philosophy’s theoretical concern for seeking the truth. On the other hand, was the pragmatic Greek oratorial tradition, which advocated for rhetoric’s use of persuasive eloquence. Summarizing Kimball’s argument Engel (1987) writes:

The history of Western higher education can be seen as a succession of periods in which the “philosophical” tradition was ascendant, such as in the European universities of the High Middle Ages, the German universities of the nineteenth century, or the major research universities of twentieth-century America, and periods when the “oratorical” tradition was ascendant, such as among the Italian literati of the Renaissance and in the English and American colleges of the eighteenth century. (p. 387)

What I find most interesting about Kimball’s dialectic account of the emergence of the Western core liberal arts curriculum are the ‘oratorical’ tradition’s ascendant moments. In particular, the development and dominance of Roman schooling as an explicitly rhetorical institutionalization of study in both approach and subject matter. The template for Roman schooling, along with many of its teachers, came from Greece. Like Greece, the Roman system evolved from an informal, familial system of education of the early Republic into a largely formal ‘public’ tuition-based system during the late Republic and the Empire. As an empire builder, the Romans valued a pragmatic education that served to advance industrious, civic, political, and legal discourse. Consequently, the architects, jurists, and administrators building this emerging empire were more sympathetic to the Greek oratorial tradition of rhetorical discovery and invention and its practical and aesthetic concerns with noble virtue, law, civic order and public expression.
In Roman times study as philosophic self-formation, intellectual inquiry, and seeking the truth was important, but its new emphasis became wisdom applied. Like Isocrates, Cicero is also critical of Plato’s endless speculative pursuit of truth. Cicero felt that the Greeks, notably Socrates, had unreasonably severed the education of the orator from the philosopher, thus, establishing one set of teachers to teach us to think and another set to teach us to speak. Instead, Cicero views wisdom and eloquence as two distinct attributes of the same process, the education of the orator as a philosopher.

Describing Cicero’s view Chambliss (1987) writes:

Oratory is not a skill attained by learning the rules of the rhetoricians. It is closer to a way of being in the world: the orator celebrates an ideal of excellence by means of the orations he creates on the strength of wide knowledge and large experience. “The genuine orator,” Cicero writes, “must have investigated and heard and read and discussed and handled and debated the whole of the life of mankind, inasmuch as that is the field of the orator’s activity, the subject matter of his study.” (pp. 138-139)

Cicero describes a diverse and rich discursive life-world of philosophic study. Philosophy as the tradition of wisdom, for Cicero, provides the orator with substance. Philosophy is clearly important, in that it is useful for oration. Philosophy is not ignored by the Romans, but is applied in two ways. First, it was useful for the moral development of the free citizen. As Seneca the Younger, writes in his Moral Letters to Lucilius:

only one study is truly liberal in making a man free, and that is the study of wisdom, with its strength of purpose and its noble and exalted ideals. All others are trivial and childish. (in Kimball, 2010, p. 38)

Second, philosophy was useful for its effect on the world; when expressed with eloquence it could enhance virtue by persuading others. The Greek concern with the “good” remains in the Roman lived-context, but it is made a more pragmatic enterprise by framing the theoretical concerns of philosophy within the practical and productive world building acts of oration, or put in Habermasian terms, communicative action.

Put together into a coherent model of study, Quintilian in Education of the Orator articulates the purpose of the Roman educational ideal of the orator as philosopher:
We are trying to form, then, the perfect orator, who cannot exist except he be a good man; and we accordingly demand that there be in him not merely the rarest talent for speaking but all the moral virtues. (in Kimball, 2010, p. 42)

While the philosophic tradition gave Roman eloquence its content, it is eloquence as the art of rhetoric that gave the Roman world its shape. McKeon (1987) argues that rhetoric, as Aristotle articulated its essence, is a master art of making, “in so far as rhetoric is an art of thought” (p. 4). The implication of this insight according to McKeon is that rhetoric can be understood as “an art of structuring all principles and products of knowing, doing, and making” (p. 2). As an art of discourse rhetoric provided the orator with heuristics for understanding and discovering the nature of discursive situations. It also formalized the tasks of designing persuasive discourses: invention, arrangement, style, delivery, and memory. Invention, or *inventio* in Latin, is the systematic process of generating ideas and creating arguments, often by utilizing topics—or topoi, which means “places” in Greek. Broadly speaking, topics represent a conceptual taxonomy that delineates between ideas. In contemporary curriculum terms Schwab (1973) defines the learner, the teacher, the milieu (such as, the community, family, school and classroom), and the subject matter as curricular commonplaces for inventing curriculum discourses. Arrangement, or *disposition* in Latin, was the persuasive organization of discourse. Aristotle developed a two part organizational scheme to discourse: the statement of the case and the proof. Later, in the Roman context, Cicero and Quintilian expanded Aristotle’s scheme into a far more elaborate six-part version. While these organizing structures where sometimes rigidly interpreted, the intent was to serve as a flexible framework that would help generate a good form. The tasks of invention and arrangement were in practice a bi-directional iterative design process, wherein, the generation of new ideas required proper arrangement, and the process of organization would lead to the discovery of new ideas or the need to invent new ideas. Style, or *elocutio* in Latin, was a refinement of the discourse’s language. While memorizing and delivery of speeches were key tasks of rhetoric, the content, structure, and style of discourse were the most important things to the Romans, and to our discussion. It is these tasks of rhetoric as an art of making that structured all principles and products of knowing, doing, and making in antiquity, including the institutional text of curriculum.
Eloquence as rhetoric was turned back upon itself in Roman times as an invention, arrangement, and styling of the orator’s discursive study, bringing forth the rationalization of the orator’s life-world of study as a curricular system-world text. The seminal institutional text brought forth by rhetoric as an art of making by the end of the Roman Empire was the septem artes liberales, or the seven liberal arts. Building on the earlier Greek ideas, the purpose of these seven courses of study was the forming of a free citizen. The term ‘liberal,’ as it relates to study of the seven arts, finds its etymological source in the Latin liberalis. Variations of the term “abound in writings from the Renaissance, from the late Middle Ages, and on back from Isidore in the seventh century, Cassiodorus in the sixth century, Augustine in the fourth century, Quintilian in the first century C.E., and Cicero in the first century B.C.E.” (Kimball, 1986, p. 13). And even, Cicero’s use of the term suggests it was in common usage in his day, meaning the antecedents of the terms have earlier sources. In the Roman context the term was not only used in association with education, but also in reference to being free as opposed to being a slave. Thus, the term carried forward the Athenian idea of an education of the free, having time for leisure and for study. Even the term school, which arrived to English from the Greek skholē retained an element of its original meaning as a place for leisure.

Augustine (397-426) in On Christian Doctrine summarizes these arts as “the sciences of disputation and number” (book II, para. 48). Disputation, or dialectica, refers to the arts of grammar, rhetoric, and logic. Augustine demarcates the “science of numbers” in terms of whether they are “considered in themselves [that is, arithmetic] or applied to the laws of figures [that is, geometry], or of sound [that is, music], or of some other motion [that is, astronomy]” (book II, para. 56). Shortly thereafter, Martianus Capelle codified these seven liberal arts in The Marriage of Philology and Mercury, wherein he unites eloquence (Mercury) and learning (philology). The seven liberal arts Capelle sets out are: grammar, dialectic, rhetoric, geometry, arithmetic, astronomy, and harmony. Through rhetorical invention, arrangement and style, Capelle brought together two conceptual hemispheres—language and mathematics—as an overarching curricular text, which defined the Western institutions of study. These curricular hemispheres became known as the trivium and quadrivium. The former encompassed the three verbal/written disciplines of grammar, rhetoric, and logic; the latter, the four mathematic disciplines, of arithmetic, geometry, astronomy, and music. The significance of this
development to our discussion is that this articulation of the curriculum was the orator’s domain. As an anticipation of the future in my present study of this past moment, it points to rhetoric’s role as the discursive art of making curriculum as institutional text. My interest is not in rhetoric itself, but rather its characterization as an act of design.

4.5.4. Study as a System-World of Texts

The rhetorical structure of the texts used in a course of study shape its design in significant ways. The *trivium* and *quadrivium* represent a system-world of seminal texts that speak for a person in their study or teaching—that is, texts that were thought best to reveal the understandings students were to aspire to. The prototype of this overarching rhetorical structure was set in antiquity and continuously added to, edited and systematically restructured, notably, by Aquinas (Macintyre, 1998) and Ramus (Hamilton, 1999). Taken as a whole the structure of this body of texts forms an aspirational argument for what is to be taught as a revealing of what is known and more importantly what is deemed worthy to be known. Each individual text within this system-world of study, and its commentaries, represent additional arguments for each given subject, designating in their rhetorical structuring what can be known, what is known, how it can be known, and what the lived-implications of this knowing ought to be.

The rhetorical power and possibilities of how the texts as system-worlds shape a subject’s study became very clear to me in my design and teaching “The Learning Organization” course. In the first two iterations of my course design the primary text I used was a revised and updated edition of Senge’s (2006) *The Fifth Discipline*. Given that this was the one and only text I used to reveal the landscape of this subject of study to my students, the book’s topics and arrangement acted to structure my course structure. While there were many things I liked about the book, its examples were dated. The discourses in the field of organizational learning and development had evolved; consequently, I felt the need to update the course text. However, I didn’t want to outright abandon Senge’s contribution to the field, or the wisdom inherent in his writings, but I also wanted to make the discourses of the course more contemporary. Therefore, in the third iteration I made a radical change to the content of the course. Rather than use Senge’s book as a synoptic text I made use of a set of articles. This allowed me to be
more flexible with the course design. I still anchored the course in a Senge (1990b) article that provided a summary of his book and I also added articles by key authors that Senge drew ideas from, such as Argyris’s (1977, 2002) work on organizational learning.

Given the short six-week format of the course and the frequency it was offered, I was able to iterate through new course designs rapidly making small changes each time. Breaking free of a synoptic text—a singular structure that structured my own design of the course—gave me space to respond to specific student interests in each iteration, while at the same time sustaining an overall coherence to the course. This design also allowed me to engage with my own learning about the field in the context of the course itself. Indeed, the course became a co-creative dialogue with my experience of the field as a student in a co-creative partnership with my students and with all of the past students who had contributed to the historic conversation of the course over time.

My initial design move to fragment the textbook allowed for the emergence of a diversity of text by different authors disrupting the singular structure of the course’s early form, which had organized itself around the unified arguments of one author’s text. My redesign of the course text as a network of textual fragments, allowed my students to make unique juxtapositions and linkages between and with the course’s collection of texts. My conceptual design intent in fragmenting the system-world of the course texts, was to:

- support the institutionalization of self-reflexive, historically-grounded, culturally-specific, intellectually vibrant academic field of curriculum studies in complicated conversation with each other . . . [in ways in which] they do not obscure processes of their institutionalization and intellectual formation, thereby betraying their political origins and subjective sources. (Pinar, 2006, p. 178)

In my designing of the course system-world of texts as a complicated conversation I became increasingly aware of my subjectivity and my political agency. For instance, I was confronted with my attachment to the texts I had selected. I had to ask myself if the texts, in fact, were serving the interests and needs of my students, or if they even aligned with my own aspirations for the course? The fundamental problem I encountered in designing the course texts as a system-world of open-ended possibilities is that there is no limit to the number of texts that are options for consideration. And yet,
as the course designer, my task is to be selective within the constraints of the course. Like the curator of an art gallery who has limited exhibition space I had to make choices. I had to decide what I intended to be a part of the conversation and what I would leave out.

Having abandoned the synoptic text, I became the curator of my select revealing texts. I began to carefully study each article that I selected for the course and to consider what it said and why I wanted it as part of the course conversation. As my own study of the course topic deepened, I found myself writing a synoptic text. That is, I began with *The Fifth Discipline* text and wrote notes on that text to assist my students with the study of that text. When I dropped *The Fifth Discipline* as a textbook I replaced it with an article that provides a summary of the key ideas in the book. In addition, I expanded my own notes by quoting and paraphrasing key ideas from the book that I wanted to keep as part of the course's conversation. Later, I replaced Senge's article with my own summary of his key ideas, substituting his classic article with a more contemporary one he wrote in collaboration with others. It was an emotional moment as I was quite attached to his earlier conceptualizations, however, I also realized that Senge's ideas and my own had been redacted over time and I had to decide if my aspiration for the course was the history of the topic, or its ongoing conceptualization and practice. I was confronted with the realization that this course reflected my own study. It was the transformative text of my own course of study presented to my students as a revealing of what I have learned.

In the running of our individual studies, my students and I both brought forth transformative texts in the form of statements of understandings, practices in practice, and making of things. We read in the broad sense that Rorty (1997) suggests, reflecting on what we've read, writing notes about what we think, discussing what we've read and what we think with each other; and we wrote papers and made presentations to articulate for ourselves, and to demonstrate to others, our transformation. Similarly, our practice of doing things, notably, the language arts of our speaking, reading, and writing are transformative texts brought forth by our running. Lastly, we made things, notably, the array of textual artifacts we produced, such as, our notes, papers, and presentation slides. These artifacts were not only encodings of our statements of understanding and accounts of our action, but representations of our rhetorical ability to make texts.
From the transformational artifacts of my own study of “The Learning Organization” emerged my design of study as a system-world of texts: (1) a study’s aspirational texts intending what is to be revealed and transformed, (2) its revealing texts of the subject matter, and (3) the students’ own transformative texts to be produced through their dialogue with the world of their experience and with others’ experience. What is problematic about study’s emergence as a system-world of texts is not that this system-world acts to structure study, but rather that these inscribing system structures go unseen in the places of study, or schools, which institutionalize these textual structures. In the context of its emergence as lived-study Senge’s (2006) text The Fifth Discipline was a responsible system-world in the support of authentic learning. Indeed, in the past it helped speak for me in the running of my own study of the subject. But, the problem with any text that becomes a system-world of study is that in its arrested development it fails to move and co-evolve with the life-worlds of study and teaching.

4.5.5. School as System-World of Study

Teaching emerged from familial and community relations, then, became a professional form of work, which in Roman times took various forms, including a Ludi Magister (the teacher of elementary reading, writing and grammar), a Grammaticus (the teacher of secondary writing and speaking skills, and some literary analysis), and a Rhetor or Orator (the teacher of rhetoric who trained spokesmen in the practice of law and politics) (Poynton, 1934). A Roman of great wealth and status may have also been taught by a Philosopher, typically one in Greece, in a philosophic school of thought. I like to imagine—although it may actually be an anomaly not a norm—that the ideal practice of academic teaching in antiquity and throughout much of the Middle Ages looked something like the Socratic style dialogue Augustine (1953) had with his son, Adeodatus, in On The Teacher. In this dialogue Augustine engages his son in an intellectual form of play, guiding him to points of curiosity or confusion and then unraveling each puzzle in a way that not only brings clarity, but also enjoyment. Augustine demonstrated a masterful grasp of his discipline as he progressively problematized ideas with questions acting as scaffolds that generate new understandings, and further questions that kept his son at the leading edge of his developing intellectual ability. Conversely, his son demonstrated a desire and
commitment to experience the force of the world, to understand the meaning of things, and ultimately to know the truth. Together, their co-creative curiosity created a tensionality between a problematic space of facts and a revealing of truth.

From the fall of the Roman Empire in the fifth century until the emergence of the Medieval universities in the twelfth century the oratorial tradition continued to dominate the approach to formal study. However, with the loss of all but a few texts from antiquity, study of the *septem artes liberales* was meagre in comparison to the richness of Roman or Greek study. The study of oration became empty and more technical. And philosophic discourses became theological. Nevertheless, the old ideal of liberal studies, albeit now with Christian characteristics, remained strong. As Roman municipal schools declined in the fifth century due, in large part, to the de-urbanization of Europe following the collapse of the Roman Empire, ecclesiastical officials began to establish their own schools to provide the church with an educated clergy. In the period leading up to the emergence of universities in Europe during the Middle Ages, formal studies primarily took place in cathedral schools, monastic schools (*Scholae monasticae*), or through private tutorage.

Throughout the Middle Ages, earlier institutional structures persisted. Hamilton (1989) describes the typical medieval schooling situation as “an educational relationship entered into by a private teacher and a group of individual scholars” (p. 37). For instance, the private law schools in Bologna were “opened and run by each master after his own fashion, gathering together the students who had entered into an agreement with him and paid him fees (*collectae*) in return for his teaching” (Ridder-Symoen, 1992, p. 48). The formative institutionalization of study by teachers outside of the family context was a highly entrepreneurial enterprise. What did this look like? Hamilton (1989) summarizes the lived-context of the medieval teacher and student relationship:

Like guild masters and their apprentices, teachers took students at all levels of competence and, accordingly, organized their teaching largely on an individual basis. Such individualization fed back, in turn, upon the general organization of schooling. First, there was no presumption that every student was ‘learning’ the same passage. Secondly, there was no pedagogical necessity that all students should remain in the teacher’s presence throughout the hours of teaching—they could just as easily study (cf. Memorize) their lessons elsewhere. And thirdly there was no expectation that students would stay at school after their specific educational goals had been reached. Essentially, medieval schooling was
a loose-textured organizational form, which could easily encompass a large number of students. Its apparent laxity ... was not so much a failure ... of school organization as a perfectly efficient response to the demands that were placed upon it. (pp. 37-38)

This history of schooling brings to mind a contemporary critique that our modern schooling design of “pushing students together in age-group batches with one-pace-fits-all curricula and hoping they pick up something along the way” (Khan, 2012, p. 1) is failing us. The claim of this critique is that modern formal education has a legitimacy crisis. The life-world challenge to the modern systems-world of schooling is that “it needs to be brought into closer alignment with the [life-]world as it actually is; into closer harmony with the way human beings actually learn and thrive” (p. 11). It is a hopeful and humanistic anticipation of a future where the “loose-textured organizational form” that was characteristic of medieval schooling (Hamilton, 1989, p. 38) is restored to our institutions of study. The difference today is the new idea that information “technology has the power to free” teachers and students from the present “limitations” of inhabiting school as a real place, and that the Internet is now able to make “education far more portable, flexible, and personal” and “far, far more accessible, so knowledge and opportunity can be more broadly and equitably shared” (p. 11-12). This is the anticipation in The One World Schoolhouse future articulated by Salman Khan (2012), founder of The Khan Academy. It is a vision of a new system-world of study built on the sort of web learning management system foundation I once designed. The Khan Academy’s web-based learning system is a successful prototype of Khan’s vision of a new system-world of study designed in response to a life-world understanding that “life is school” and that “at every moment, we are both students and teachers; [where] we learn by studying [and by] helping others, by sharing and explaining what we know” (p. 12). This suggests a co-creative system of designing a co-intentional life-world of study.

What is The Khan Academy as a prototype of the future of study? Khan (2012) recounts that his Internet-based study site emerged from his tutoring relationship with his cousin Nadia. The unique design problem Khan solved was, first, how to effectively tutor his cousin at a distance, and second, how to scale up his tutoring model to an increased number of students. Khan began remotely tutoring his cousin Naida in mathematics using Yahoo Doodle, which allowed him to draw out math concepts for Naida to see
while explaining them over the phone. His success in tutoring Naida soon led to a growing number of remote tutees. According to Khan, he had experimented with group lessons using Skype teleconference software, but discovered that they were not as effective as one-on-one tutoring. To help manage his workload he wrote software to generate practice questions and to track each student’s progress, but Khan’s schedule limited how many lessons he could teach. His solution, at the suggestion of a friend, was to record his lessons and distribute them through the YouTube video social network. Because there was a ten-minute limit to YouTube videos at that time, Khan had to keep the length of each lesson to 10 minutes or less. YouTube’s technical requirement forced Khan to modularize his lessons into short units, which were accessible in any order at any time. Khan’s disciplined modularization of the traditional lecture format, delivered through the social network structure of YouTube made Khan’s recorded lessons personal. That is, the traditional lecture was transformed into the node of a knowledge network, a loose federation of videos—many lessons loosely joined (Weinberger, 2002). The format proved to be revolutionary, as a supportive system-world for many unique life-worlds of study. The Khan Academy has grown into a massive self-paced personalized study resource of logically decomposed subject matter—including mathematics, computer science, chemistry, physics, history, economics—in the form of micro lecture videos, associated software-based exercises, and personalized software that tracks and analyzes the student’s mastery of all their selected subjects of study.

Is The Khan Academy prototype a likely anticipation of the future of personalized self-paced study? Perhaps its loose-textured organizational form is the future, but if so, why did this form originally disappear? The historic answer to this question is that in the twelfth century groups of masters or students began to incorporate themselves, “[taking] one of the standard names for a guild, very often universitas, a term originally bearing no connotation of breadth of curriculum or scholarship” (Kimball, 1986, p. 62). The actual institutions of study at the time were known as studium, or studium generale, from studia referring to study. But, the common way of referring to the students or teachers of such and such a place was their incorporated guild terms universitas scholarium (the university of students) and universitas magistrorum et scholarium (the university of masters) (Ridder-Symoen, 1992). By the thirteen century the singular term universitas, or university was likely in common usage. The first of these new universities gradually
emerged from existing schools, including the first two universities, which emerged at about the same time. The University of Bologna emerged from a collection of private law schools. And the University of Paris, emerged from the cathedral school of Notre-Dame and the monastery school of Sainte-Geneviève, along with other private schools with teachers licensed by the school of Notre-Dame (Ridder-Symoen, 1992).

4.5.6. Study as Schooling System

The first significant appearance of mass schooling in the West came in 18th century Prussia as part of that nation’s effort to establish its identity and industrialize its economy. However, it should also be noted that the template for this modern education project of mass schooling was first prototyped on a smaller scale by the 17th century Czech Protestant Bishop John Amos Comenius (Sadler, 1966) and by others, including Calvin in Geneva (Monter, 1967). Nevertheless, it was the Prussian project that first projected this future image of schooling widely upon the modern world. Its results were certainly impressive; as a consequence of the Prussian mass public education project by 1841 the literacy rates in Prussia were “90 per cent and increased to 100 per cent by the end of the century” (Bowen, 1972, p. 322). This was an outstanding accomplishment, when you consider that literacy rates in Europe (including Prussia) prior to this project averaged in the range of 10-15 percent (Butts, 1973; Gutek, 1995). The success of this system got the attention of other modern education projects (such as, those in France, Britain, United States); by the latter part of the nineteenth century “Prussia had become the mecca for educational administrators” (Bowen, 1972, p. 321). Consequently, the efficient bureaucracy that had enabled Prussia (and later Germany) to achieve its vision of “a comprehensive system of schools with a reasonable degree of articulation” (Bowen, 1972, p. 326) was emulated widely by other Western education systems.

How did the rationalization of the Prussian life-world bring forth this modern system-world of curriculum as the institutional text? I believe there were two distinct, but related, dimensions at play in the emergence of these modern bureaucratic systems of education in Prussia and beyond. First, is the modernization of society that Weber observed; and second, is the modern condition of thought from which ideas of modernization arose. The connection between these two aspects of the modern world of
study is commonly known; however, the distinction is equally important, because while
the premises of modernity are (arguably) dead, their consequences live on.

The German sociologist Max Weber (1952, 1958) observed what he saw as an
inevitable rationalization of his society in the modern age. Weber (1952) noted the way
that pre-modern institutional forms gave way to new rational, logical, and predictable
rule-based social control structures, which he termed bureaucracies. Moreover, Weber
posited that a rational bureaucracy was the most stable form of organization to manage
large scale and complex enterprises like governments, industries, and schools. In the
hands of the Prussian ruler, Frederick the Great, bureaucracy proved to be a powerful
concept. Frederick was a bureaucratic genius, and this idea served him well, as it was a
key factor to his successful military campaign to unify Prussia; and once unified, to
manage the nation’s subsequent economic and political modernization. The bureaucratic
model rationalized the government, the industrialized complex, and the state-funded
mandatory national schooling system. The Prussian Volksschulen (school system) was
established in the eighteenth century to help support the early industrialization and
political unification efforts (Butts, 1973; Gutek, 1995). At first limited to elementary
schooling, state support was eventually extended to include education at a secondary
level; including university preparation schools (Gymnasium) and trade schools
(Realschule). On one hand, the benefit of this bureaucratic system was the massive
expansion of the collective Prussian life-world of study; on the other hand, Weber
observed that over time this institutional systemization could become an “Iron Cage” one
can’t escape, and that it ultimately dehumanizes the life-world (Pugh & Hickson, 1989).

The practical social actions and productive products of modernization arose for
the modern condition of thought. In the mid-17th century, the seeds of the Enlightenment
(and more broadly speaking, the Modern Era) were planted by Descartes’ Discourse on
Method, published in 1637 and by Isaac Newton’s Principia Mathematica in 1687. These
two conceptual insights were critical redactions of two longstanding Western thought
traditions and together generated a new paradigm of study. That is, ways of thinking
inspired by Plato’s ideal Forms and Aristotle’s normative ideals were supplanted
(respectively) by Descartes’ method of rightly conducting reason (philosophic positivism)
and Newton’s system of mathematical physics (scientific method). Consequently, (and
irrespective of any deductive or inductive distinction) the pre-modern ‘organic’ paradigm of intellectual coherence shifted into a modern ‘mechanical’ one. This new paradigm of learning was brought forth by a ‘constructivist’ model of knowledge, which is at once, still modern and is presently shifting into something that is ‘beyond’ that definition. Taken together, Descartes and Newton signalled a conceptual shift in what we understand knowledge to be, and how we might best acquire it. As a result, the answer to what is most worthwhile in education changed—that is, education became scientific.

Responding to the first of Aristotle’s two essential curricular questions—“What knowledge is of most worth?”—Herbert Spencer (1896) writes, “the uniform reply is—Science” (p. 93). After systematically considering a broad and diverse array of worthwhile human knowledge Spencer makes the following summary and conclusion:

For direct self-preservation, or the maintenance of life and health, the all important knowledge is—Science. For that indirect self-preservation which we call gaining a livelihood, the knowledge of greatest value is—Science. For the due discharge of parental functions, the proper guidance is to be found only in—Science. For that interpretation of national life, past and present, without which the citizen cannot rightly regulate his conduct, the indispensable key is—Science. Alike for the most perfect production and highest enjoyment of art in all its forms, the needful preparation is still—Science. And for purpose of discipline—intellectual, moral, religious—the most efficient study is, once more—Science. (pp. 93-94).

While today Science in education is commonplace, in Spencer’s day his complaint was that science, which he considered “of such transcendent value” actually “received the least attention” within education (p. 95). Nevertheless, scientific and positivist thinking did, in fact, widely permeate modern thought. In Descartes’ method of right reason, and Newton’s scientific method we looked to build a secure understanding of our world. As a result of these methods of thought, new ideas, such as, Hegel’s view of history as dialectical process, or Marx’s view of economic development in social-cultural terms, or Spencer’s view of progressive social development as a process of social evolution began to shape our thinking and our education. A collective vision emerged to bring the world into one moment of time, culture, economy, and political system. However, the viability of this project came to be seen as an ever more impossible goal.
The old idea of teaching as a helping act, leading students to discover the truth through their own act of study, was transformed into a directive act of instructing. Teachers became instructors and students became learners. The hope of a scientifically instituted education was twofold. First, we moderns thought that if we could understand how people learn, we could then understand how to instruct them in their learning. Metaphorically, we saw people as learning “machines” who could be “programmed” with instructions, just like we program computers. Second, moderns believed science could give us secure, reliable Truth, which we could then program our minds to hold. The problem is that people are not machines, and scientific knowledge is not secure.

What makes bringing forth our system-worlds of study problematic is not the system-worlds themselves, but rather that, in our eagerness to construct new worlds, we have failed to take account of, and responsibility for, what was destroyed. Giving a privileged position to what is constructed, over what is lost, has become our induction into error. This is not to say, as Fry (1999) points out, that what is lost in making systems of study can simply be avoided; rather, “it is to say that the choice of what is destroyed, how it is destroyed, how it is done and who takes responsibility is critical” (p. 52). I turn now to conclude my progressive moment with a discussion of how our systems destroy.

4.6. The Colonization of Study

A critical characteristic of systems is that they emerge from the resources of the life-world as a way of resolving the difficulty of sustaining strong communicative action to coordinate social action (Habermas, 1984). To this end, the initial intention of systems—that is, the legitimacy given to them by the life-world—is to serve the needs of the life-world. The system’s legitimacy is furnished by the life-world; and it is only ever through the life-world, and its media, that legitimacy can be regenerated. However, systems can also act to colonize the life-world. That is, the system and its media can become decoupled from the life-world and its media, thus reducing the sphere for communicative action. For instance, curriculum design at a university could be a place of communicative action where deliberation and value-commitments are continuously renewed. However, learning outcomes, program requirements, courses, and syllabi often become standards set by various levels of institutional governance, ‘systems’ that become de-coupled from
any common sense (life-world) conception of what is ‘good’ study and teaching. As the system colonizes the life-world, Habermas believes a crisis ensues; that is, as a result of it destroying the symbolic reproduction of the life-world, the system undercuts its own legitimacy.

One implication of Habermas’s systems concept and its relation to the life-world is that the way that curriculum is conceptualized as a life-world text may also be understood as a system. On one level, Pinar (in Pinar & Grumet, 1976) identifies the fact that “curriculum reconceptualized is currere; it is not the course to be run, or the artifacts employed in the running of the course; it is the running, is our experience of our lives” (p. 18). Clearly, this lived-experience may be understood as a life-world, but it is also inscribed by language composed of “specific language systems and traditions which have specific histories and political legacies” (Pinar et al., 1996, p. 32). In this way, Pinar, et al. (1996, p. 32) argue, re-conceptualized curriculum may be understood as a text, which, “implies both a specific piece of writing and much more broadly, social reality itself” (p. 48). The life-world conceived as text, “implies that all reality is human reality, and as human reality, it is fundamentally discursive, a matter of language” (p. 49).

While the life-world of curriculum is, indeed, “a matter of language” (Pinar et al., 1996) as an institutional text, Habermas’s (1984) theory of communicative action implies this matter of language—as a social phenomena—can also be analyzed through a methodology oriented to systems. The critical insight here is that the notion of text itself may be understood as a linguistic system. The origin of the word “text” is the Latin word textus, which meant a woven fabric, derived from the verb texo, to weave or construct with care. Consequently, notwithstanding the discursive importance of text in poststructural literary terms, equally important is the nature of texts as a system-world design. The etymology of the term text suggests it can be understood not only in linguistic terms, but also as something designed—that is, a technological system shaping communicative action.

What is the significance of text conceived as a system? Ong (1982) observes, “writing and print and the computer are all ways of technologizing the word” (p. 80). Given its deep penetration into our life-worlds, it may seem strange to consider writing a
technological system. Indeed, writing appears to be a natural part of our being in the world; nevertheless, it constitutes a textual system-world. Ong argues, writing "is not a mere appendage to speech. Because it moves speech from the oral-aural to a new sensory world, that of vision, it transforms speech and thought as well" (p. 85). Writing as a system-world has a designing power to restructure the human life-world. It has a history that has shaped the plasticity of human consciousness in a way that is similar to how our buildings have shaped and are shaping our dwelling in the landscape. And in the tradition of orators and the rhetorical art of discourse, writing has historically given shape to our curricular texts and our dwelling in the lived-landscape of study. Past texts projected as futures have now become our present texts wherein the future is again anticipated—our textual system-worlds are designed to go on reproducing themselves.

Curriculum as an institutional text is a system. Indeed, historical curricula have, predominately, given primacy to the study of communicative systems, notably language, followed by symbolic systems, such as writing and mathematics. The orators brought forth the classic liberal arts curriculum, dividing it into the trivium and quadrivium. The former directly encompassed the three verbal/written disciplines of grammar, rhetoric, and logic; the latter, the four mathematical disciplines, of arithmetic, geometry, astronomy, and music. These curricular foundations are still clearly present in our contemporary academic subjects. Moreover, our thinking systems, such as, the scientific method, which can be divided into quantitative (experimental, correlational, and survey) and qualitative (grounded theory, ethnographic, narrative) give our academic subjects their conceptual grounding as forms of inquiry. Similarly, and often contrasted with the scientific method, are other systems of inquiry like literary and artistic criticism, which sometimes are mixed with scientific methods, as with psychoanalysis and semiotics. More recently, applied disciplines like business, architecture, engineering, medicine, and education layer upon these communicative and inquiry systems as systems of practice.

Clearly, how curricula are taught lends itself most self-evidently to a system orientation of analysis. In this regard, we might consider the bureaucratic nature of a school as an institution, operating as systems of power, through various layers of statutes, policies and procedures, and processes that apply these governing regulations. A school may also be regarded as a market system where subjects of study, and hence
funding for the development and teaching of those subjects, are shaped by economic forces. The contemporary debates regarding the disruptive possibilities of Massive Open Online Courses (MOOCs) in universities acutely illustrates this fact.

What is a MOOC? In practice, MOOCs are an emerging form, so there are many variations. Functionally, a MOOC is quite similar to The Khan Academy and it might even make use of videos and software exercises from The Khan Academy. The difference with a MOOC is that it is not intended to be an open-ended study resource, but rather is a particular course of study. Indeed, the MOOC takes the form of a digital university course. The defining characteristic of a MOOC, however, is open participation. MOOCs are typically designed in two ways. The first type are broadly open courses, meaning it has open access to anyone, is structured with open-ended learning outcomes and study paths, and is composed of open licenced resources that participants are encouraged to share, remix and reuse as part of the MOOC’s co-creation over time, or in other courses of study. The second type of MOOCs consists of traditional digital university courses, often composed of proprietary content created, or acquired, by the course professor and or his or her host institution, but with open study access to the course.

Siemens (2012) of Athabasca University has termed the first type, cMOOCs, because of their connectivist educational “focus on knowledge creation and generation,” and the second type, xMOOCs, which as traditional institutionally driven products “focus on knowledge duplication” (para. 3) and economies of scale. Whereas cMOOCs are institutionally a loose-textured social network organizational form, xMOOCs fit clearly within the universitas guild form of social organization that we know today as the university. In part, this is because of the social legitimacy we have given to the university represented by its system constructs, notably, its accreditation status and credentialing authority. As a guild of professional scholars, the university’s status and its authority to credential its membership is important in our modern economy of professional work. In this sense, the university has economic brand value, which explains why xMOOCs tend to be either the product of established university brands (such as, edX), or are associated with university brands (such as, Coursera). xMOOCs in some areas of study,
such as information technology, are establishing alternative forms of social legitimacy through industrial relations (such as, Udacity’s portfolio-based Nanodegree programs).

One anticipated future of the xMOOC—as a present prototype of the future system-world of study—is the creation of superstar teachers, likely, at top universities like Harvard and Stanford, who distribute their courses via the Internet to a massive global audience of students, subordinating other teachers of that subject to glorified teaching assistants. In this future world of study, education like other global products and services will likely become commodities leading to brand consolidation and the localization of global brands through the distribution of learning centres akin to retail networks. Another possible scenario is that localized schooling will be able to retain its localized independence and that the xMOOC prototype will simply be a further extension of the ongoing standardization of course materials that has already occurred within the textbook manufacturing industry. Rather than the notion of a course text being bound to a paginated book, these texts will become fully articulated hypertext courses distributed through an increasingly open network of course management systems, used by learning institutions to deliver their course offerings. In either case, xMOOCs will be used both as a cost reduction strategy—a way to gain efficiencies in non-core offerings—and as a brand growth strategy to export courses that reflect an institution’s particular strengths. In social terms, what could be lost with the emergence of these self-paced, personalized, system-worlds of self-study, which on the surface sound attractive, are the rich relations of professional teachers capable of engaging students in complicated conversations.

The critical danger is that our technological system-worlds of curriculum, which increasingly take the form of hyper-textual knowledge networks, may lay a claim on us; they may dominate us, or perhaps as a design that goes on designing, they may be endowed with the power to save us. Ong (1982) echoes this insight in his reference to writing, where “the new technology is not merely used to convey the critique, it brought the critique into existence” (p. 85). Given the textual character of curriculum as the lived-experience of human reality, and as a linguistic system-world the reconceptualist move toward the emphasis on understanding curriculum as a bringing forth of text is critical. However, the medium of curriculum is not static; its supportive system-world has shifted throughout history and it is shifting again before our eyes. Text is giving way to
hypertext, just as our oral system-worlds gave way to textual system-worlds in a past generation.

In his own progressive moment of currere in *What is Curriculum?*, Pinar (2004), citing and commenting on Landow (1992), writes “a hypertext system . . . (too hopefully, it seems to [Pinar]), permits the individual reader to choose his or her locus of investigation and experience” (p. 137). According to Pinar (2004), Landow believes “hypermedia systems provide an environment in which exploratory or discovery learning may flourish” (p. 139). The Khan Academy prototype illustrates this characterization of curriculum as hypertext. An implication of this hypertextual structuration of the shared live-world of study is that “because hypertext diffuses selfhood and complicates authorship by its intertextuality while it embeds both in textuality generally, Landow (1992) argues that hypertext implicitly discredits mainstream notions of pluralism . . . [which] require a political and/or cultural center” (Pinar, 2004, p. 141). Citing Landow (1992) Pinar writes hypertext, “functions to destabilize the very conception of a permanent center, or the center as any but a traveling, momentary focus of attention” (p. 141). However, centres do actually emerge in the growth of hypertext networks. Barabási’s (2002) research shows that in scale-free networks, such as the Internet, linking behaviour between nodes within the network demonstrate preferential attachment. That is, he suggests, “nodes always compete for connections because links represent survival in a connected world” (p. 106). What Barabási terms hubs, or what Landow referred to as centres, emerge as a consequence of a “fit-get-rich behaviour, meaning that the fittest nodes will inevitably grow to become the biggest hub” (p. 103). A notable example of this phenomenon on the Internet is the centrality of Google for Internet search, Facebook for social networking, and YouTube for videos. Put in curricular terms, certain texts—such as, intents, activities, and resources—as network nodes are more fit than others and as a result grow into hubs, influencing what becomes the preferential attachment of other nodes within the hypertext network of study.

It is still far too early to discern what effect hypertext will ultimately have on the life-world of study as an institutional curricular text. The problem, as Landow (2006) writes, is “too many of us . . . remain so deep inside the culture of the book that we automatically conceive of digital media in terms of the printed book” (p. 314). For
instance, he suggests the “inappropriate use of the printed page as a basic model in an electronic environment appears again in the widespread misuse of PDF (Portable Document Format) files on websites” (p. 316). Landow’s contention is that it is inappropriate because it resists searching and linking. However, new technologies like the ePUB (short for electronic publication) format and Google Books are making the book format increasingly hypertextual. Also of concern to Landow is the observation that course websites tend to be self-contained and limited to a particular instructor, and that they don’t encourage wide collaboration in the form of sharing, remixing, and reusing. Part of this problem was actually a legal concern regarding course content copyrights. However, new legal frameworks, such as, Creative Commons (CC) licences, which enable legal sharing, remixing, and reusing of content have begun to make truly open course collaborations possible, as evidenced by cMOOCs that often use CC, or similar licences. A third resistance Landow identifies is to the way that hypertext more deeply entwines the functions of the reader and the writer in the form of co-creative intertextuality. It is this last resistance, which if overcome, will be the most transformative, as has already been witnessed by how the WikiMedia hypertext technology made Wikipedia possible. Wiki technologies are being used to co-create intertextuality in web-based courses to interesting, but certainly not widely transformative effect, for it is still resisted by the dominance of our book culture within our mainstream institutions of study. Moreover, the resistance to intertextual reading and writing is not only technical but also conceptual.

On the one hand, hypertext as “the evaporation of the ego” (Pinar, 2004) does enable a life-world of study as a “complicated conversation” that institutional system-worlds, such as, “government and corporate entities cannot control” (p.141). On the other hand, hypertext does more than “diffuse and democratize” (p. 142); attractive nodes emerge within the network and they act to simplify the conversation of study. Baetens and Truyen (2013) observe that the importance of connections in hypertext system-worlds has led to a distrust of the hegemony of unhampered linking. For instance, the number of “friends” we are linked to in our social hypermedia world has become more important to us in our sense of well-being, than the quality of those links as human relationships. Similarly, the borderless nature of hypertextual study can lead to a focus on traversing links rather than reflecting on the texts. Hypertext as a
technological design invites the authoring of endless possibilities by linking together a borderless world of study as discontinuous movement from text to text. As a post-structural destabilization and deconstruction of meaning, the unsettling aspect of hypertext’s discontinuity can be to serve as an act of decentering. However, the difficulty that emerges is that “if there is no continuity to challenge or criticize, discontinuity itself loses its sting and turns into hampering indifference” (p. 478). Our lived-experience is holistic, continuous, material, and unique and without it, as Pinar (in Pinar & Grumet, 2015) laments, we may face “the end of curriculum as lived, as knowledge degrades into information, history disappears into presentism, materiality into virtuality, and alterity is incorporated into the homogeneity recognition requires” (pp. vii-viii). Now, the hypertextualization of our system-worlds is not the sole contributor to this emerging situation, but I suspect it is a partial contributor. In response to these concerns, Baetens and Truyen suggest we take the opposite tactic in our hypertextual reading and writing. Rather than focusing on “the possibilities of linking” we might rather insist “on the constraint of interrupting” (p. 477). The critical insight here is an understanding of hypertext as fragmentation, meaning both “(spatial) segmentation on the one hand and (temporal) periodization on the other” (p. 477). By re-attending to hypertext as fragments, we return to hypertext as text and are reminded that as a spatial segmentation textual fragments are characterized by first, their resistance to integration with a whole (that is, they are defined by an absence of the whole), and second, that “the fragments composing a text are not ‘linked’ but ‘juxtaposed’” (p. 480). Moreover, as a temporal periodization we are reminded that textual fragments are resistance to continuation. By remembering hypertext is also text, we can restore it as lived-experience by attending more deeply to the fragments and studying the relationships between fragments as juxtapositions, rather than merely make and follow links. In sum, I suggest interrupting hypertextuality involves attending to, (1) what is absent in text fragments, (2) the relation between texts as different worlds, and (3) the balance of both discontinuity and continuity, such that we might avoid creating attentive indifference.

The significance of this discussion, for me, is not as a study of hypertext but as a realization that we are all designers “who design in a designed world, which arrives by design, that designs their actions and objects, or more simply: we design our world, while our world designs us” (Fry, 1999, p. 6). Curriculum as text does something. It is a
system-world designed to support the life-world of students and teachers, which arrives by the life-world’s design and subsequently designs the life-world’s designing. A critical theorizing about design and designing is necessary to understand the ‘bringing forth’ (the life-world designing) of the ‘enframing’ (the system-world designs) of curriculum. As a doctoral student presently studying design while embedded in the design of my own study, the surrounding world supporting my study has become increasingly hypertextual. Indwelling this system-world, I am drawn to accept its invitation to focus on the possibilities of links. However, I choose now to interrupt this linking and resist continuation. Consequently, I see my regressive and progressive moments in this present study as literary fragments in juxtaposition, first, to be considered as my analytical moment, which will form a third fragment adding to the first juxtaposition, then, to be considered as my synthetical moment, forming another fragment.

In summary, I anticipate a future understanding of curriculum design as an understanding of the life-world of curriculum as lived educational experience, defined as an emerging dialogue with the experience of one’s own life-world, while engaged in communicative action with one’s shared life-world in the bringing forth of supportive, not colonizing, system-worlds of study and teaching from the life-worlds’ resources. This is a discourse of “what is to be taught and how” as institutional texts co-created by the life-worlds of students and teachers. This curriculum as text is a designation—a sign making that acts in, upon, and through the discursive life-worlds of students and teachers. The designation of “what” is studied and “how” it is taught is a bringing forth of a curricular system-world of study and teaching technologies and lived-experienced generated by, and for the purposes of, the life-worlds of students and teachers. Here, the life-world and the system-world necessarily stand in relationship to each other, the life-world resources the system-world and the system-world supports the life-world. The system-world design emerges as a rationalization of the human life-world, easing the difficulty of sustaining strong educational communicative action. However, this emergence is a careful one, wherein the making of the system-world co-evolves with an understanding of the life-world so that the system-world does not suffocate the life-world, restricting life within it.
Chapter 5.

The Analytical Moment

We now arrive at the analytical moment, which as my first of two acts of self-conceptualization is an examination of both past and present. It is an articulation of my intuitive comprehension and cognitive codification of what I have uncovered in my first two moments. As Pinar writes, it is a working out conceptually of “what I've been and what I imagine myself to be” (p. ix). This is an analysis of my educational experience as a designer and designer of curriculum with an emphasis placed on my understanding of the institutional text and the shared life-world that my understanding of these texts has emerged from. First, I shall analyze the historic emergence of design practice and its relationship to my understanding of my own lived-experience of design and designing. Second, I shall use Tyler’s influential text, Basic Principles of Curriculum and Instruction as my frame of analysis to make sense of my own lived-experience of designing curriculum as an institutional text, as a world shaped by what Tyler has brought to it.

5.1. Design’s Historic Emergence

The rationalization of the lived-experience of study has over time and at scale, brought forth the system-world of curriculum, which Pinar et al. (1996) characterized as an institutional text. These texts, as something institutional, are designed. Etymologically, the Latin root of the word institution is institutum, which meant “something designed.” The implication, here, is that curriculum as institutional text is a design process. Design has always been present, even if it hasn’t always been explicit. Indeed, the worlds of study, or more generally learning, and design have been in a dialogue with each other from the dawn of humanity. In the context of my own lived-experience I understand my act of study as a design act. Thus, the question arises: What is design? Put simply, and as it is implied by the word’s Latin root word designare
(to designate), design is a designation of action that seeks to change existing situations into preferred ones (Simon, 1996). The words ‘designation of action’ are key.

Understood as a designation of action, design is functionally a division between determination and production. That is, it is a conceptual division of action that has been exploited by successive divisions of labour throughout history. The capacity to design, and its varied artifacts, processes, and practices are central features of the human experience. The precise origin of this human capacity is difficult to determine, but it is clear that the human hand has played an instrumental role. For it is the unique plasticity and flexibility of the human hand that first afforded the human mind with the diverse means to act on the structures of the world and to make worlds. Similarly, my own beginning as a designer emerged from my playful making.

Haskett (2005) argues our first tools as a species were clearly extensions of the hand’s capacity to grab, claw, cup, poke, punch, press, chop, and so forth. He describes the evolution of early designs, as extensions of the hand’s functions:

the hand is capable of clawing soil to take out an editable root, but a digging stick or clam shell is also capable of being grasped to do the job more easily, in a sustainable manner, reducing damage to fingers and nails. The task is made easier still if a shell is lashed with hide or fiber at a right angle to the end of the stick, to make a simple hoe. (p. 9)

This formative design act is what Jones (1992) refers to as “craft evolution” (p. 20). It is an abstraction of human experience, where the human mind generalizes an affordance of a natural or somatic form as it is bound to a particular function, or functions. For instance, the form of a clamshell or a cupped hand, which both afford holding water, is generalized in the mind as an abstract and transferable concept. In this example, the design abstraction becomes a mental model for a form that contains—a container. I characterize this particular approach to designing as a designation-by-making. Put simply, one designates a world through making it.

In my life as a child I made play worlds through my playful acts of making. These play worlds existed as products of my play, but they also came into existence through my very act of making. That is, they both existed as worlds and came into being through
In designation-by-making, ready-made natural objects or human-made artificial ones serve as the designer's conceptual reference and storehouse of knowledge. As Jones (1992) suggests the "essential information" generated by designation-by-making is, firstly, "the form of the product itself" (p. 20). Fragmented knowledge may also be stored, but in the physical form of patterns, cross-sections, and other template references. The procedural steps of making are stored as concrete memories learnt through apprenticeship. In short, each previous design and the exact memories of its production serve as the reference materials for the next design. Thus, each subsequent design is not changed "except to correct errors or to meet new demands" (p. 20).

My reference of my early designing was the world around me, particularly the built environment of my family home and my observations of my father’s making. My making process involved making something like a fort, then remaking it to correct errors and to meet new demands. For instance, as my initial structure arose, at a certain point it might have collapsed under its own weight. I would then rebuild the structure making particular modifications to fix the previous problem or problems. Similarly, in building a structure the demands on the structure might change. Initially, I might have simply built it to accommodate my own use. Having built it, perhaps my brother and sister would want to use it, so I might add rooms or tear the whole thing down and reconfigure it.

Similarly, in my designing of my martial arts program my reference of design were the actual experiences of my teacher and student interactions. I might act out a particular interaction and my memory of that interaction would then serve as the reference for a further iteration where I might change something. Each memory then served as a template for my making of future interactions. Moreover, other instructors may have also learned from my concrete memories of these procedural steps of making interactions through apprenticeship and observation. The benefit of this approach to designing learning interactions was its responsiveness to the life-world of my students.

Historically, designation-by-making has been a surprisingly effective means of designing, as it is the prior made form itself that signifies—or marks out—the action of
future making. The designer's lived experience relating to a form within its environment is what serves to inform the shaping of the form with each new iteration. Through a trial-and-error process, each iteration of a form is created for a particular environment, then utilized in that environment. And it is the form’s actual interactions with its environment that informs future alterations that more closely fit the environment’s demands. Thus, if the environment changes, the form changes in response. This process has resulted in built forms perfectly adapted to a particular use, in a particular environment. Each design form that emerges is culturally, socially and personally designated by the life-world.

My early childhood playful designation-as-making also served as a form of vocational exploration: I first aspired to be a house-builder, then carpenter, scientist, artist, and finally I settled on becoming an architect. I explored these successive roles as my own curricular ends, in curriculum vitae terms, through designation-by-making. Through my play, I made the world of a house-builder, then, this evolved into a more professionalized world of carpenter. Similarly, I made the world of the scientist, taking on the roles of naturalist, and chemist, and marine biologist to name a few. I also made the world of the artist and ultimately the world of the architect, who along with the world of the artist was re-made year after year as I progressed through my formal education.

Now, there is a limitation to designation-by-making. Jones (1992) argues that, because “the shape of the product as a whole and the reasons for the shape, are not recorded in a symbolic medium,” new designs cannot “be investigated and altered without makeshift experiments with the product itself” (p. 20). As a result, the process of experimentation through making is time and labour intensive. Moreover, this process often produces discordant features. That is, features that no longer serve their original functional purpose continue to be reproduced, because their original purpose simply becomes lost from memory. The presence of discordant features illustrate the “weakness of changing only one-thing-at-a-time, and of relying on precedent, when what seems to be called for is a complete reorganization of the form as whole” (p. 20). For instance, in my martial arts designing certain discordant features, such as, stylistic set “patterns existed long after I shifted my curricular emphasis to the study of self-defence. They historically served a functional purpose, but in the course of program development
that purpose disappeared yet the feature persisted, because it had always been a core feature. My challenge was how to work out the program design as a whole.

A critical change occurred in the history of designing, when people substituted symbols for things. The made form’s capacity to symbolically stand as a designation of its own making was conceptually differentiated. The symbolic unity of the made object as both signified and signifier was split apart, physically separating the signifier from signified. This separation of determination from production is most clearly illustrated by the development of designation-by-drawing. The spatial abstractions of drawing, including point, line, plane, volume, the Cartesian grid, standardized units of measure, and mathematic calculations enabled increasingly complex and abstract designing.

Historically, designation-by-drawing allowed the “trial-by-error” process of designing to be “separated from production by using a scale drawing in place of the product as the medium for experiment and change” (Jones, 1992, p. 20). This division of labour had several important benefits, including greater perceptual span of design problems, the capacity to plan very complex and/or large scale project, and accelerated innovation. Designing-by-drawing gave designers, such as myself, the freedom to imaginatively rethink traditional designs by changing many parts at once, rather than being limited by making incremental changes. The conceptual process was much the same as with the craft evolution process at the heart of designation-by-making, the difference was that working through multiple drawing iterations was a lot faster and less expensive than undergoing a similar designation-by-making process.

In my own lived-experience drawing was initially a purely material enterprise, what might be described as colouring. But what is clear from the evidence—my childhood drawings saved for posterity by my mother—is that early on my drawings became symbolic of things that I experienced in my world. My first visualizations were of my mother, father, siblings and my cat. Along with my house and prominent natural elements of my environment, such as, the sun, clouds, trees, rain and snow. My repertoire of subjects rapidly expanded in my elementary school years, and many of my drawings became more schematic and eventually designations-by-drawing.
As my design ideas became more ambitious my father taught me how to draw blueprints. As a young boy it wasn’t safe for me to use tools like a table saw, but I often wanted to use materials like plywood that required a table saw to cut the material precisely and give a good fit between pieces. So, my father would have me sketch out my designs on paper as a way for me to work out all the pieces I would need to construct a design that I might want to make. Then, he would have me cut paper templates for the shapes that I wanted cut from plywood, which he then cut for me.

My art and design experiences, first, in secondary school and, later, in university further developed my reliance on designation-by-drawing as a design process. I first learned paper-based sketching and drafting methodologies and later digital drawing approaches to design. In my professional practice as a university website architect, I made extensive use of designation-by-drawing. I would sketch out different conceptions of the website’s look and feel. I would articulate the user interface components of web pages and their structural relationships in the form of wireframe drawings. To work out the relationships between pages I would draw site maps in the form of hierarchical tree diagrams. To devise desirable human computer interactions I would map them out in schematic form. To normalize and optimize the data structure of relational databases I would diagram data schemas. Similarly, I would draw diagrams to devise the best system configuration of the website’s underlying information technology architecture. And in my designing of programs I would draw courses as boxes within an organizing grid, and draw relationships between courses to specify the study paths of students. In this way I could conceptually reconfigure the design of a program in numerous ways and imagine different pathways that potential students could follow to achieve different ends.

Historically, with this new process of designing came the loss of something from the old process, specifically a loss of knowledge among designers about what designs can actually be made, or not made. Moreover, designers lost touch with the craft-person’s sensitivity to, and understanding of, the particular and varied needs of the life-world’s design situations. As I learned the designation-by-drawing process the bounds of my designs became almost limitless. However, over the years as I moved from my schooling years into my professional practice I became ever more focused on designation-by-drawing. As a result, I lost my intimate connection to the life-world
experience of making things. That is, I increasingly lost touch with my earlier understanding of what was required to make my designs. My development as a craftsperson withered over time as my design development advanced. I became dependent on crafts-people. Now, as a curriculum designer, I still struggle with this loss, where, on the one hand, I design a drawing, such as, an abstraction of university courses and programs, and on the other hand, I seek to continuously reconnect with my lost craft as an educator. This emerging creative tension between determination and production is an important theme arising from this analysis. Before addressing it further, I want to describe a further abstraction that builds upon designation-by-drawing in design.

Closely interrelated to designation-by-drawing was a further abstraction of drawing, known more commonly as writing. Pictographs and ideographs of objects, actions, and ideas developed in many different places independently. And what became writing developed independently in both Sumaria and mesoamerica, and also arguably to some degree (if not entirely), in Egypt, China and India. In the Western story, writing clearly emerges in Sumaria around 3200 BCE, when counting tokens, which were used to keep accounts of things, became abstracted as numeral marks made on a clay substrate (Schmandt-Besserat, 1992). These numeral marks were combined with pictographs and ideographs to keep records (Schmandt-Besserat, 1996). These original forms of writing were invented to efficiently and accurately keep accounts of one’s property. Importantly, it established writing’s linear organization and semantic use of signs, along with conventions for their form, size, order and placement (Schmandt-Besserat, 2007). These writing conventions spread to the making of art, resulting in more complex visual narratives. Conversely, the use of inscriptions in art objects served to emancipate writing from its initial accounting function. Writing, then evolved to replicate speech, affording the recording, compiling, organization, synthesis and designation of ever more complex human ideas. The consequence of this new writing technology was the emergence and the long histories of literate civilizations.

The drawn and written designations of made objects and their associated pragmatic experiences drew design away from the physical world, making it a symbolic representation—that is, mental objects in a mental world. Indeed, language and its subsequent transformation by writing became mental tools, designating being human
itself. As Vygotsky (1978) argues, “every function in the child’s cultural development appears twice: first, on the social level, and later on the individual level; first between people (interpsychologically), and then inside the child (intrapsychologically) (p. 57). Central to this progress is language, which was first a tool for social interaction, then, self-talk for self-direction and self-regulation, and was ultimately internalized as a person’s inner speech (Vygotsky & Kozulin, 1986, p. 228). Writing, it follows, was similarly internalized as a sort of inner seeing. As Ong contends, writing “is not a mere appendage to speech. Because it moves speech from the oral-aural to a new sensory world, that of vision, it transforms speech and thought as well” (1982, p. 85). Through writing we come to see words, and make worlds through words. Indeed, as both Vygotsky and Ong argue we, collectively, have historically made worlds in the form of, first, language, and second, writing, that goes on making our worlds today.

In design terms, writing has made designing a shared methodology over time and at scale. The invention of writing transformed designing into a designation-by-inscription. Writing enabled a further separation of determination from production in the design process, allowing “capacities to be separated from specific problems, to be generalized, and flexibly adapted to other problems” (Heskett, 2005, p. 11). Designation-by-inscription as a design approach acts to reframe a presenting design problem as a system of problems, which can then be systematically solved. Writing allows problems to first be specified, then systematically matched to appropriate methods.

Designation-by-making directly brings forth things. Designation-by-drawing brings forth things through a referential abstraction, or blueprint. Designations-by-inscription brings forth things through the specification of action to be taken in the world. Each layer in the historical development of the design is a further abstraction, or move beyond the material domain of the thing being brought forth. The principle underlying these successive abstractions is reframing increasingly complex problems as simpler ones.

Designing with scale drawings allowed designers to see the whole of their design product at once and to iterate through a succession of design changes rapidly, where the impact of one change on the whole design could be worked out quickly. This approach worked well when the design problem was considered on the level of
components or products. However, products now exist within the context of systems. And these systems exist within the context of communities. The design principle that emerges at this point in the discussion is that any given design exists within a hierarchy of other designs—that is, nested system-worlds. For example, take the design of a house. Within the context of the house there is the design of its components, such as, the living room, bedrooms, and so forth. The product of a house in turn exists within a housing system, defined by the zoning rules for the site and the various sets of building codes and practices. The housing system, in turn exists within a community—the city, which through political action gives shape to the housing system. Designation-by-inscription seeks to simplify the complexity of this whole nested hierarchy and design solutions to simplify the whole system, taking into account the multiple layers involved.

Over time and at scale, designation-by-inscription has encoded our life-world as texts, literally and figuratively. Foucault (1984) writes, “the body is the inscribed surface of events (traced by language and dissolved by ideas)” (p. 83). The “sign systems, which permit us to use signs, meanings, symbols, or signification” (Foucault, 1988, p. 18) became core technologies giving shape to our social conduct and self-constitution. One implication is one’s inscribed body becomes “the locus of a dissociated self (adopting the illusion of a substantial unity), and a volume in perpetual disintegration” (Foucault, 1984, p. 83). Consequently, the designer’s life-world of making may become dislocated by the sign systems inscribing his or her own making. While this sign system inscribes a certain sort of making, this system-world is itself also inscribed by the designation of its own making. The written word is a structure—that is, a design goes on designing.

To illustrate, I shall briefly analyze my childhood encounter with writing. As a young English speaker the written world of English initially appeared as a given part of my life-world experience. I did not initially question how the written word on the page came to be; it simply appeared to exist—there to be decoded into speech.

Learning to decode this sign system into its spoken form and to encode my own speech as writing did not come easily to me. Educational psychologists might describe my struggle to read and write English as a learning disability, and assess me as a dyslexic. However, I have come to view my struggle with text in design terms, as my act
of resistance to a complex and arbitrary sign system. Written English is based on a modular alphabetic system that encodes a set of sounds (phonemes) as different letters or letter combinations (graphemes). Written English has a deep orthography, composed of “1120 ways of representing 40\(^3\) . . . phonemes . . . by different . . . graphemes” and “the mappings between graphemes, phonemes and whole word sound are essentially ambiguous” (Paulesu et al., 2000, p. 91). By contrast, Paulesu et al. note that, in Italian, which shares the same alphabet system, “33 graphemes are sufficient to represent the 25 phonemes of the language, and the mappings from graphemes to phonemes are unequivocal” (p. 91). While I likely had some difficulty discriminating phonemes, my core struggle was with the complexity and inconsistency of written English as a system.

From my perspective as a designer, I see my childhood struggle with learning to read as a technological problem. For written language is a technological artifact, a speech encoding and decoding device. As a technologization of the word writing is inscribed by the designation of its own making. For instance, written Italian is inscribed with a phonetic consistency that written English is not. This inscription has neurophysiological consequences affecting the speed young readers learn the written language and the speeds at which they are able to read. For instance, young Italians learn to read more quickly and Italian university students can read both Italian words and non-words more rapidly than their English counterparts (Paulesu et al., 2000).

As I struggled to excel at each successive level of my schooling experience with the cognitive overhead of the complex and inconsistent phonetic design of written English, I encountered others students who had other language learning experiences, with phonetic languages like Italian. This exposure made me aware that written language does not exist as a given, but is the product of human choice. The graphemes are there by choice. The phonemes are there by choice. The mapping from graphemes to phonemes are there by choice. And the written words are there by choice. It is this hierarchy of collective choices, each building on the others, that designate the design of a written language. These designations, in turn, inscribe one’s designing with words.

\(^3\) There is not a definitive number of phonemes in a language because of accents, dialects and the evolution of language itself.
Now the problem that written language illustrates here is that these design choices are effectively immovable. They have become the assumed structures of a taken-for-granted system-world. In their taken-for-granted-ness these structures go on structuring.

With writing, the design’s historic tension between determination and production folds back upon itself. Our designation-by-inscription has become defined by the product of its own making—the written word. For instance, the deep structure of the written word reveals that it inscribes others worlds according to its own inscription. In curricular terms, it brings forth an institutional text. And while this institutional text is clearly brought forth by human choice, the written word’s power is to inscribe permanence to what it brings forth. Thus, the institutional text becomes effectively immovable, even though it exists as a technological device, which as a device is not a given, and may be otherwise. However, in its taken-for-granted-ness, its particular design goes on designing.

The curricular world as an institutional text was also brought forth through a collective and historical designation-by-inscription, from Plato’s Academy through to Khan’s. First as a student, then as an educator, my lived experience of curriculum as institutional text has been inscribed by this designing. As with the core structure of written language, this curricular world has been brought forth as an inscription by a particular language of design; in its institutional taken-for-granted-ness it goes on designing in my own designing. I now turn to my analysis of what I take for granted.

5.2. The Emergence of Tylerian Design

Tyler’s Rationale has been silently lurking in the shadows of my experience of study and teaching within institutions. It was not until my doctoral studies that I had a conscious awareness of, or name for, this taken-for-granted structure that structures, even though I often felt colonized by it and intuitively resisted its constraints. Paradoxically, in my own designing of curriculum in institutional contexts it proved difficult to see curriculum making differently, for this force appears natural to institutions.

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4 This section and subsection is adapted from Halvorson (2011).
Even in the context of my doctoral studies, it took me time to fully appreciate the significance of the designing force Tyler’s Rationale has had on curriculum design. My first instinct was simply to show Tyler’s Rationale my disinterest and disapproval, but given my interest in understanding curriculum as the institutional text its relevance to my study ultimately became inescapable. As I studied the history of curriculum design it became clear that Tyler’s Rationale was a conceptual hub everything seemed to link to. Moreover, I thought if there is any hope of us designing educational institutions in a different sort of way it is important to first understand how our present ones have come to be. In the analysis that follows I shall explore the emergence of Tyler’s Rationale.

Due to popular demand, in 1949, the University of Chicago Press published Ralph Tyler’s syllabus for his Education 360 course as a little book entitled Basic Principles of Curriculum and Instruction. The book is a concise state-of-the-art summary of mid-century modern curriculum design. Conception and explanation of the book’s logic are plain and straightforward, much like the Midwestern American who wrote it. While distinctly humble, the shadow of the book is far reaching, both as foundation and foil. That is, it’s at once “a fine example of common sense and clarity” (Marsh & Willis, 2007, p. 72) and a “dreadful little book” (Pinar, 2010, p. 302).

To see the book’s influence on curriculum-making one need only, as Werner and Aoki (1980) suggest, “go through the ‘Table of Contents’ of a random sample of program development texts on a library shelf” (p. 28). What is most notable about the book is its technological power to act as a curriculum design (that is, its continuing agency as a syllabus) that goes on designing curriculum worlds. As such, its reach is not limited to an object of curriculum study, but has given shape to the design of many local, institutional, and societal curriculums, which still go on designing. A recent observation of this phenomenon is noted by Pinar (2010): “Tyler’s Rationale, wherein objectives and evaluation are sequentially linked, set the stage for No Child Left Behind, the Bush-era legislation of the test-driven curriculum” (p. 299). For me, Tyler’s Rationale seems to characterize what the past has send to the present and future. It represents a rationalization of study that seems to permeate the system-world of curriculum as institutional text that I inhabit. For this reason I shall make it the centre of my analysis.
5.2.1. Summary of Tyler’s Basic Principles

This summary is a further contraction of what Tyler later acknowledged was a “summary and synthesis of what had been said earlier by other curriculum writers such as Franklin Bobbit, W. W. Charters, John Dewey, Boyd Bode, Harold Rugg, and Henry Harap” (Schubert, 1986, p. 172). Indeed, his summary-synthesis is the book’s primary significance as it promulgated these readymade ideas. So, while often summed up by the book’s four questions, I make a full summary to give a comprehensive view of its oft-replicated arrangement of ideas.

The introduction is short and contains four questions that provide the organizing framework of Tyler’s (1949/1969) “rationale for viewing, analyzing and interpreting the curriculum and instructional program of an educational institution” (p. 1):

1) What educational purposes should the school seek to attain?
2) What educational experiences can be provided that are likely to attain these purposes?
2) How can these educational experiences be effectively organized?
4) How can we determine whether these purposes are being attained (p. 1)?

The first chapter addresses a curriculum design’s educational purposes, and this matter unfolds for nearly half the book. Tyler’s contention is that while intuitive methods may be excellent in some cases, they are insufficient for studying an educational program “systematically and intelligently” (p. 3). That is, if programs are to be planned, and continually improved, criteria are required to select what is taught and how, and also to evaluate how best to improve the program plan.

While acknowledging such criteria may be a matter of preference (which as an aside would make it political), in a pragmatic act of statesmanship, Tyler avoids giving precedence to any one source of educational aims; rather, he advises that “no single source” is adequate for “wise and comprehensive decisions” about objectives (p. 5). Therefore, he suggests that these five sources be studied: 1) the learners, 2) contemporary life, 3) subject experts, 4) educational philosophy, and 5) psychology of learning.
1) The study of learners addresses methods used to identify and analyze the needs and interests of the learner in behavioral terms. Tyler suggests “education is a process of changing the behavior patterns of people” wherein “behavior” may be thought to include “thinking and feeling as well as overt action” (pp. 5-6).

2) The study of contemporary life is reducible to the logic of job analysis of the sort pioneered by Frederick Taylor (1911). Both the apprentice system and the liberal arts are abandoned, replaced by a general method used to determine objectives for programs that achieve similarity between life situations and learning situations.

3) The subject specialists section is somewhat conflicted in approach. On the one hand, Tyler acknowledges the importance of scholarship in forming objectives, and on the other hand, he subordinates the uniqueness of disciplinary knowledge to broad functions of inferred generalizations, such as, critical thinking and creative skill.

4) Educational philosophy is seen as a screen to reduce the myriad of possible objectives to an attainable few. In brief, Tyler suggests that an adequate educational and social philosophy will define “a good life and a good society” (p. 34). He illustrates his point using a generic democratic oriented philosophy; however, little is actually said regarding how this philosophy will arise, the implication being that it would emerge by consensus.

5) The second screen for objectives is educational psychology. It is said to help distinguish the change in behavior that can be expected and to determine which objectives are feasible to learn. A learning theory’s effect on objectives is explained, illustrated by extreme ends of the behavioral learning theory spectrum, including Thorndike’s highly specific theory and Judd and Freeman’s generalization theory.

The first chapter concludes with a lengthy discussion of how to state objectives in a form that helps align them with other elements of the program. In short, Tyler suggests the best form to express objectives is a behavior paired with “the content or area of life in which this behavior is to operate” (pp. 46-47).

The second chapter addresses linking objectives with learning experiences, stressing that learning is what the learner does in terms of an interaction between the learner and the structured situation of an environment setup by the teacher. Tyler suggests five principles of selection. First, an experience must allow the objective’s implied behavior to be practiced. Second, an experience must be satisfying for the learner as a result of practicing the objective’s implied behavior. Third, an experience must be within the student’s zone of behavioral potential. Fourth, many experiences can
be used to attain the same objectives. Fifth, the same experience will likely bring about multiple outcomes, including undesirable ones.

The third chapter covers the organization of program elements. Tyler’s premise is that no one learning experience is particularly influential; however, if many experiences are organized to reinforce one another they will produce a cumulative effect. To this end, he defines two key structural relationships: vertical and horizontal. The first refers to depth of experience, and the second to breadth of experience. Given this, the effective organization of learning experiences must meet three criteria: continuity, sequence, and integration. Continuity involves the recurring emphasis of curricular elements. Sequence refers to increasing breath and depth with each contiguous step. Integration entails increasing the learner’s overall unity of behaviour in relation to the elements involved. Within these structural relationships, major elements of the curriculum are to be identified and serve as the organizing threads. Moreover, these threads are to be woven together by additional organizing principles, which, generally speaking, should consider the psychological significance to the learner of the curriculum’s logical organization. Lastly, Tyler provides three overarching frames of reference for the organization of learning experiences, including programs at the largest level, courses at the intermediate level, and units at the lowest level.

The fourth chapter speaks to measuring and improving the effectiveness of learning experiences under the term evaluation. Evaluation is ever present in all program elements (that is, evaluations of what was desired), but here it is an integrated notion. Tyler’s stated purpose for evaluation is to simply check whether the plans that have been made for “learning experiences actually function to guide the teacher in producing the sort of outcomes desired” (p. 105). It is a check both of the “hypotheses” of the plan (that is, design decisions made by the planners) and the effectiveness of “instruments” that carried out the plan (that is, the teachers and associated conditions of implementation). Basic notions are introduced, such as types of learning evidence, procedures for evaluation, and suggested uses of results.
The closing chapter is short and gives advice on committee forming and deliberation framing for both small and larger institutions. Tyler also offers a final comment on sequence, encouraging a systematic, individualized approach.

5.3. The Co-texts and Con-text of Tyler’s Rationale

Before I turn to an analysis of Tyler’s book, which will form the core of my analytic moment, I shall identify the co-texts and con-text that have shaped it. Tyler’s text does not emerge independently of other works it interacts with co-texts—texts that are contiguous to it. Indeed, Tyler’s book and his Rationale is at its core a summary and synthesis of a collective set of ideas that emerged within the book’s historic and cultural con-text—the master planning years of modern curriculum design in America. His ideas begin with Dewey (1902) who in *The Child and the Curriculum* seemed to have generally retained the traditional definition of curriculum (Jackson, 1992). For Dewey (1902), curriculum was a “course of study ... present[ing] material stretching back indefinitely in time, and extending outward indefinitely into space (p. 5). What Dewey added to this earlier understanding was an expanded notion of curriculum as educational experience. He suggested we “abandon the notion of subject-matter as something fixed and ready-made in itself, outside the child’s experience” (p. 11). Instead of seeing the curricular experience as “something hard and fast” (p. 11), he seeks to expand our view of the curriculum, to “see it as something fluent, embryonic, vital” and to “realize that the child and the curriculum are simply two limits which define a single process” (p. 11). Here, there is a recognition that the system-world of curriculum emerges from the life-world.

The implication for curriculum design, writes Dewey (1915), is that “no book or map is a substitute for personal experience; they cannot take the place of the actual journey” (p. 255). Dewey’s statement echoes the well-known Chinese proverb by Xun Zi: “Tell me and I will forget. Show me and I may remember. Involve me and I will understand.” However, as Dewey (1915) goes on to clarify, “learning by doing does not, of course, mean the substitution of manual occupations or handwork for text-book studying” (p. 255). Book study is also an “experiential learning” activity. Studying here is to be understood as an experiential act. In his analysis, here, Dewey sets up for us an analogy about the curriculum as both a map and a journey. That is, his map image
describes *curriculum-as-a-plan* and his journey image describes *curriculum-as-a-lived-experience*. Dewey’s main point is to caution us against mistaking the map for the journey; however, he also recognized the crucial role the map plays in this journey.

Explaining the relation of the journey to the map Dewey (1902) writes:

Well, we may first tell what the map is not. The map is not a substitute for a personal experience. The map does not take the place of an actual journey. The logically formulated material of a science or branch of learning, of a study, is no substitute for the having of individual experiences. The mathematical formula for a falling body does not take the place of personal contact and immediate individual experience with the falling thing. But the map, a summary, an arranged and orderly view of previous experiences, serves as a guide to future experience; it gives direction; it facilitates control; it economizes effort, preventing useless wandering, and pointing out the paths which lead most quickly and most certainly to a desired result. Through the map every new traveler may get for his own journey the benefits of the results of others’ explorations without the waste of energy and loss of time involved in their wanderings—wanderings which he himself would be obliged to repeat were it not for just the assistance of the objective and generalized record of their performances. (p. 284)

Dewey (1902) goes on to describe how this curriculum map does not merely refer to a referent landscape of study, but is an active arrangement of that landscape.

That which we call a science or study puts the net product of past experience in the form which makes it most available for the future. It represents a capitalization which may at once be turned to interest. It economizes the workings of the mind in every way. Memory is less taxed because the facts are grouped together about some common principle, instead of being connected solely with the varying incidents of their original discovery. Observation is assisted; we know what to look for and where to look. It is the difference between looking for a needle in a haystack, and searching for a given paper in a well-arranged cabinet. Reasoning is directed, because there is a certain general path or line laid out along which ideas naturally march, instead of moving from one chance association to another. (p. 284)

An important form of curriculum map in the university is the course syllabus. What is a syllabus? The word’s 17th century origin referred to the “concise table of headings of a discourse” (OED). The modern sense of the word has shifted to mean an outline of a course of study. Understanding the word’s origin is helpful, because it recalls
the root nature of a course of study, which is ultimately a conversation. As Pinar et al. (1996) add, the nature of these curricular conversations has become “extraordinarily complicated” (p. 848). Consequently, as educators attempt to map out the conversation that is their course of study more explicitly and comprehensively the syllabus as a whole expands, parts are extracted into separate documents; it is transposed into highly structured online course formats in learning management systems, where digital resources and course activities are embedded, and students textually interact with it.

The syllabus and its host of associated documents is not an exhaustive view of the territory of study, but it does set the directive guidance for the educators’ and students’ journey through this terrain. In short, the syllabus serves as guide to one’s course experience. As a technical document it represents what Foucault (1972/2011) referred to as “grids of specification,” institutional structures for mapping knowledge and its study. These grids are “taxonomic” and “categorical” systems used to specify what the curriculum will be at a particular time and in a particular context. This ordering “grid” is the technical form of the curriculum that design brings forth.

Following Dewey’s (1902) logic, the journey of each student in a course of study should be encouraged to vary. Nevertheless, this can be difficult in practice, because there is often an institutional desire to shape the student experience. To this end, normative standards are established and promoted. However, they still can be implemented in different ways, according to different interpretations and result in a plethora of course experiences. The underlying reality is that, as Jackson (1992) argues, all conceptions of curriculum are “rhetorical structures” (p. 12), which “attempt to persuade us to conceive of curriculum in particular ways” (Pinar, et al., 1996, p. 28). An institution’s normative guidelines attempt to persuade educators to conceive of instructional and learning experiences in particular ways, with distinct foci on what is taught and how. However, these system-world steering media first always emerge from the life-world and their sustainment is by the life-world. Hence, the map does not necessarily determine the experience of the journey. It is important to note, here, that Dewey’s conception of curriculum suggests the existence of this dynamic relationship. In my own experience, first, as a student, and than, as an educator I discovered that the same normative institutional standards could often be interpreted in different ways giving
me, and my students, space for our own journeys of study to unfold. However, in the face of other’s rigid interpretation of these standards I also felt my study and teaching restricted. There is a deep contradiction, here, that design seeks to resolve, between the institutional efficiency of a set path of study, and this path’s fit with peoples’ journeys.

Building on Dewey’s (1902) formative ideas of curriculum design Bobbit (1918) in *The Curriculum* set out to solve this design contradiction by professionalizing curriculum design. In his preface Bobbit writes, “Since the opening of the twentieth century, the evolution of our social order had been proceeding with great and ever-accelerating rapidity” (p. iii). He goes on to list the great accomplishments of his day (such as, teachers are better, administrators are better, buildings are better). His concern was that while teaching and administrative methods are much improved, “to know what to do is as important as to know how to do it” (p. v). Central to his argument is the need for a scientific technique, or an applied science in understanding and making the curriculum.

Human life, however varied, Bobbitt (1918) argued, consists in the performance of specific activities discernable through inquiry. Education that prepares for life he thought is one that prepares definitely and adequately for these specific activities. However numerous and diverse they may be, they can be discovered. For Bobbitt, this only requires that one goes out into the world of affairs and discover the particulars of which these affairs consist. These will show the abilities, attitudes, habits, appreciations, and forms of knowledge that people need. These will be the objectives of the curriculum.

Bobbit (1918) proposed a scientific design process, beginning with an analysis of the specific activities people do in the world—that is, a needs analysis, or what contemporary instructional designers term a needs assessment. These needs represent gaps between the student’s current state and a desired future state. Curriculum, then, becomes a set of user experience designs transporting the user from his or her current state to the desired future one; thus, obtaining the objective. In Bobbit’s (1918) words curriculum is “*the series of things which children and youth must do and experience* by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be” (p. 42). Bobbit devised a two-part curriculum
design process: 1) defining the learning objectives by analytic survey of human affairs, and 2) devising appropriate, direct and indirect, learning experiences.

Werrett Wallace Charters, Harold Rugg and Henry Harap and others expanded Bobitt’s design process. Their collective work represents the formative emergence of the modern system-world of curriculum in America. To put this moment in context, Harap (1928) in *The Technique of Curriculum Making* writes, “the process of systematic curriculum making is still in its infancy—it is hardly ten years old” (p. 265).

Building on Bobbit’s work, along with other earlier curriculum writers, such as, Werrett Wallace Charters, John Dewey, Harold Rugg and Henry Harap, Tyler (1949/1969) devised a simple set of “rationale for viewing, analyzing and interpreting the curriculum and instructional program of an educational institution” (p. 1). Whereas Bobbit (1918, 1924) strove to address the problem of curriculum in a comprehensive way, Tyler took a more efficient and agile approach. Tyler (1949) claims that his book “is not a manual for curriculum construction since it does not describe and outline in detail the steps to be taken . . . to build a curriculum” (p. 1). That is, it is not a procedural understanding of design, but rather a way of thinking about “the problems of planning a program of instruction from the point of view of the students examining its purposes, functions and structure in order to get a rational picture of their interrelations” (p. 126).

I find it intriguing that this book “began as a syllabus for a course Tyler taught at the University of Chicago during the 1930s and the 1940s” (Jackson, 1992, p. 24). It is an interesting fact, because it means that it is a curriculum design, which designs. Its design as syllabus was also itself something that was brought forth by curriculum design. Moreover, as a syllabus it has instructional power—conceptually formalizing the curricular experiences of educational curricular professionals. Tyler’s pragmatic innovation was framing the problem of curriculum design in an efficient way (appealing to busy people coping with the complex design problem of making curriculum), and binding it to a method that is at once flexible and sufficiently comprehensive to generate appropriate design solutions. While his Rationale appears to be a linear process, he actually encouraged a non-linear approach to curriculum making. However, it was often interpreted in a linear way, which Taba (1962) took to a technical-logical extreme.
Taba (1962) was concerned with the eclectic nature of curriculum design theorizing, noting “there [was] little discussion of the methodology of designing curricula and less clarity about the elements that may constitute a design” (p. 3). She set out to unify curriculum design theory in concrete terms as a way of bringing control and order to the role that educators play as curriculum makers. For Taba, curriculum design was a comprehensive “organization” of curricular elements and the “organizational” requirements of implementing these elements. For Taba systematic curriculum making was a coherent and practical expression of the theory that informs a given curricular design. She asserted scientific theory as the definitive justification for the form to be given to curriculum design—an assertion that proved to be popular in an era that viewed science and technology as the future of educational progress. That is, the impact on education resulting from the American policy response to the Soviet Union’s launch of Sputnik 1 on October 4, 1957. Her view of design was subsumed by her premise that scientific theory was best suited to solving societal problems, curricular ones being a subset. Consequently, her design methodology took the shape of the scientism that informed it. In short, Taba transformed Tylerian design into pure technical rationalism.

Now I shall argue that it is simplistic to argue that Tylerian design is merely the application of a scientific understanding in the making of curriculum. I shall reveal in design terms that Tyler’s Rationale is, in fact, an artefact of design brought forth by Tyler’s act of designing, and that it is a design that goes on designing curriculum worlds.

5.4. The Theoretical Reasoning

In this analysis, I shall examine Tyler’s Basic Principles with the intention of revealing its rationale as a technological enframing of teaching and study, which “arrives by [curriculum] design, is applied by [curriculum] design and, in its form and use, [curriculum made to be] technology itself designs” (Fry, 1999, pp. 22-23). That said, the revealing must come, necessarily, near the end of this review since it stands in relation to two other modes of examination, which must arrive first. The overall structure of my

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5 This section is adapted from Halvorson (2011).
analysis of Tyler’s Rationale will utilize the three kinds of intellect—theoretical, practical and productive—that Aristotle sets out in *Nicomachean Ethics* (1139a27-28). First, the theoretical considers the framework of thinking (that is, the reason) that the book employs. Second, the practical addresses the essence of the book’s relation to practice. And finally, the productive reveals the world making technological power of the book’s rationale. Here, I raise the possibility of the negation of the future as a neglect of what is lost in what I characterize as the irresponsible technologization of teaching and study.

The first critical observation to be made of Tyler’s curriculum design syllabus as book is the theoretical reasoning it employs. To begin, Tyler’s Rationale stands on existing theoretical ground. The first significant theory underlying Tyler’s theorizing is Taylor’s (1911) principles of scientific management, which define a socially efficient model of work (and learning) according to four ‘new’ duties for (curriculum) managers:

1) They develop a science for each element of a man’s work, which replaces the old rule-of-thumb method.
2) They scientifically select and then train, teach, and develop the workman, whereas in the past he chose his own work and trained himself as best he could.
3) They heartily cooperate with the men so as to insure all of the work being done in accordance with the principles of the science which has been developed.
4) There is an almost equal division of the work and the responsibility between the management and the workmen. (pp. 36-37)

While Tyler’s efficiency stance is softer than Bobbit’s (1918, 1924), Taylor’s duties projected upon Tyler’s thinking have corresponding echoes. First, Tyler’s Rationale does systematize the teacher’s craft. Second, Tyler’s book is a syllabus, designed to scientifically train, teach and develop the curriculum makers. Third, Tyler’s Rationale does seek to insure that both planning and implementation are done in accordance with its principles. Fourth, Tyler’s Rationale represents a division of educational responsibility between the curriculum planners and implementers.

The second site of theoretical ground whereupon Tyler’s Rationale rests illustrates his ideas were not all that original, but a redaction of existing ones. In *The Seventieth Yearbook of the NSSE* Tyler (1971) reflects on “Curriculum Development in
the Twenties and Thirties.” In his essay, he quotes Rugg, noting the similarity between Tyler’s own design and Rugg’s earlier outline of curriculum making tasks:

1) The determination of fundamental objectives, the great purposes of the curriculum as a whole and of its several departments.

2) The selection of activities and other materials of instruction, choice of content, readings, exercises, excursions, topics for open-forum discussions, manual activities, health and recreation programs.

3) The discovery of the most effective organizations of materials and their experimental placement in the grades of public schools (quoted in Tyler, 1971, pp. 30-31).

Upon this ground Tyler’s Rationale stands. What then is the conceptual structure that Tyler built? In short, he further systematized Rugg’s method in Taylorian fashion, by better integrating the linkages between all the elements of curriculum planning into a cycle of continual plan improvement. Core to his integration of elements was his addition of a process he termed evaluation, where “one matches initial expectations, in the form of behavioral objectives, with outcomes” (Kliebard, 1992, p. 162). The prior chain of reason in curriculum planning would begin with objectives, which implied experiences, which implied subject matter, which implied subject matter outcomes, verified by standardized subject matter achievement tests. But, in practice, the reverse is more likely: tests imply (the real) outcomes, which imply (the real) subject matter, which imply (the real) experiences, which imply (the real) objectives. Tyler (1949/1969) observed, “students are influenced in their study by the kind of evaluation to be made and even teachers are influenced in their emphasis by the sort of evaluation which they expect to be made” (p. 124).

To Tyler, this bidirectional influence revealed an unfortunate breakdown in the rationality of curriculum planning. His solution was to integrate both multi-phase and all inclusive evaluation criteria throughout the whole curriculum planning cycle to continuously check conformity and correct for misalignments. His primary intent in making evaluation the integrating feature of his curriculum planning design was his “hope to have an increasingly more effective educational program rather than depending so much upon hit and miss judgment as a basis for curriculum development” (1949/1969, p. 123). In sum, Tyler’s primary theoretical contribution to curriculum is his integration of evaluation criteria—Tyler’s Rationale. That is, he added a fourth step to
Rugg’s model, and also deeply integrated what he thought about evaluation into every element of his model for curriculum making and study.

Tyler’s theoretical contribution, while commonsensical, is deeply problematic. A dichotomous split of ends from means is created, and a unidirectional relationship between ends and means is also established. Werner and Aoki (1980) clarify how Tyler’s model is problematic by reframing it as a set of program making beliefs:

1) Setting goals must precede the designing of means;
2) Goals can be clearly perceived from the beginning of the act of program development;
3) Goals once set are stable and tend not to change;
4) Goals guide the developing of means, but means do not guide the shaping of goals (p. 29).

The authors go on to state that it is reasonable when guided by such beliefs to make a further assumption that ends are more important than means. And by the same logic, it is also reasonable to assume that important people should be the ones who determine ends, whereas less important people should determine means.

To sum up, such Tylerian-based beliefs are an induction into error. First, it may be true that curriculum makers always bring initial intentions to curriculum making, however, when goals are clearly set before means the two are made to exist apart from each other. Hence, the goals then become external to the process itself. That is, the “setting” of goals as means vanishes; it implies there must be set goals that precede it. So, from the start it actually appears that bi-relationality between means and ends cannot be avoided. Second, a goal cannot possibly be perceived clearly from the beginning of curriculum making. For it to be clear, it must be an end that has already been achieved. Third, curricular goals are rarely stable. Even goals based on acceptable norms, such as those inferred through needs analyses, “tacitly assume a stable-state universe wherein the oughts are agreed to, categorized, and measured” (Doll, 1993, p. 54). Indeed, even deeply held acceptable norms change (Kuhn, 1962). Lastly, as Doll (1993) illustrates using Dewey and Whitehead, “in a frame that recognizes self-organization and transformation, goals, plans, and purposes arise not purely prior to but also from within action” (p. 170). So, if ends also form within action it is no longer
reasonable to assume ends are more important than means, or that they are only the domain of important people.

5.5. The Practical Essence

The second critical observation to be made of this book is its practical essence. In Jackson (1992) we learn that Tyler’s Rationale remained largely unchallenged for decades, then Schwab’s (1969) essay, *The Practical* arrived. Pinar et al. (1996) add that the era before Schwab’s critique was preoccupied with making, and thinking about making, curriculum. And after Schwab’s critique the field shifted toward a preoccupation with understanding. The resulting shift was a re-conceptualization of the field. Technical “how to” curriculum problems were reframed in terms of “why” they were problematic. Nevertheless, Schwab’s critique was not fully directed at Tyler, as in both cases, their theorizing emerged from sustained reflection on the work they had done as teachers and curriculum makers (Westbury, 2005).

Before arriving at Schwab’s critique, I shall first sketch out a few key moments of practice in Tyler’s career to illustrate their relation to the formation of his model of curriculum making. To Tyler, his book was first a living syllabus, emerging from local and concrete contexts of practice; faculty member, Ohio State University (OSU); evaluation director, Eight Year Study; and other formative teaching experiences (Finder, 2004).

The first moment to consider is the emergence of his evaluation concept from his first five years working at OSU beginning in 1929. Tyler recalls later in an interview (Nowakowshi, 2004) that numerous OSU faculty with required courses were experiencing high failure rates and they wanted help. Tyler, of course, was the one given this task. In the process of working with the faculty, Tyler came to the conclusion that their testing methods were not commensurate with what the faculty really wanted to test. That is, the achievement tests being used simply determined memorized items from textbooks. This insight led to further conversations with the faculty about what they really

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6 This section is adapted from Halvorson (2011).
hoped their students were learning and Tyler concluded that “a test should provide evidence of whether students were learning those things or not” (p. 96). In the context of this place, Tyler’s conception of evaluation emerges through a course of practical conversations and sustained reflection on his practice.

Later in the same interview (Nowakowshi, 2004), Tyler describes a second moment during the Eight-Year-Study between 1934-42, which expanded his preliminary evaluation rationale into the more complete Rationale we now know. According to Tyler, the 30 experimental schools involved in the study were helped both by his evaluation staff and the curriculum staff who were under the direction of Harold Alberty. At one point, the schools began to express concern that the curriculum staff was not being as helpful as Tyler’s evaluation staff. Apparently, Alberty investigated this complaint and concluded that his staff’s failure stemmed from the lack of a curriculum rationale, whereas the helpfulness of Tyler’s evaluation staff was generated by his efficient evaluation rationale. A problem solver at heart, Tyler stated that he sketched a draft curriculum rationale on a napkin, over lunch with Hilda Taba. This outline, then, was to serve as the design prototype the curriculum staff developed further and would later constitute the content for Tyler’s Rationale.

Both moments serve to illustrate that Tyler was first and foremost a practitioner. He was indeed a person, “once described as Mr. Fix-it” and whose “career was based upon helping others formulate solutions to complex situations” (Kridel & Bullough, 2007, p. 89). The second moment also reveals another element of Tyler’s practical essence – the eclectic. At first the schools’ complaint about the curriculum staff appeared to be a practical matter, but it was actually a theoretical one. The practical side of the problem was what the curriculum staff was trying to do, but the real underlying theoretical problem was how they thought about curriculum. Diverse and contradictory theoretical doctrines were in play, giving rise to conflicting curriculum making approaches. So, in a shrewd practical move Tyler side-stepped this whole theoretical mess by promoting an eclectic rationale that laid all sources for objectives side by side in such a way as to suggest consensus (Kliebard, 1992). This practical eclecticism put forth that 1) “no single source of information is adequate,” 2) “each of these sources has certain values to commend it,” and 3) “each source should be given some consideration in planning”
Tyler's diplomatic move proved to be a workable solution for the Eight-Year-Study that rose out of a situational need and remained the approach set out in his book, which “probably accounts in part for its wide popularity” (Kliebard, 1992, p. 154).

While Tyler’s approach to setting objectives is generally eclectic, he also provided a loosely structured rationale to define how the parts should work together. In effect, he categorically distinguished between brainstorming sources, where withholding criticism and welcoming diverse suggestions are the ground rules, and judgment sources, which act to select, combine, and improve the suggestions generated. So framed, this practical approach works because of its drafty logic, which provides the buffering spaces needed to allow different ways of thinking to collaborate.

Therefore, the best way to improve Tyler’s Rationale, it was thought, was to simply tighten up his eclectic logic. To Taba (1962), for instance, “there [was] little discussion of the methodology of designing curricula and less clarity about the elements that may constitute a design” (p. 3). Her project, then, was to unify curriculum theory in design terms as a way of bringing control and order to the role that educators play as curriculum makers. For Taba, as I wrote earlier, curriculum design was a comprehensive ‘organization’ of curricular elements and the ‘organizational’ requirements of implementing these elements through that application of scientific theory. Her notion of design process made the fundamental assumption that practice is an outflow of theory.

Taba’s transformation of Tyler’s Rationale is important, because her technical-logical evolution of his ideas exemplified the context in which Schwab’s (1969) The Practical: A Language for Curriculum arrived. In part, Schwab’s critique suggested a remembering of something important in Tyler’s method that was lost in its further use, interpretation, and revision. That is, aside from what is problematic about his theoretical reasoning, Tyler’s methodology still bore deep fingerprints of practice. In this way, it (somewhat) foreshadowed the central point of Schwab’s (1969) essay that “the bulk of curriculum energies” needed to be “diverted from the theoretic to the practical, to the quasi-practical and to the eclectic” (p. 1).
Schwab also made two other key points: 1) the need for new principles and methods, and 2) the inadequacy of theory in curriculum. Hence, Schwab was not suggesting a return to Tyler’s conception of the practical, but rather to “reanimate and redefine the craft tradition of curriculum work and make a case for its centrality to the advancement of education by bringing to it the full weight of research without changing its character as an art” (Westbury, 2005, p. 98). Schwab’s innovation, which Tyler had failed to grasp, was defining how the worlds of practice and theory interrelate. His solution drew on the distinction made between ‘the theoretical’ and ‘the practical’ by Aristotle. Schwab’s (1969) conceptual move brought to curriculum the deliberative tradition, which is “the discipline concerned with choice and action, in contrast with the theoretic, which is concerned with knowledge” (pp. 1-2).

The deliberative tradition affords two re-conceptions of how curriculum could be studied and made. First, it asserts that the theoretic and the practical are similar. That is, they are both forms of inquiry. This notion undergirds Pinar et al.’s (1996) claim that “in the contemporary field practice is theoretical” (p. 586). Second, it facilitates the selection of the appropriate form of inquiry for a given problem. In brief, theoretic inquiry is best applied to curriculum problems arising from states of mind and practical inquiry is best applied to curriculum problems arising from states of affair (Reid, 1999).

To sum up, Tyler was not discriminating regarding his modes of inquiry. Indeed, for all its commonsensical wisdom, a notable failure occurred in the way he set major competing sources for objectives side by side (a problem arising from a state of mind) and then suggested the list could be judged (by a practical form of inquiry) using two additional competitive sources of information (that is, philosophical and psychological, which present a further problem arising from a state of mind). The theoretical problem, as Kliebard (1992) noted is that “given the notion of educational objectives and the necessity of stating them explicitly and consistently with a philosophy, it makes all the difference in the world what one’s guiding philosophy is, since that consistency can be as much a sin as a virtue” (p. 161). Tyler’s practical move allowed a momentary ceasefire between warring camps of educational doctrine, but it did not dissolve the factions. In this, as Maslow famously said, “it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail” (Maslow, 1969, p. 15). To Tyler, then,
given his capable skills of practical inquiry, it seems that most every problem appeared to him as a practical state of affair.

5.6. The Productive World Making

The third critical observation to be made of this book is its world making power. I shall argue that its rationale and curriculum design are such that they lead inevitably to irresponsible world making. Whereas Schwab (1969) drew from Aristotle’s theory of knowledge to clearly set out the interrelations of the theoretical and the practical, I draw from the same well to suggest additional interrelations. Aristotle conceptualized knowledge as three kinds of intellect: the theoretical, the practical, and the productive. However, his triadic conception is often reframed by modern interpreters as a binary opposition of theory and practice, wherein there are only 1) the theoretical and 2) the practical and productive. However, in The Nicomachean Ethics Aristotle (2004) is clear that, “production is different than action” and that “the reasoned state that is capable of action is also different from that which is capable of production” (1140a2-5). As a consequence, there is reason to be sensitive to problems arising from states of art, which employ productive inquiry, in addition to states of mind, and states of affair, which employ theoretical and practical inquiry, respectively. Indeed, it is the productive frame of analysis, wherein Tyler’s Rationale is made a state of art, which reveals the technological irresponsibility of his curriculum design that, in turn, lead to irresponsible world making.

Broadly speaking, the productive may be understood as a “bringing forth” of the made. The Greek word Aristotle uses for productive knowledge is poietike (that is, poetic art), which is brought forth by poiēsis (the action of making). Central to the productive is the notion of art, or technē in the Greek, which Heidegger (1977/2008) argues belongs to poiēsis. The productive’s association with making art differentiates it from the theoretic’s association with contemplation of spectacle and the practical’s association with deliberative action. Nevertheless, production as spectacle, like practice as

7 This section is adapted from Halvorson (2011).
spectacle, is theoretical. Moreover, production as action also makes it practical. Thus, the productive may be described as the theoretical and practical activity of making artifactual worlds.

What the productive adds to the practical and the theoretical frames of analysis is a consideration of what Tyler has made, which is distinct from the practice wherein his making and thinking emerged, and also from what is thought about his thinking. What Tyler has made is a technological language of curriculum design. I argue that it is this technological character of Tyler’s world making as instrumentalism, which is the locus of his irresponsibility. Yet, while arguing that Tyler’s Rationale exhibits instrumentalism is a necessary critique it is no longer sufficient, because the critique itself narrows our conception of technology. Technology, as techné, also belongs to poïësis (that is, to the productive). Thus, I make this critique of Tyler’s technological irresponsibility using Feenberg’s (1999, 2002, 2010) critical theory of technology, which provides a broader understanding of technology as two intertwined aspects of instrumentalization.

Briefly explained, Feenberg characterizes the primary instrumentalization as reifying moments of decontextualization (such as, extracting the tree from the forest) and reductionism (such as, cutting the tree into lumber). The secondary instrumentalization integrates the resulting device (such as, the lumber) into new contexts by way of social choices (such as, dimensional standards, aesthetic values, moral consequences, and acceptable uses of the lumber). The two aspects of instrumentalization bi-directionally come together as a world, in a Heideggerian (1977/2008) sense. That is, a technological world of meaning and practices brought into being by the co-creating processes of decontextualization (de-worlding) and recontextualization (disclosure).

As can be seen by the above, Pinar (2009) makes a productive critique of Tyler’s Rationale when he argues “objectives are devices” that according to Tyler’s design are “disguising manipulation as professional practice, demoting curriculum and instruction to means to extra-education ends” (p. 42). Put in Feenberg’s (2010) terms, defining objectives as “devices” describes them technologically as a primary instrumentalization. And what the device means as a “disguising manipulation as professional practice” and
how it is socially integrated by “demoting curriculum and instruction” describes the secondary instrumentalization of Tyler’s technological device (Pinar, 2009, p. 42).

Tyler “initiates the process of world making” as a primary instrumentalization “by de-worlding its objects in order to reveal affordances” (Feenberg, 2010, p. 72). That is, the reality of study and teaching is decomposed into decontextualized curricular elements according to functional characteristics. Put differently, Tyler “tears [elements of lived curriculum] out of their original contexts and exposes them to analysis and manipulation while positioning the technical [curriculum] for distanced control” (Feenberg, 2010, p. 72). His de-worlding “strips” study and teaching “of their inherent potentialities and reduce[s] them to mere raw materials” (p. 147), which are “enframed” as learning and instructional technologies, respectively. Consequently, the life-world of study and teaching is reduced to technical learning/instructional objects (that is, behaviours, content, questions/answers, etc.) and incorporated into technical learning/instructional devices (that is, objectives, lessons, evaluation instruments, etc.).

The secondary aspect of Tyler’s instrumentalized world making is a reintegrating of simplified learning and instructional objects/devices into the life-worlds of study and teaching. This recontextualization “establishes the social meaning of the [learning/instructional] artifact” in two moments that Feenberg (2010) characterizes as “systematizations” and “mediations” (p. 73). Systematization refers to the socially established meaning of technical elements and their interrelations, defining a coherent technological organization (that is, a system) that achieves something. Valuative mediations refer to “the cultural horizon of the society” that shapes technical artifacts by governing ethical, aesthetic, and social norms (p. 73).

Distinctions made between primary and secondary instrumentalization, and the two moments of systematization and mediation are important, because they expose the technological irresponsibly of Tyler’s technological design. While the primary aspect of Tyler’s world making (his initial instrumentalization) is simply par for the technological course (that is, making and unmaking are co-joined) his irresponsibility lies (as a hermeneutic question) in what the secondary aspect of his world making does to the meaning of his technology. In short, by privileging systematization at the expense of
richer ethical and aesthetic mediations, Tyler makes the meaning of his design merely functional, where the very notion of “function strips [curricular] technology bare of values and social contexts, focusing [curricularists as] engineers and [teachers as] managers on just what they need to know to do their job” (Feenberg, 1999, p. 213).

Moreover, following Feenberg’s (1999) theorizing, Tyler’s curricular “technology emerges from this striptease as a pure instance of contrived causal interaction” (p. 213). For instance, his instructional devices are socially integrated by a functional systemization (of meaning) where “instruction suggests a desire to stick to the more systematic, classifiable, and measurable interactions and interventions that educators use to implement the curriculum” (Van Manen, 1991, p. 29). Likewise, Tyler’s systematization of “learning” as learning technology integrates it into the life-world of study as a functional “producing” of planned learning outcomes (p. 29). “What is damaging in this interpretation of reality” argues Aoki (1983/2005), “is the fact that emphasis on it effectively submerges the ideology of sociocultural values, leaving in its wake the ‘neutral’ standards of purposive rational action and instrumental reason” (p. 114), which I argue reduces the technological meaning of Tyler’s technology to curricular device and the curricular device to its technical codes of operation. As such, the social meanings that instructional and learning technologies take on in curricular life-worlds reflect narrow concerns, such as, efficiency, effectiveness, and control, which, then, iteratively feed back into each stage of technical design.

Again, the two aspects of instrumentalization come together as a world. The primary world making process is a technical simplification of study/teaching objects combined into learning/instructional devices, and the secondary aspect integrates these simple learning/instructional objects/devices into the social life-world of the lived-curriculum. Simply put, curricular “‘worlds’ were created by the [learning/instructional] tool’s turning of ‘the world’ into a standing reserve for making and then learning from the feedback from the tool” (Fry, 1999, p. 25). In the process of reducing the course of human life into learning/instructional technologies, the technical action turns back on itself and its technical subjects. Here, there is an ontological dynamic: “technologies serve needs while also contributing to the emergence of the very needs they serve; human beings make technologies, which in turn shape what it means to be human”
(Feenberg, 2010, p. 146). Put concisely, “we design our world, while our world designs us” (Fry, 1999, p. 6).

In the world making process something is always lost—making curricular worlds is co-joined with unmaking them. What is lost? Perhaps, the most notable loss is the loss of technological histories. Mid-century modern curricular devices, such as, learning objectives, learning environments, and evaluation instruments, evolved technically by Tyler’s design through short life-world feedback loops. Tyler’s Rationale, as systematization, was most meaningful to the life-world contexts where his designs emerged. There, in close relation to his users, the designer’s designs were well suited to their local niches (that is, in his work with OSU faculty and also in the Eight Year Study’s experimental schools). While his designs certainly served some better than others, within these local contexts side effects and user protests could be more easily enfolded into the technological evolution of his designs. In short, his designs served their niches well. That is, they proved to be, both technically and socially, a close fit. However, what remains problematic is that in perfecting his designs he expunges them from their histories and the contingencies of choice that brought them into being in the first place. Thus, their meaning was reduced to causal relations, which made Tyler’s technologies appear to be universal and also universally transferable to different, distant, and ultimately disconnected contexts. The resultant maelstrom of such direction is that they are no longer recognized as technologies but regarded as natural to curriculum discourse.

Tyler has not made the myriad of curricular devices and systems, as we experience them in our local, institutional and societal education networks today, but he did make the technological language of curriculum design, which brought them forth. His technological language became our institution’s language of curriculum design, and we (although not all) go on designing his curricular designs, as an arrested development. Schwab was hopeful that the practical, as a new language for curriculum, would help us break free of this arrested institutional development. That is, “theory and practice in dialectical relationship” rather than “theory and practice in linear relationship” could make institutional curriculum making a deliberative process (Aoki, 2005, p. 133). Certainly, it was an important innovation, however, it failed to take account of the fact that our action
operates in the context of a system, where our action becomes an object of that system. The productive, which tends to become background (like wallpaper, or even the walls), must also be in dialogical relationship with the practical (and the theoretical). For the productive is not merely the artifact of action, but actively speaks into our action.

The technological curriculum has become an environment, organizing our educational way of life, and shaping our actions (and our theorizing). This is nothing new. What is new to our modern era, and most problematic about this phenomenon, is that the designing of this Tylerian environment has become ever further removed from the feedback of its inhabitants. As control of Tylerian designing was transferred away from Tyler’s niche, the lessons of its technological histories were lost, which allowed a half-century of continued development to ‘progress’ without regard for distant consequences. In addition to this ‘progressive’ blind spot, the massive scalability of Tylerian technologies has allowed for “the insidious centralization of ever-more-powerful” institutional curriculums, imposing “authoritarian social order” (Feenberg, 2010, p. 79). This is because, in the shift of Tyler’s technologies away from their original niche into the heart of institutional curriculum discourse, those technologies have become dangerously concealed and unrecognized.

5.7. The Productive as Productivism

Tyler designed his Rationale in the context of a designed world, which arrived by design and that designed both his craft and little book. The curriculum world into which Tyler arrived was preconfigured. His moment of designing was not a blank slate, but was colonized by what the past had sent to it (Fry, 1999). His notion of curriculum was brought into being by a rupture in the 16th century of the term vitae curriculum. The singular term curriculum emerged from Calvinist ideas about social discipline. With this rupture the older sense of learning as a life course, or path, gave way to a new compound-order, which “conveyed a sense of ‘order as structure’ (cf. the social order) as well as a sense of ‘order as sequence’ (cf. the order of events)” (Hamilton, 1987, p. 5). Here, curriculum formed a new understanding of study; a course of study was no longer merely to be followed, but also to be completed.
Numerous iterations followed this rupture. For instance, a secondary refinement was made by Peter Ramus' (1515-1573) whose rhetorical work “reshap[ed] the term ‘methodus’ to mean a sequence of steps whereby some desired outcome could be achieved” (Hamilton, 1987, p. 3). Later, Jan Amos Comenius’ (1592-1670) strengthened Ramus’s concept of curricular method with scientific “notions like ‘system’ and ‘organization’,” (p. 5). Moreover, the 17th Century Cartesian visualizing of spatial order, as a mental form of designation-by-drawing, is another conceptual design act that Tyler directly employs in his rationale as “the vertical and the horizontal” (Tyler, 1949/1969, p. 84) relationships he used to define the organization of learning experiences.

The productive we see in Tyler’s Rationale is of a particular sort. That is, it stands upon the ground of the structure that has made the modern world, what Fry (1999) calls productivism. Fry describes this Western metaphysics as a projection of mind upon the world as an instrumental understanding of function and consequence. Productivism first emerges in the West as a “way of knowing a world by lowering the idea of structure upon it (number, grid, pattern, causal chain and so on)” (p. 95). The idea of structure is a theoretic articulation of productive order. We called this way of seeing reason, which is a constructed view of “the world as a structure of many structures” (p. 99). This idea of structure is created, not discovered. That is, through the productive we have brought forth reason, as a way of knowing the world as structure. In the same way, reason brought forth science as a way to expose structure. The implication, here, is that productivism “projectively … construct[s] the ‘nature’ of whatever [is] discovered” (Fry, 2009, p. 97). Productivism as a way of knowing is a “designing of how the world appeared” (p. 97). Reason and science are designed structures that “[do] not translate the observed into knowledge, but rather knowledge is mobilized, by interpretation, to projectively form the observed, out of which arrives what is known” (p. 97).

While productivism was initially brought forth by the productive as a way of knowing, this new way of knowing later shifted into a new way of making. Thus, reason and science were “employed (via an economy) as a standing reserve (an inventory) to build other worlds and other futures (design)” (Fry, 2009, p. 97). The consequence of this shift in how we make things was the emergence of “a great deal of knowledge . . . on creation and making, while very little knowledge was acquired on concomitant
destruction and unmaking” (p. 97). Productivism is structure that was invented to understand the world, and in its image we have created our present world. Once established its powerful pull on our perceptions and cognitions makes it nearly impossible to see worlds, and to create worlds otherwise. The power of Tyler’s Rationale, as structure, brought forth by reason, exposed by science, employed economically as an inventory to design, lies in its own structure. That is, it is a structural projection of mind on the world as curriculum (a techné-logos of learning), which has made, and continues to make curriculum worlds.

According to Doll (1993) the ideas of structure that brought forth Descartes’ method of right reason and Newton’s principles of Natural order carryover “into twentieth-century American curriculum thought and practice from Franklin Bobbit through Ralph Tyler” (p. 15). That is, by “advocating clear definitions, a reductionist methodology, and careful evaluation … Descartes … provid[es] a skeletal foundation for the curricular methodology” widely used in modern schooling. Doll’s critical insight is that, “overall, Tyler’s four foci” of curriculum design—“1) chosen purposes, 2) provided experiences, 3) effective organization, 4) evaluation”—“are but a variation on Descartes’ general method for ‘rightly conducting reason and seeking truth in the sciences’” (p. 31).

Moreover, Doll also suggests that deeply embedded in Tyler’s Rationale is the Cartesian structure of the “categorical separation between the external and the personal,” a pattern of thought “carried over into curriculum’s separation of teacher from student, knower from known, and self from other” (p. 31). Similarly, Tyler’s Rationale is inscribed with the structure of Descartes’ view that knowledge objectively resided “within the great [—“immutable, unchangeable”—] Laws of Nature,” “outside” a person’s subjective “feelings, intuitions, experiences” (p. 32). The implication for my analysis is that while I have argued that Tyler’s curriculum designing emerged from his practice within a particular context, as a structural device that goes on designing it exists within a product milieu, characterized by productivism.

To recap, design first emerges from the life-world as a designation-by-making. As the productive brings forth layer upon layer of abstraction, designation is increasingly separated from production, distancing the life-world of design from the system-worlds it
brings forth to serve the life-world. Designation, then, becomes a way of knowing the world, which as a way of knowing subsequently becomes a way of making. This making of reason and science, which is applied as design, becomes a theoretical productivism making the practical a strategic action and the productive an instrumental one. Thus, design becomes a goal oriented action, which “is the practical result of instrumental reasoning, the calculation of the best means to a given end” (Finlayson, 2005, p. 48). Design as instrumental reasoning is useful in its capacity to coordinate various actions at scale and over time, but this productivism is problematic to the life-world’s concerns.

The problem with productivism, both as knowing and making, lies in the relation of the life-world to systems, or the “products” milieu of life-world designing. By products, I mean “the human-made material and immaterial objects, activities, and services, and complex systems or environments that constitute the domain of the artificial” (Margolin, 1995, p. 122). These products act, or define the parameters of action in the life-world.

The product milieu is not a neutral layer that mediates between prior motivation and subsequent action. It is an interactive presence in the life-world. We are always in the midst of it as we experience it as something lively, flexible, and even aggressive. While it offers possibilities for action, it also inhibits action both through the more permanent components of the built environment and through immaterial things such as legal codes and service delivery systems. Such products are not inflexible, however, and often invoke oppositional action to alter or remove them. (p. 122)

This product milieu, or system-world that is brought forth by designing, is the result of human decision, which can always be questioned. As Margolin (1995) illustrates, “just as children come to the realization that the printed words on a page are there by choice rather than necessity, so can we come to realize that we design and make the product milieu ourselves” (pp. 122-123). The impact, here, is that the system-world emerges from the life-world, which is served by the system-world, and which in turn is actually sustained by the life-world—it is an emergent symbiotic relationship.

Whereas making and designing in pre-modern times was highly integrated, the work of crafts people iteratively building and evolving their products in response to their particular life-world environment, the modern world was built by professionals. The formation of professionalism was itself a design act, involving a systematization of
specialized knowledge and skill. Subject matter and associated practices were demarcated and then institutionalized through a progressive rationalized of the life-world of designing. The rationalization of modern professions was defined by the model of Technical Rationality, wherein, “professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique” (Schön, 1983, p. 21). In a similar fashion, I experienced my own playful designation-by-making as a child progressively give way to increasing professionalization of my designing throughout the course of my formal schooling. And in the context of my making of martial arts curriculum my designing became ever more technical rational over time.

Broadly speaking, the rationalization of the life-world of design resulted in a new form of professional knowledge, “grounded in a systematic, fundamental knowledge, of which scientific knowledge is the prototype” (Schön, 1983, p. 23). This modern professional knowledge became a generalized design system-world thought to have four essential properties: “It is specialized, firmly bounded, scientific and standardized” (Schön, 1983, p. 23). Design, thus, became the application of science, where as an “applied science [it] yields diagnostic and problem-solving techniques which are applied in turn to the actual delivery of services” (Schön, 1983, p. 24). Design knowledge, framed as an applied science, was made “a hierarchy in which 'general principles' occupy the highest level and 'concrete problem solving' the lowest” (Schön, 1983, p. 24).

What makes design generally, and curriculum design specifically, conceived as an applied science problematic is that “design is prior to, within and independent of, both the sciences and humanities” (Fry, 1999, p. 4). While certain similarities do exist the primary difference is time. Jones (1992) contends that “both artists and scientists operate on the physical world as it exists in the present (whether it is real or symbolic), while mathematicians operate on abstract relationships that are independent of historical time” (p. 10). What makes design unique among other intellectual activities is that designers must “treat as real that which exists only in an imagined future and have to specify ways in which the foreseen thing can be made to exist” (Jones, 1992, pp. 10-11).

Disciplinary differences also exist in terms of intellectual aims. Jones (1992) suggests that science seeks to describe and explain the world that exists, mathematics
seeks to logically solve a problem as stated, and art seeks to manipulate a medium as the recorder of action. Moreover, there is also a difference of attitude. The scientist suspends belief and doubt, the mathematician has one of concern for absolutes and elegance, and for the artist momentary certainty and unbridled imagination are the suggested core values. For Jones (1992), these intellectual characteristics come together in design as a set of unique hybridizations. Thus, design recognizes its interdisciplinarity, and in this middle ground is something entirely unique. For instance, the scientific approach is useful to the designer to the extent that existing situations need precise understanding, but is of little use to devising the future itself. Likewise, the artistic approach is useful as a way of prototyping future possibilities, but is of little use to resolving often-complicated contradictions. Lastly, the mathematical approach is only helpful to the degree that design problems are well-defined and stable.

Regarding the nature of design problems a useful comparison may be made with mathematics. Design is similar to mathematics in that they are both concerned with problem solving. However, there is a fundamental difference in the nature of design and math problems. Mathematics seeks to solve a problem logically as stated. Moreover, math problems involve “abstract relationships that are independent of historical time” and physical context (Jones, 1992, p. 10). Thus, while design and mathematics are both forms of problem solving, the mathematical approach is only helpful to the degree that design problems are well defined and stable. Yet, true design problems are inherently unstable, indeed, they are often wicked (Rittel & Webber, 1984). That is, problems in mathematics are essentially puzzles with boundary conditions and internal parameters that are “definable, understandable and consensual” (p. 156). By contrast, design problems are ill-defined, ambiguous, circular, stubborn and even aggressive. What this means is that each design problem is unique, is often the result of other problems, has consequences that are difficult to imagine, has no criteria for knowing when it has been solved, has numerous intervention points, is resistant to change, and has solutions that are good or bad. Metaphorically, the ill-defined and wicked nature of design problems may be described “as if, during the middle of a game of chess, one could choose to switch, or be obliged to switch, to a game of snakes and ladders” (Jones, 1992, p. 10).
Nigel Cross (2006) builds on Jones's (1992) conception of design as a distinct way of knowing. His criticism of the early design theorizing that emerged in the final decades of the twentieth century, such as those influenced by Simon's (1996) conception of design, was that design inquiry was too often subsumed under either the sciences, or the arts. Consequently, Cross (2006) set out a research program to articulate the particular nature of activity, behaviour and cognition in design. That is, his project was to theorize and empirically study “designerly ways of knowing” (p. 11).

For Cross, design as a way of knowing, may be conceived for the purpose of our understanding as something that stands in relation to, but is distinct from the sciences and the arts. While the sciences and the arts are certainly important ways of knowing, Cross contends that they both lack an important way of knowing that is neither the realm of the sciences, or the arts (in the broad sense of the humanities). As a beginning point he cites, A.N. Whitehead’s (in Cross, 2006) proposition that,

There are three main roads along which we can proceed with good hope of advancing towards the best balance of intellect and character: these are the way of literary culture, the way of scientific culture, the way of technical culture. No one of these methods can be exclusively followed without grave loss of intellectual activity and of character. (p. 18)

Building on this simple, but nevertheless insightful three “cultures” framework Jones set-out a way of thinking about design that differentiates it from more familiar ways of knowing in the sciences and the arts (humanities).

Cross (2006) posits that these intellectual "cultures" may be differentiated in three ways: (1) the phenomenon of study, (2) the appropriate methods of inquiry, and (3) the values of the culture (p. 17). First, regarding the phenomenon of study, design’s concern is the “artificial world”, as opposed to the “natural world” for the sciences, or “human experience” for the humanities.

Second, as a method of inquiry, Cross (2006) argues that design is a constructive “modeling” language that seeks to solve problems through a pattern-forming synthesis. Science, in contrast is said to employ the language of numeracy via controlled experimentation to classify and analyze the nature of what exists. And in the humanities, the method of choice is the language of literacy used via analogy and metaphor to
evaluate human experience. Designers set out to devise solutions to a problem, scientists set out to study a problem in order to discover its rules, and humanists (those who study humanities) set out to critically evaluate the condition of human experience.

Third, each intellectual culture is grounded in a set of “belief systems and values” (Cross, 2006, p. 17). In this regard, the technical culture of design holds a deep concern for the appropriateness of the relationship between a form and its function of unity, or significance, or both. More generally, designers also tend to value characteristics, such as practicality, ingenuity, and empathy (Cross, 2006). The scientific culture is concerned with knowing the “truth” and it frames this pursuit in terms of “objectivity, rationality, neutrality” (p.18). Lastly, the literacy culture of the humanities may be best characterized by values of “subjectivity, imagination, commitment, and a concern for ‘justice’” (p. 18).

The development of productivism as a Technical Rational approach to design theorizing reached an inflection point in the 1950s, where in the USA it was largely a response to the launch of ‘Sputnik’ by the Soviet Union (Cross, 2007). Symbolically and practically this scientific theorizing came together with the founding of the Design Research Society founded in the UK in 1966, the origin of which lay in the first ‘Conference on Design Methods’ in 1962 (Cross, 2007). It was the first conference to bring together scholars from a great diversity of design backgrounds with an common interest in the “systematic and intuitive” intersection of design as an interdisciplinary discourse (Jones, 2004). It was the first moment isolated scholars concerned with the interconnected, cross-disciplinary, and complex nature of a phenomenon that might be described as design came together into a community of inquiry—the birth of the field of Design. It was also the convergence of histories deeply influenced by the novel application of scientific methods and other alternative traditions of design thought.

On the heels of Design’s conceptual coalescence cast in a Technical Rational image, many of its early pioneers such as Alexander (1964) and Jones (1992, 2004) rejected this initial theoretical approach (Cross, 2007). Jones describes his reaction against design theorizing in the 1970s, as a dislike of “the machine language, the behaviorism, the continual attempt to fix the whole of life into a logical framework” (Jones in Cross, 2007). However, the field later shifted in response to Rittel’s 1973 proposal that
the design theorizing of the 1960s represented merely first generation conceptions and that second generation developments were beginning to emerge (Cross, 2007). Briefly summarized, the re-conception of design developed as a sequence of chronological shifts in theorizing that today represent six overlapping themes of concern (Love, 2002):

1) The management of the design process
2) The structure of design problems
3) The nature of design activities
4) Reflection on the fundamental concepts of design
5) Knowledge about the environment in which designing takes place
6) The knowledge needed for designing (pp. 296-297)

A critical observation that may be drawn from these thematic shifts in design theorizing is the general movement away from a technical rational concern that has characterized design as productivism and towards an increasingly rigorous and human oriented culture of designing as reflective practice, exemplified by Schön (1983).

Design’s move away from productivism and its model of Technical Rationality since the 1970’s has begun to reconnect its theorizing to its source in the life-world. It has become a designation-by-dialogue, which claims the artificial world as its phenomenon of study, articulates a discursive method connecting constructive thinking to human interest via an iterative modelling language, and espouses a culture that values a concern for appropriate practicality and empathy for human flourishing.

To sum up, the productive, as a technological revealing, adds a deeper examination of Tyler’s Rationale, which exists and acts as a technological device, a syllabus that instructs us in a technological design language of learning and instruction, socially integrated in our life-worlds by way of a systematization we have come to call Tyler’s Rationale. The overemphasis on the primary aspect of instrumentalization and social systematization gives Tyler’s technologies an instrumental character. “What is objectionable,” as a technological irresponsibility of curriculum design, “is the fact that viewing the teacher [and student] instrumentally effectively strips him/her of the humanness of his/her being, reducing him/her to a being-as-thing, a technical being devoid of his/her own subjectivity” (Aoki, 1983/2005, p. 115). As a result of this emphasis
on means, the productive became productivism. Consequently, what has been lost by Tyler’s world making is “a responsible responding” to the co-creative subjectivity of both student’s study and teacher’s teaching (Aoki, 1993/2005, p. 213). Yet, technologies, such as Tyler’s syllabus, do not determine their own interpretation, we may interpreted them otherwise, and, taken as feedback, they may be remade. What is Curriculum Theory? by Pinar (2004), which is also a book that exists and acts as a syllabus, demonstrates that “other thinking, [makes] other worlds” (Fry, 1999, p. 95).8

5.8. My Making of Curricular Worlds

In my making of programs, courses, educational media, and learning experiences, I made curriculum worlds, and they made me. I experienced the indwelling between two worlds that Aoki (1986/2005) describes. I was the architect of the system-world(s) against which the life-world stood. As a naïve curriculum architect, only later did I see the consequences of my initial designing, as a designing that goes on designing. My lived curriculum making and implementing experience is akin to that of an urban planner given the rare opportunity to set a city’s initial master plan, then, continue designing and living within the establishment of his or her own design. Once set, the master structure (like a city’s grid) becomes the context for all other designing. In my case, I would frequently imagined redesigns, but they became ever more problematic. The danger that I encountered was that “creation is ever co-joined with destruction” (Fry, 1999, p. 52). That is, in all making, some ground must be cleared.

The ground Tyler irresponsibly cleared with his technologies, which like a weaver’s warp goes on designing our designing, are the sites of teaching and study. The establishment of his design has transformed teaching into instructional technology and reshaped study into learning technology. What is most significant about his clearing of this ground is not that it is a phenomenon in design (it generally is), but that it continually escapes consideration by designers. That is, while it has been recognized by some, notably Pinar (2004, 2006, 2009) and Doll (1993, 2008), our continued failure in

8 This paragraph is adapted from Halvorson (2011).
curriculum design (as a technological bringing forth of worlds), which we have inherited from the promulgation of the design patterns in Tyler’s little book, lies in not “tak[ing] account of and responsibility for, what is destroyed” (Fry, 1999, p. 52). This failure is a consequence of the illusion that Tylerian learning and instructional technologies constitute universal instruments, a failure which negates educational futures because it neglects, if not dismisses, the co-creative subjectivity of students and teachers.
Chapter 6.

The Synthetical Moment

This is my synthetical moment, the totalization of the fragments of my educational experience. This moment is a re-conceptualization of what it means for me to design curriculum. It is my integrated understanding of my experience and study of design that I place into “the larger political and cultural web” and acts to “explain the dialectical relation between the two” (Pinar, 1975a, p. 424). As synthesis, this moment employs a particular form of thinking, one closely associated with design. Analytical and evaluative types of thinking draw upon deductive and inductive forms of reasoning. Synthesis most closely relates to what C. S. Pierce calls “abductive” reasoning. Pierce (1992) writes, “Deduction proves that something must be, Induction shows that something actually is operative, Abduction merely suggests that something may be” (p. 216). As a thinking process, abduction forms an explanatory hypothesis. Indeed, Pierce argues, “It is the only logical operation which introduces any new idea; for induction does nothing but determine a value and deduction merely evolves the necessary consequences of a pure hypothesis” (p. 216). Moreover, Pierce also adds,

Its only justification is that from its suggestion deduction can draw a prediction which can be tested by induction and that, if we are ever to learn anything or understand phenomena at all, it must be by abduction that this is to be brought about (p. 216).

I’m reminded, here, of Fry’s (1999) claims that “design is prior to, within and independent of, . . . the sciences (p. 4). Indeed, as Pierce (1992) observes, “every single item of scientific theory which stands established today has been due to abduction (p. 217). Pierce’s claim is that synthesis as a design insight is “not strong enough to be oftener right than wrong, but strong enough not to be overwhelmingly more often wrong than right” (p. 217). The significance of Pierce’s insight, here, is that as an act of design this synthetical moment of currere is not my claim to have a right explanation of the
phenomenon of curriculum design, but as a productive explanation brought forth by
design it is “oftener right than wrong” (p. 217). Clearly, I am not making a scientific claim.
However, as a productive artifact of my designing act of study, I assert that this
synthetical moment will be “strong enough not to be overwhelmingly more often wrong
than right” (p. 217), insofar as it is my conceptual experience of design as a designer.

6.1. Directionality of Design

The historical problem with curriculum as design is the narrowness of its
theorizing, either in the name of science, the practical, or as a foil used by richer
interpretive and critical literary discourses. Ideas about curricular design and designing
in the West extend back to Aristotelian and even earlier notions, but in the modern era it
has been dominated by industrial and scientific worldviews. Bobbitt (1918) was one of
the first to frame curriculum design in applied science terms, although his ideas were
grounded in the scientific enthusiasm of Spencer (1896) and Herbart (1893). A product
of the industrial age, Bobbitt (1924) described the educator as an engineer who designs
educational routes like the engineer who plans the construction of a railway. This initial
conception evolved into Tyler’s (1949/1969) notorious Rationale, which became the
predominate form of curriculum design thinking in the West. Taba (1962) refined Tyler’s
Rationale into a technical-rational applied science, a tradition of design carried forward
into the contemporary era by the likes of Wiggins and McTighe (2005), whose work is
widely used in everyday practice. The conceptual distinction between theory and
practice extends back to ancient Greek thinking, notably the work of Aristotle. However,
Aristotle’s conceptualization is more nuanced, wherein we find a tri-part distinction: the
theoretical, the practical, and the productive, which I discussed in my analytical moment.
In Aristotle we found that what has been lost in the technical-rational model of design—
where “scientific” theory is applied to practice—is making.

Design has always been present within curriculum, but our understanding has
become distorted. By reconnecting to the three kinds of intellect Aristotle (2004) sets out
in *Nicomachean Ethics* (1139a27-28)—knowing, doing, and making—design may be
understood in theoretical, practical and productive terms. The theoretical considers the
thinking (that is, the reason) that design employs. The practical addresses the essence
of design’s relation to practice. And the productive reveals the world making technological power of design. Making a distinction between the productive and the practical is important, because it reveals the negation of the future as a neglect of what is lost—that is, the consequence of the irresponsible technologization of teaching and study that is epitomized by Tyler’s curriculum design Rationale.

The productive we see in Tyler’s Rationale is of a particular sort. That is, it stands upon the ground of the structure that has made the modern world—productivism. Fry (2009) describes this Western metaphysics as a projection of mind upon the world as an instrumental understanding of function and consequence. It is structure that was invented to understand the world, and in its image we have created our present world. Once established, argues Fry, its powerful pull on our perceptions and cognitions made it nearly impossible to see worlds, and to create worlds otherwise. The power of Tyler’s Rationale, as structure, lies in its authoritative projection of mind on the world as curriculum making structure (a techné-logos of study), which has made, and continues to make curriculum worlds.

What makes contemporary curriculum design problematic is that it is still commonly assumed to be purely instrumental, a vestige of the Tylerian technical-rational view of design. However, designing is directional—it has a spatial and temporal direction. And, it was an undue emphasis on spatiality to the neglect of temporality that spawned the tendency toward instrumentality. That is, design became a technical means to a prescribed end. I have argued that we should not frame design solely around ends. Design does not merely seek ends; it creates them in an evolutionary way. One does not simply decide upon ends and then design them. One can only design toward ends. In this way, designing is iteratively teleological. That is, in the process of designing, ends become defined by a sequence of choices. And while this sequence of choices may be rationalized and in retrospect understood in linear terms, it is only ever an historical account and not a future trajectory. Designing is indeterminate and the directional possibilities are almost unlimited. It was a particular and narrow understanding of the productive as productivism that circumscribed the methodologies of designing. Boundaries that made designing an instrument of dislocated ends. In short, our understanding of ends is always bound to their making. Ends are not reached, as if they
existed a priori. Rather, they emerge from the sedimented history of their making. To explain, I turn, now, to consider the history of our Western neglect of temporality.

6.2. Neglect of Temporality

What has brought forth our neglect of temporality in curriculum design? In a word, modernity. The notion of modern and its various forms is a rather slippery concept, but may be generally understood as a move from traditional outlooks, practices and institutions to modern ones. What modernity has brought forth into our life-world and the systems that support it are an “unprecedented amalgam or new practices and institutional forms (science, technology, industrial production, urbanization), of new ways of living (individualism, secularization, instrumental rationality); and of new forms of malaise (alienation, meaninglessness, a sense of impending social dissolution)” (C. Taylor, 2002, p. 91). Nevertheless, modernity is not a singularity. Like an estuary where the fresh and salt water meet and mix, our present social-cultural situation is a fluid one. What complicates matters is the reality that the modern age (the past two centuries, or slightly more) has been both shaped by, and resistant to, the metanarratives (that is, universal structures that structure universally) that have set out to prescribe its form. Indeed, as various postmodern critiques make clear, the modern dream and our actual reality, even in the West, have been largely at odds with each other. Consequently, it is not easy to distinguish between our life as it is and how we imagined it to be.

To begin with, the term “modern” has its own history, used time and again in order to view a present epoch as the result of a transition from old to new. According to Habermas (1993) it was used first in the 5th century (in its Latin form modernus) to distinguish an officially Christian life-world from its prior pagan Roman past; people also “considered themselves modern during the period of Charles the Great, in the 12th century; as well as in France in the late 17th century, at the time of the famous ‘Querelle des Anciens et des Modernes” (p. 92). Elsewhere Habermas (1987) notes “Hegel used the concept of modernity first of all in historical contexts, as an epochal concept: The ‘new age’ is the ‘modern age’” (p. 5). With a unique move in his Lectures on the Philosophy of History, Hegel (1861) then shifted this new beginning into the past, establishing in the 18th century the conceptual start of the modern age around 1500.
According to Habermas (1987) this move served to transfigure the common Medieval Christian image of a “new world” set to begin at the end of days into a secular conception of the “new age” as a present one where “the future has already begun” (p. 5). It is revealing that Hegel’s\(^9\) use of the term “history” in a collective singular sense (which was another conceptual invention of the 18th century) served to express a historical-philosophical consciousness, wherein “one’s own standpoint was to be brought to reflective awareness within the horizon of history as a whole” (p. 6). The result was an “image of history as a uniform process that generates problems … and [where] time becomes experienced as a scarce resource for the mastery of problems that arise—that is, as the pressure of time” (p. 6). In effect, Hegel is describing history as a design process, where our solutions to past problems generate a whole new set of concerns. Moreover, our conception of history became visual—that is, time was represented as a spatial timeline, structurally defined out of time and that we now relate to positionally.

Habermas (1987) argues that for Hegel, to be modern was to forfeit a transition from one age into another, for the actual present is the future made present, and it “can no longer gain its self-consciousness from opposition to an epoch rejected and surpassed, to a shape of the past” (p. 7). Put differently, the modern self-consciousness conceives of the present in spatial terms as a break with the past, wherein the actuality of its own present “has to recapitulate the break brought about with the past as a continuous renewal” (p. 7). Hegel, Habermas suggests, sees this structure of self-relation, or subjectivity as he calls it, as a universal condition of the modern age (p. 16).\(^{10}\) Common manifestations of this modern subjectivity are individualism, the right to criticism, and autonomy of action. The critical insight for our discussion about design is the fact that human beings as individual subject become structurally defined. That is,

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\(^9\) In acknowledging Hegel’s contribution to my conception of modernity, I have described Hegel in Habermasian terms, rather than directly in his own words, because my own understanding of modernity is shaped by Habermas not Hegel. Thus, my intent is to merely disclose Hegel’s influence on Habermas’s understanding of modernity, rather than study Hegel directly.

\(^{10}\) The conceptual problem, here, as Hegel was the first thinker to make clear, is that modernity grounds itself out of itself, and in so doing begs for self-understanding and self-assurance. To be coherent with itself, Habermas (1987) argues it “can and will no longer borrow the criteria by which it takes its orientation from the models supplied by another epoch; it has to create its normativity out of itself” (p. 7). Because modernity’s claim of making a radical break is incongruent with the reality of history it was trapped in itself, by itself, from its inception.
human "being" is extracted from the continuous flow of time and made to stand in a structural relation to time.

The modern structural conception of subjectivity was intended to be freeing, but its consequence was also socially disintegrating. Hegel’s solution to this inherent contradiction was to see reality as a dialectical process, or series of structural stages in which one state of affairs would give rise to another. This notion of a historic problem generating-solving process cements itself in the words that have become the hallmarks of modernization: “revolution, progress, emancipation, development, crisis, and Zeitgeist [spirit of the age]” (Habermas, 1987, p. 7). For Hegel what is seen to initiate these cause-effect moments is the “self-activity” of Geist, or Total Being, of which “self-active” human beings are apart (Dunkel, 1973). This “self-development” (Bildung) is “a process through which modern culture forms the modern self, whose aim is the actualization of its own freedom” (Wood, 1998, p. 305). Put differently, “early modern culture (Bildung) was to shape the ‘moral subject’ which finds its self-actualization in ‘subjective freedom’” (p. 103). Within the realm of the individual this self-development “is simultaneously a process of self-transformation and an acquisition of the power to grasp and articulate the reasons for what one believes or knows” (p. 102). In a larger and more important sense this self-development is a process of being transfigured and elevated (spiritualized in a Zeitgeist sense) through the institutions of civil society. This dialectical process is an expression of the design process that exists between the life-world and its systems. However, it is also a particular expression of this process in modern spatial terms.

The inherent aim of education in the Hegelian approach was to “develop” individuals “into rational citizens of a rational society”, who are able to recognize and respect their fellow citizens as equals, with whom they rationally discourse in universal terms about principles “whose validity everyone must rationally acknowledge” (Wood, 1998, p. 314). This vision of modern emancipatory study was eagerly and deeply enfolded into the Prussian (and later German) national identity and also its schooling system, which in turn was emulated broadly through the western world (Bowen, 1972). Notably, the U.S. Commissioner of Education (1889-1906) William Torrey Harris who had a significant design role and established the structural organization (and operational
philosophy) of the American public school system from an explicitly Hegelian approach (Dunkel, 1973). These historic structurations went on to inscribe Tyler’s designing.

While the massive scale that modern educational systems have achieved globally, in part, make them very successful design acts; these new systems have also generated a new set of concerns. According to Young (1990) Habermas argues modernity was made problematic by the contradictory by-products of its own success:

The development of medicine, technology, industry, communications media, and information processing have led to the emergence of institutional complexes; these in turn both require and constitute new managerial systems which penetrate more widely into more and more aspects of daily life, destroying the primal communal and institutional sources of motivation and, hence, hope. (pp. 7-8)

The idealistic energy—which characterized the scientific revolution, the industrial revolution, and the enlightenment—shaped the design of the modern world in the West. This modern world was brought forth by the resources of the life-world for the purpose of its self-development and flourishing. Ultimately, the modern system-world that the life-world created to support its self-development and flourishing turned back upon the life-world and set in place new limitations. These new limitations created a crisis, a crisis of modernity itself wherein the life-world became decoupled from the systems it created and, with the life-world’s idealism exhausted, it questioned the legitimacy of the modern system-world it had brought forth to serve it. The welfare systems of modern states is an example of a typical self-contradictory modern design: “In providing income support in the form of pensions and grants, it replaces family relationships with bureaucratic ones—this reduces the dignity of recipients” (Young, 1990, p. 10). Put in educational terms, “a similar process is developing with regard to the ‘pedagogical privacy’ of the classroom and the collegial individualism of the relatively anarchical arena of higher education” (p. 10). On the one hand, modernity brought forth the emancipatory possibilities of welfare states, notably, the provision of public education; on the other hand, the associated institutional complexes governing these systems continually “[tighten] the net of [rules] and administrative controls and interventions into the lives of its clients” (p. 10). This tension is a characterization of the indwelling between two worlds Aoki (1986/2005) describes. Despite my awareness of this tension I often feel that I remain stuck within it.
C. Taylor (1991) suggests we, in the West, still live with the influence of a “modern social imaginary” (p. 12). Building on ideas from Anderson’s (1983) *Imagined Communities*, C. Taylor (2004) characterized the distinct “way contemporaries imagine the societies they inhabit and sustain” their guiding “social imaginary” (p. 6). Our Western modern social imaginary (deeply rooted in Plato and Aristotle’s vision for social order) is drawn from Hegel’s modern notion that society exists for the benefit of the individual and that the “normative order is the mutual respect and mutual service of the individuals who make up society” (p. 12). C. Taylor argues that despite our critiques of modernity, we remain modern in the sense that we understand ourselves to be individuals with certain natural rights; first among these being “self-determining” freedom, which is to say, the right to decide for one’s self what concerns them. Similarly, we still hold a sense of innate obligations to each other to seek certain common benefits, including “security and prosperity” (C. Taylor, 2007, p. 13). Our institutions continue to be shaped by our modern notion that, “we start with individuals and their debt of mutual service, and the divisions fall out as they can discharge this debt most effectively” (p. 13). And at least institutionally speaking, our preeminent method of personal emancipation and societal construction remains instrumental reason—the “greater [institutional] application of [which] gets [us] more of what [we] want, whatever that is” (C. Taylor, 1991, p. 21). In short, it seems to me that our answers to Hegel’s guiding questions remain with us.

Whether we can make our history or whether such a belief has already led in the [course of our modern history making efforts] … to a situation in which we must unmake a great deal of it. Whether we can control our fate to such a degree as to dare to begin reconstructing God or whether our control is so limited that we must proceed with the utmost caution. And finally, whether we possess in reason and art a fallible but useful means for this task, or whether, reason being limited to the domain of necessity and art to idiosyncrasy, our means fall so far short of our aim to force us to abandon it. (Young, 1990, p. 7)

In our continuing efforts to answer Hegel’s questions, two conceptual problems emerged. First, as Hegel himself noted, modernity grounds itself out of itself, and in so doing begs for self-understanding and self-assurance. Thus, in order to be coherent with itself, it “can and will no longer borrow the criteria by which it takes its orientation from the models supplied by another epoch; it has to create its normativity out of itself”
(Habermas, 1987, p. 7). Modernity’s claim of making a radical break, however, is incongruous with the reality of history, which is never capable of starting entirely anew. Consequently, modernity was trapped in itself, by itself, from its inception. The second, related, problem was that in modernity’s attempt to start anew from the ground up it attempted to “find a secure point of reference that could serve as foundation . . . from which everything else could be derived” (Cilliers, 1998, p 112). Conversely, modernity “projects a future in which we all emerge together into a single, homogeneous world culture” (Taylor, 1999, p. 161). However, in its failure to break from history and secure a new foundation, modernity has also failed to project itself as a future singularity.

The collapse of modernity’s core assumptions upon themselves, introduced a post-modern state of understanding. To explain what is emerging requires revisiting the pre-modern condition. In structural terms, pre-modern thinking was based on each element of one’s life-world occupying a pre-ordained place in the pre-established system-world of the universe. This given system-world and one’s life within it was thought to act in according to the “great chain of being”—a strict, hierarchical categorization of all matter and life, beginning with Aristotle and his biological classification, and by the Medieval period, a God-given ordering with God at the top, minerals at the bottom, every grade of plant and creature in its place between. In temporal terms, pre-modern history was thought to unfold along a pre-ordained path—a “faith” based teleology. In sum, pre-modern thought was characterized by the idea that one worked with and in nature with a sense of balance, meaning that everything operated as an organic unity, according to some ideal and stable teleological state.

Modernity introduced a new way of thinking, a scientific way. In fact, the pre-modern to the modern shift seemed to be largely a consequence of this new scientific way of thinking and its broad application to nearly all intellectual pursuits and professional work. Doll (1993) suggests that “Copernicus and Einstein represent the extreme boundaries of the modern paradigm, with Descartes and Newton as the medians” (p. 21). Copernicus, along with others, including Brahe, Kepler, and Galilei introduced the idea of scientific fallibilism as a new form of thought based on a “mathematical and mechanical cosmology” of “Natural Laws” (p. 20). Descartes’
importance was his set of rationalist rules of reason to validate knowledge and Newton discovered a simple way to unify empirical data by means of predictive formulas.

Modernity mathematized "knowledge" in the form of an epistemological "positivism," which privileged a scientific form of knowledge resulting from positive affirmation of concepts and theories via rigorously adhering to scientific methods. As Doll (1993) clearly describes: “knowledge became a separate, isolated quality, removed from the experiences and wisdom of life. The cognitive emphasis shifted from making good judgements to making accurate predictions” (p. 113). A further implication of the reification of knowledge was “the metaphor of mind shifted from being an abstract quality of the soul to being a ‘thing’ in the body” (p. 113). Descartes made a fundamental distinction between the body’s materiality and the non-materiality of the mind—res extensa (the physical world) and res cogitans (the thinking being). The epistemological significance of this division was a shift from realism to idealism. That is, a shift from ‘object’ knowledge that exists independent of the subject’s mind (objectivism) towards ‘object’ knowledge that exists only within the subject’s mind (subjectivism). While not altogether a new idea (Plato implied a somewhat similar notion) Descartes’ modern mind-body split was unique in that he articulated a bidirectional relationship between the two realms. This is, while the modern mind was understood to be the body’s rational controller, so to, the modern body was seen to influence the modern mind’s otherwise rational control. Knowledge became disembodied and taken out of time.

Summarizing Newton’s contribution to modern thought, Doll (1993) describes Newton’s underlying view of Nature and its order—that is, its “uniformity” and “simple symmetry; and buried within that symmetry . . . a set of necessary, linear, causative relations accessible to exact mathematical description” (p. 34). The world, its “events, activities, experiences,” under Newton’s purview became “quantified” (p. 35) and its future events became predictable. Indeed, Doll notes “this mathematization of science … allowed [Pierre-Simon] Laplace to develop his concept of the exact predictability of all future events” (p. 34). Nevertheless, while mathematization of science proved to be very useful in understanding the world and devising new means of coping with its challenges, Newtonian order remained an abstraction of observation; and these mathematical ideals always ‘differs slightly’ from observed reality. This gap between the ideal and real
resulted in "a rational-empirical split," which privileged the “theoretical” over the “observational and practical” (p. 35). Citing Joseph Schwab (1970) and Donald Schön (1983) Doll (1993) states that “in this split the practical and experiential are seen not as viable entities in their own right but as applications of the theoretical” (p. 35). Moreover, “professionalism, of the technical-rational variety, espouses this split, downgrading an individual’s own sense of competence in favor of copying or applying the performances others have devised” (p. 35). Doll argues that modern “curricula from elementary school through graduate degrees are based on this set-performance model” (p. 35).

The modern structural understanding of the world displaced the pre-modern teleological faith-based absolutism. Whereas each element of the pre-modern world had a pre-ordained place and time, modernity broke these elements free. Life-world elements could now be shaped in any way and occupy any place or time we saw fit. The world was no longer simply a consequence of God’s order and timing, and human beings were freed to shape the world in any way we want. The pre-established system-world of the universe became system-worlds we could accurately predict and system-worlds we created. History was no longer thought to unfold along a pre-ordained path, but rather became something we could question and shape. That is, history was no longer teleological, but reflexive. The very act of naming the present as modern marked a break in time. And in so doing, allowed us to ask the question what is modernity?

Modernity’s displacement of elements allowed us to freely consider and designate the place and time of things in the world. However, modernity’s obsession with and emphasis on finding one essential place for things (that is, “one essential truth”) also “blind[ed] us to the relational nature of complexity, and especially to the continuous shifting of those relationships” (Cilliers, 1998, p 112). This blindness was clearly evident in the high-status knowledge produced by the social institutions of highly developed (Western) societies. In his seminal work The Postmodern Condition: A Report on Knowledge Lyotard (1984) notes that a primary characteristic of this type of knowledge production is the modern notion that aspires to fit all forms of knowledge into a general unifying narrative. Lyotard designates any knowledge (in particular scientific) as modern that “legitimates itself with reference to a metadiscourse of this kind making an explicit appeal to some grand narrative, such as the dialectics of Spirit, the hermeneutics of
meaning, the emancipation of rational or working subject, or the creation of wealth” (p. xxiii). Lyotard’s contention with scientific knowledge that makes essentialist appeals to grand structurally defined metadiscourses is that in so doing it limits our sensitivity to the totality of true knowledge rather than serving to encompass it. Put differently, these grand narratives hold the appearance of making the complex easier to understand, but in actuality they desensitize us to the world’s true complexity, temporality, and the language games inherent in the narratives themselves. Consequently, he defines “postmodern as incredulity toward metanarratives” (p. xxiv), which of course includes a rejection of Hegel’s “totalizing” philosophical tradition. This is not to suggest that narratives are not an important knowledge form, but rather that “helpful” narratives tend to be local in nature (local sense-making to achieve local aims) and cannot be simply linked together into a general unifying scheme. Thus, we might summarize that the “postmodern condition is characterized by the co-existence of a multiplicity of heterogeneous discourses—a state of affairs assessed differently by different parties” (Cilliers, 1998, p. 114).

Lyotard’s critique illustrates that “instead of trying to analyse complex phenomena in terms of single or essential principles” postmodern approaches to thinking “acknowledge that it is not possible to tell a single and exclusive story about something that is really complex” (Cilliers, 1998, p viii). Consequently, the richness, complexity and diversity of postmodern perspectives diminish the power of traditional modern discourses that seek “to deliver a universal identity, sense of direction and historically assured destination” (Fry, 1999, p. 64). Likewise, as a “critical reappraisal of modern modes of thought” (Waters in Doll, 1993, p. 5) it’s fair to say that on the whole the postmodern discourse has served to engender a greater flexibility of thinking within many domains, including that of education (Doll, 1993). However, it must also be noted that the diversity and contradictions of modernity that postmodern thinking brings to light were present in modernity itself, only repressed by initial idealism or hidden from view prior to being institutionalized. The significance of this insight to our present discussion is that while “the viability of the project of bringing the world into one moment of time, culture, economy, political system, and world view has come to be seen as an ever more impossible goal” (Fry, 1999, p. 64), the modern project itself continues to serve
West) as the framework for its own critique. That is, Western postmodern perspectives are limited in that they remain views from inside the Western conception of modernity.

6.3. Towards Sustain-Ability

My lived experience of modernity and post-modernity has been situated within the West. Nevertheless, in my doctoral studied I was intrigued by an alternate conception by Latin American philosopher Enrique Dussel (2000) who observes “if one aims at overcoming modernity, it becomes necessary to deny the denial of the myth of modernity from an ethics of responsibility” (p. 473). Dussel claims that our understanding of modernity (and postmodernity) in the West is incomplete, because of its eurocentric articulation. While a Western critique of modernity (such as, Lyotard) is helpful it is inherently incomplete, because it emerges from within the project itself. Now, it can be argued that this analysis is sufficient in terms of Western modernity (versus global modernity), but for Dussel it is not. His reason is that European conceptions of Western modernity fail to account for historical “moments” that made Western modernity possible. My reading of Dussel helped me to see my own experience of modernity differently.

Dussel points out that Europe is not a closed system, and that the boundary conditions of modernity as a project (and problem) have always been global in proportion. By giving modernity a global framework, the emergence of Europe as the centre of the modern world system can be seen as having been made possible (in part) due to its interface with the rest of humanity. The implication, here, is that “to think ‘non-Eurocentrically’ is to be able to imagine that the Industrial Revolution was Europe’s response to a ‘vacuum’ in the East Asian market, . . . [a] ‘vacuum [that] attracted the ‘possibility’ of being ‘filled’ by a European production that had been growing since the fifteenth century” (Dussel, 2002 p 231). His intent is to make room for a dialogical relationship between modernity’s centre (20% of the world) and its periphery (the other 80%). Being bound to my own Western experience Dussel provided me with an ‘exteriority’ by which modernity’s “internal” state of affair may be more fully understood.

Dussel (2002) is hopeful that a truly trans-modern project can emerge, “a ‘beyond’ that transcends Western modernity” (p. 221). He does not suggest the modern
be abandoned, but rather reframed. Acknowledging that the centrality of Europe in the modern world system is only a couple of centuries old allows us “to suppose that what has not been subsumed by modernity stands a good chance of emerging strongly and being rediscovered not as an antihistorical miracle, but as the resurgence of a recent potentiality” (p. 221). That is, the Western modern social imaginary C. Taylor (2007) describes and its various social forms are, argues Dussel (2002), “far from being a cultural globalization of everyday life that valourizes the majority of humanity” and that “from this omitted potentiality” can emerge a “beyond” that transcends Western modernity (p. 221). Dussel offers us a way to “take account of and responsibility for, what is destroyed” (Fry, 1999, p. 52).

Living in the West is a privileged position. Indeed, I appreciate the many niceties of living in a modernized society, such as being able to drink a glass of water from the tap and being confident that it’s not likely to make me sick or kill me. However, what remains problematic is whether we can sustain the complex, multi-layered, interconnected, interdependent, bio-technological system-world that we have established and live within if we continue to develop all places and peoples of the earth in the same fashion? Homer-Dixon (1995) observes that experts generally agree on the fact that our “increased resource consumption can cause resource scarcities, and scarcities impose costs on societies” (p. 587). The debatable questions are, first, “the severity of future scarcities” and second, do we have the “capacity to adapt to them?” (p. 587). That is, the problem is not merely material, it is also conceptual.

The legacy of modern design as productivism is an enduring optimism in the capacity of human ingenuity to respond to a scarcity at the point when it starts to become a crisis. In ecological terms, Homer-Dixon (1995) urges caution. He argues that if we wait for global scarcity to become critical with the faith that our ingenuity will save us, and we are wrong, we will already have “burned our bridges: the soils, waters, and forest will be irreversibly damaged, and our poorest societies will be so riven with discord that even heroic efforts at social renovation will fail” (p. 606). The concern is we may have an ingenuity gap that cannot be closed. As a designer this argument leads me to ask a further set of questions, beginning with what are the unseen costs of our system-worlds designs? What have we lost in the process of constructing our system-worlds?
What alternative life-worlds might we still have time to create or revive? And how might we understand design differently from alternate life-world perspectives?

If we consider Homer-Dixon’s (1995) ingenuity gap in the context of curriculum design, Bowers (2005) has identified a similar problematic link between “constructivist” learning practices and “the drive to bring more aspects of everyday life under the control of the industrial process” (p. 1). Before I describe Bower’s critique I shall first elaborate on the connection between constructivist learning theory and design.

Kafai (1996) observes “there is a convergence in the fields of design and learning, with a natural intersection in the study of learning-through-design” (p. 4). Nevertheless, design theory and learning theory do have very different origins. The initial emphasis in design theorizing was “the final product” and the influence of “constraints” on the final product (p. 4). By contrast, Kafai argues that learning theorists focused on process. The formative linkage between the two domains later emerged from the simple fact that constructivist learning theory utilizes the design metaphor of “construction” as its model for learning. Inversely, the constructivist idea of meaning construction expanded the definition of design into a “process through which a designer comes to understand not only objective constraints, but also subjective meanings” (Kafai & Resnick, 1996, p. 4). These subjective meanings, in turn, are thought to be constructed.

The distinctive element of constructivism as a theory of cognition is the core “idea that what we call knowledge does not and cannot have the purpose of producing representations of an independent reality, but instead has an adaptive function” (Glaserfeld, 2005, p. 4). Each person constructs their own representation of the world—that is, the way we segment the flow of our experience, and the way we relate the pieces we have isolated, is and necessarily remains an essentially subjective matter” (p. 5). As Piaget (1970) asserts each individual adapts what they know to what they experience (via, accommodation) and what they experience to what they know (via, assimilation). The educational implication, here, is that knowledge cannot be transmitted, but must be constructed individually. “Since the process of construction is adaptive in nature and requires self-reorganization,” writes Fosnot (2005), “cultural knowledge that is assumed to be held by members of the culture is in reality only a dynamically evolving, negotiated
interaction of individual interpretations, transformations, and constructions” (p. 28). Cultural knowledge in a shared life-world sense is not objective, but rather individually reconstructed in a dynamic subjective process. This is not to say that learning is entirely learner-centric. For instance, the social constructivists also claim that one’s culture and social interactions, while subjectively bound, are also significant. Vygotsky (1978) argues, “every function in the child’s cultural development appears twice: first, on the social level, and later on the individual level; first between people (interpsychologically), and then inside the child (intrapsychologically) (p. 57). Similarly, Bruner (1996) suggests that learning as a social process involves our construction of “realities” based on common cultural systems and narratives—that is, it has intersubjective meaning.

The significant insight arising from this discussion and learning theory’s relation to design is that constructivist theory may be understood as a theory of action, involving both subject-object interaction and inter-subjectivity. Wertsch (1991) adds that,

When action is given analytic priority, human beings are viewed as coming into contact with, and creating, their surroundings as well as themselves through the actions in which they engage. Thus action, rather the human beings or the environment considered in isolation, provides the entry point into the analysis. (p. 8)

Following this same line of argumentation designing may also be understood as a theory of action. That is, design acts. And it is the “generative” inter-action of theorizing about designing and learning that is important to our discussion.

While constructivism as a design metaphor for learning has certainly been generative, as a designing of learning it has also brought forth an underlying curriculum design problem. Bowers’ basic criticism of constructivist theory and practice is its focus on individual construction of knowledge, which emerges from, and in support of, a particular cultural context (notably, the Western modern project) wherein the individual is assumed to be an atomic intellectual and moral unit. The problem is that the promoters of constructivist ideas tend to ignore the cultural context of learning, assuming knowledge is continuously individually and socially (re)constructed. As a result, the associated taken-for-granted knowledge and associated assumptions of their Western modern context is also ignored. Thus, these embedded forces become “part of the
process of colonizing other cultures to a Western pattern of thinking and individually centred lifestyle” (Bowers, 2005, p. 29). Moreover, as a consequence of “not being aware that most daily activities are based on traditions, the modern myth that equates change with progress becomes the dominant characteristic of how many people think” (Bowers, 2005, p. 4). Moreover, the emphasis constructivists place on people constructing new knowledge can also situate learning in the here-and-now, making it ahistorical. What Bower has characterized as problematic with constructivism, I suggest reflects an underlying design problem—productivism.

As productivism constructivism is bound to the modern premise that seeks to grounds itself out of itself, and thus, takes itself out of the continuum of history—that is, a ‘new beginning’ in a state of continuous renewal. We may blindly internalize this assumption that there is nothing worth learning from the past, because the past (as active participant in the learning process) is absent in a ‘modern’ constructivist approach to learning. Or, to be precise the modern stance commonly employed by constructivist theorists and practitioners has historically viewed the ‘construction’ of knowledge as a ‘new beginning’ rather than as the ‘building’ upon (and within) a historical tradition.

While these modern embedded forces are certainly a concern in colonization terms, it is an equally valid criticism of constructivist practices within my ‘developed-world’ context. That is, there are consequences to ignoring ‘taken-for-granted-knowledge’ while pursuing the ‘high-status’ self-constructed knowledge constructivists tend to focus on making explicit. The consequence is twofold: “the teacher is unable to help [students] recognize the limits of their own knowledge” upon which new knowledge is supposedly constructed, and “the destructive traditions are also more likely to go unnoticed” (Bowers, 2005, p. 43). As a result of this focus, the taken-for-granted ‘traditions’ of modernity, such as industrial production, change-as-progress and hyper-consumerism, continues to march en masse unabated in the ‘developed’ and the ‘not-yet-as-developed’ world. The crises of modernity’s blindly destructive traditions, both aided and unnoticed by unsustainable constructivist theory/practice is threelfold: “the spread of poverty and disillusionment, the disjuncture between the diminished ability of people to buy basic necessities and the excessive production capacity that forces more
production facilities to be located in areas of the world where wages are even lower, and the increasing rate of environmental degradation” (Bowers, 2005, p. 77).

While this situation is not exactly new, what makes our present circumstance unique is a sense that time is shrinking. Ironically, the ‘pressure’ of time is the result of a modern “image of history as a uniform process that generates problems” and also our experience of time “as a scarce resource for the mastery of problems that arise” (Habermas, 1987, p. 6). Fry (1999) adds that as modern beings “the image we have of the finitudinal horizon of being (and our being) ever moves toward us” (p. 65). Nevertheless, as Homer-Dixon (1995) observes “every generation feels it lives on the cusp of chaos,” (p. 597) and it seems reasonable to at least wonder why the future should be different than the past? The present problem, as Fry (1999) argues is that we’ve made the future so, we know it (to some degree), and still we avoid taking responsibility for what we have made. Fry (1999) writes, “we live in an ecological confusion: this is our world: it is a world resulting from the consequences of structural designing: a world we continually visualise, but which we are still almost totally unable to see as unsustainable.” (p. 100). For those societies with the necessary ingenuity to solve the social and technical problems arising from the consequences of modernity’s modernization their ‘modernized’ lifestyle will continue on (although its form will change).

The implication for our contemporary world is that as Homer-Dixon (1995) argues, “some societies may not be able to supply the unprecedented amounts of ingenuity they will need to solve their emerging scarcity problem” (p. 597). The problem in earth terms is the massive expansion of productivism in the developing world, notably, China, India, and South America. If such a massive increase in global production continues, it will necessarily involve an “increased consumption of the planet’s natural resources, including nonrenewables like petroleum and ores, and renewables like cropland, forests, freshwater, and fisheries” (p. 587). The massive industrialization and urbanization in China in recent years highlights this problem. While human ingenuity will likely prevail (in part), what makes Homer-Dixon’s argument compelling is that human ingenuity (in the sense of both idea-generation and idea-implementation) is itself becoming a global scarcity due to factors such as market failure, social friction, capital availability, and constraints on science (the primary way of solving practical problems in
the past). On one hand, design in its modern form as an applied science has created an emerging global crisis, and on the other hand, perhaps design has the power to save us.

The global design problem, argues Fry (1999), is that the modern industrial consumer culture “is now life in a condition of greater ignorance than ever before, quite simply because the gap between what we actually know en masse and what we need to know to sustain all that needs to be sustained, grows by the day” (p. 266). In the wake of the modern civilizing project, which has promoted urban densification, industrial processes and consumer lifestyles, we as human beings have failed to learn what we have done, what we have made, what we have unmade. Echoing Bowers’ educational concerns, Fry makes the critique that “rather than education being a primary means by which sustain-ability is learnt it has become an induction into error. It is a learning of the practices of unsustainability and of the subordination of dwelling to autonomic direction” (p. 266). The ultimate object or end of modernity as a project still seems to be our everyday taken-for-granted focus in the so-called ‘developed’ world and in so doing we have largely failed to notice the ruin, hardships, and waste left in its wake. In our eagerness to construct a new world, we have failed to take account of and responsibility for what was destroyed. Our giving a privileged position to what is constructed over what is lost has become an all too common induction into error in Western education. This is not to say, as Fry also points out, that destruction can simply be avoided. Rather, “it is to say that the choice of what is destroyed, how it is destroyed, how it is done and who takes responsibility is critical” (p. 52). Therefore, while I see great value in constructivist theory and practices (as a bringing forth), I also think we as educators must learn to appreciate that “creation is ever co-joined to destruction” (p. 52). In this way, education might rightfully act as the primary means by which sustain-ability is learnt. In sum, the potential that I see within the ecological-cultural-historical critiques of Dussel, Bowers and Fry is the potentiality of approaching a ‘beyond’ that transcends Western modernity—a trans-modernity that re-imagines constructivist learning, the future designing of our life-worlds, and the ontological designing of ourselves.

While modernity (in the singular) “projects a future in which we all emerge together into a single, homogeneous world culture” (C. Taylor, 1999, p. 161)—an undesirable outcome clearly illustrated by cases where original cultures were destroyed
by colonialism—C. Taylor also argues that “transitions to what we might recognize as modernity, taking place in different civilizations, will [actually] produce different results that reflect their divergent starting points” (p. 162). Importantly, what I think makes for a successful transition is “a people finding resources in their traditional culture which, modified and transposed, will enable them to take on the new practices” (p. 162).

How other modernities can emerge in educational terms, may be hinted at by Freire’s (1992/2004) *Pedagogy of the Oppressed* and also his later collaboration *Pedagogy of Hope* (Freire, 1970/2000). Framed by C. Taylor’s conception of multiple modernities, Freire’s rationalization of study illustrates how alternate modernities might be formed pedagogically through dialogue and praxis, serving as a process for developing a transformational consciousness in educational activities. The problem Freire (1992/2004) sets out is “How can the oppressed, as divided unauthentic beings, participate in developing the pedagogy of their liberation?” (p. 48). That is, how can developing societies and their people become modern, without becoming like the West? The response he lays out to this problem of modernization\(^{11}\) has two stages. Initially, “the oppressed” Freire argues must necessarily “unveil the world of oppression and through the praxis commit themselves to its transformation” (p. 54). Then, once “the reality of oppression” is transformed “this pedagogy ceases to belong to the oppressed and becomes a pedagogy of all people in the process of permanent liberation” (p. 54). A key element of Freire’s model of pedagogy is that it “must be forged with, not for, the oppressed” (p. 48). Freire’s model connects closely with C. Taylor’s (1999) idea that “a people” must find “resources in their traditional culture which, modified and transposed, will enable them to take on the new practices” (p. 162).

The critical idea for the purposes of our discussion is that Freire’s pedagogical method is “co-intentional” where both teachers and students are “subjects” involved “not only in the task of unveiling . . . reality, and thereby coming to know it critically, but in the task of re-creating that knowledge” (p. 69). Moreover, education becomes “the posing of the problems of human beings in their relations with the world” (p. 79). Students become

\(^{11}\) Freire (1992/2004) would likely use the term development, but I am using modernization here in the sense C. Taylor (1999) uses it.
committed “critical co-investigators in dialogue with the teacher” (p. 81). And teachers become “problem-posers” who “create; together with the students, the conditions under which knowledge at the level of the doxa [that is, common belief] is superseded by true knowledge, at the level of the logos [that is, justified true belief]” (p. 81). Together the ‘teacher-student’ and ‘student-teacher’ reflect and act ‘within a situation.’ This co-creative situation generates new ways of naming, understanding and acting in the world.

While I think Freire’s ‘co-intentional’ methodology is helpful, it should be noted that Bowers (2005) actually includes Freire in his critique of constructivism, arguing that embedded in Freire’s ideas about education is a vision of learning that “includes a modern concept that is not part of nature’s process of design—the idea of a linear form of progress” (p. 26). Like Bowers, I acknowledge that various forms of cultural and intergenerational knowledge may indeed be lost “when students are indoctrinated with [Freire’s] idea that the only reliable knowledge is what . . . they name for themselves” (p. 29). Nevertheless, I think Freire’s co-intentional explanation is helpful in forming a re-conceptualization of curriculum design. For at the heart of design is intention, design emerges from the designer’s intent to bring forth something, changing a situation through designation. Given that the site of curriculum as an educational act is a shared life-world of study, both the student and educator must also intend to study together. The implication here is that curriculum design is co-intentional. Nevertheless, what I reject is the vision that this co-intentional curriculum making is a linear form of progress.

In drawing upon Dussel’s (2000, 2002) work I have identified the importance of stepping beyond the western tradition to gain an alternate perspective of my particular shared life-world. A key point that arises for me from his argument is the notion of trans-modernity. The implication of this notion is that other moderns can arise elsewhere. These other modernities may arise, C. Taylor (1999) suggests, by way of drawing upon the “resources in their traditional culture which, modified and transposed, will enable them to take on the new practices” (p. 162). Thus, in seeking to re-conceptualize design, it makes sense to study the traditional “resources” of other cultures, and how their modifications and transpositions enable them to take on new design practices. However, given the autobiographical nature of my present study, I intend to stay within the scope of my own Western intellectual tradition. Thus, the significance of including Dussel’s
non-Western voice within this study is that it interrupted my taken-for-granted linear conception of my own tradition of thought progressing from pre-modern, to modern, to post-modern. Moreover, it puts into context, my own move to reclaim what as been lost in my modern understanding of curriculum design, by drawing upon the pre-modern and modern conceptual resources of my own intellectual tradition, modifying and transposing in both post-modern and modern ways to enable new ways to design curriculum.

6.4. The Nature of Design

In the course of my analysis of my lived experience of curriculum design, I have argued that design may be understood in Aristotelian terms as belonging to the productive, as distinct from either the theoretical or the practical. This was a move to reclaim a pre-modern conceptual distinction that was lost. In my revival of this distinction, it became possible to see that the particular form of the productive we find in Tyler’s Rationale is productivism, which we may understand as a technological irresponsibility. Now, what I believe has been lost from our Western modern view of the productive is its relationship to *physis*, or nature. *Technē* is an inventive process, or method, which because it intervenes in situations that yield indeterminacies it has the power to transform what is into what is possible. On these grounds, Atwill (1998) argues, “*technē* is frequently defined against *physis* (nature), *automaton* (spontaneity), and *tychē* (chance), each of which both enables and constrains invention” (pp. 70-71). Indeed, for Aristotle the concepts of physis and technē are intertwined.

Nature, for Aristotle (1929/1970), is simply “the principle and cause of motion and rest to those things, and those things only, in which she inheres primarily, as distinct from incidentally” (p. 109). The first thing that strikes me about this definition is that his conception of nature is far broader than is common today. Aristotle does not limit his inquiry to an understanding of physics as our modern natural sciences conceptualize their phenomenon of study. Rather, as Wicksteed and Cornford (1929/1970) put it, Aristotle views “all things of which motion, change, or becoming (i.e. the inception of, and cessation from, ‘being this or that’) can be predicated are the subject matter of the study of Nature” (p. xvi). The study of Nature, thus, presents itself in Aristotle’s works as being more about solving fundamental conceptual puzzles about becoming, than in
determining empirical facts. That is, why anything that changes, becomes or grows, becomes what it becomes is the emphasis of his study. What is particularly interesting about Aristotle’s conception of Nature for our discussion is that as Atwill (1998) observes “art” or technē is his guiding “paradigm for nature” (p. 85). Thus, his conception of nature also reflects his conception of design. And it is his conception of an art that we have lost in the process of our modern scientific abandonment of Aristotle’s conceptions of inquiry.

Underlying Aristotle’s conception of both physis and technē is his unified theory of causality, wherein he postulates four essential causes to explain why everything that becomes, becomes. This theory should not be interpreted in modern scientific terms, but rather viewed as an all-encompassing explanatory theory. Lawson-Tancred (1998/2004) suggests that the term in English refers both to something like an “explanatory factor” in addition to “notions of cause and reason” (p. Ivi). Aristotle describes these four explanatory causes, in general terms, both in Physics (book II, chap. 3) and Metaphysics (book V, chap. 2):

The material cause: “an intrinsic feature from which something is produced.”

The formal cause: “the form and template, which is the account of the what-it-was-to-be-that-thing.”

The efficient cause: “the source of the primary principle of change or stasis.”

The final cause: “the end of something is what that thing is for.” (Aristotle, 1998/2004, p. 115)

Regarding technē, Aristotle uses the production of a bronze statue as an example of how his four causes make up an explanation. First, the bronze is the material cause, because it is what the statue is made of and also because it is what undergoes change as it is what is melted and given a new shape. This shape enters into the explanation as the formal cause. How the formal cause comes into being is the efficient cause. In part, the efficient cause is simply the agency of an artist bringing forth the statue. However, Aristotle elaborates upon this notion, arguing that the efficient cause is not merely the artist, but more importantly the person acting as an artist. And, thus, ultimately it is the artist’s knowledge of the process of bringing forth the statue. The end
for which each step of the production process is directed is the final cause. That is, the
cfinal cause in part explains each successive step of bringing forth. In the case of making
a bronze statue, the process typically begins with making a wax model, which is used to
make a mold, which then shapes the molten bronze as it hardens into its final form. In
each step, the final cause explains why it is done—for the sake of making the statue.

The critical distinction between art and nature for Aristotle concerns, as Atwill
(1998) puts it, “their different sources of efficient causes: nature is its own source of
motion, whereas technē always requires a source of motion outside itself” (p. 85).
Aristotle’s (1929/1970) definition of nature is “the principle and cause of motion and rest
to those things, and those things only, in which she inhere primarily, as distinct from
incidentally” (p. 109). In contrast, regarding those things that are made, their efficient
cause is incidental. Thus, in referring to all things artificial Aristotle argues, “none has
within itself the principles of its own making” (p. 109). In Atwill (1998) words, “an art does
not contain within itself its form (formal cause) or source of motion (efficient cause)” (p.
85). The artist, the maker, or in our case, the designer is the efficient cause. However,
as Aristotle argues the heart of the efficient cause is not merely the artist, but rather the
artist’s knowledge. And this knowledge is intertwined with nature. To understand this
relationship requires a deeper investigation of the nature of technē as a particular form
of knowing.

Atwill (1998) argues the kind of knowledge bound to technē—characteristic of
medicine, rhetoric, and for us design—is grounded in “empeiria” which may be translated
as “experience,” or “practice,” or even “craft” (p. 79). The core idea that underlies technē,
or art, is that flexible principles are derived from experience and connected to particular
situations. For instance, regarding medicine Aristotle (1998/2004) writes:

The circumstances in which [an art] arises are that from the many cases
of thinking in experience a single general assumption is formed in
connection with similar things. For instance, to have the assumption that
when Callias is ill with such and such a disease such and such a
medicine is appropriate ... is a matter of experience. But the knowledge
that for all such people, defined by species, when ill with such and such a
disease, such and such a medicine is beneficial belongs to [art]. (pp. 4-5)
For Aristotle, experience is at the heart of technē. An art, in Aristotle’s terms, is governed by a complex constellation of principles, which arise from experience. According to Atwill (1998), these principles may be characterized as “rational and repeatable” but not “rule governed” and lying “somewhere between algorithms, or strictly deductive procedures, and natural genius—even magic” (p. 82). An art’s principles emerge through practice, wherein, the practitioner “remembers, compares, and reevaluates methods tried in the past, adjusting principles on the basis of what seemed to succeed or fail” (p. 81). In this way, technē is intertwined with learning. As Dewey (1916/2004) describes the problematic learning situation, “we simply do something, and when it fails, we do something else, and keep on trying till we hit upon something which works, and then we adopt that method as a rule of thumb measure in subsequent procedure” (p. 139). Dewey (1933/1998) refined this reflective thinking process, which lies at the heart of technē into a scientific-like method. At first, Dewey’s refinement appears to be an application of science, but I suggest that it may also be characterized as an iterative act of designing. It is important to recognize that Aristotle’s conception of physis and its relation to technē may not be strictly understood as a modern scientific sort of understanding of nature, then, subsequently applied in technological terms.

In Aristotelian terms modern science reduced our understanding of the world to efficient causes. It is knowledge of the forces that bring about changes in the world then applied in the forms we give our material resources in order to achieve our purposes. This modern view of understanding the world, and making our own worlds is a radical disintegration of the connected causes Aristotle imagined. In the Physics Aristotle (1929/1970) discusses the close relation of physis and technē:

In any operation of human art, where there is an end to be achieved, the earlier and successive stages of the operation are performed for the purpose of realizing that end. Now, when a thing is produced by Nature, the earlier stages in every case lead up to the final development in the same way as in the operation of art, and vice versa ... The operation is directed by a purpose; we may, therefore, infer that nature process was guided by a purpose to the end that is realized. Thus, if a house were a natural product, the process would pass through the same stages that it in fact passes through when it is produced by art; and if natural products could also be produced by art, they would move along the same line that the natural process actually takes. We may therefore say that the earlier stages are for the purpose of leading to the later. Indeed, as a general
proposition, the arts either, on the basis of Nature, carry things further than Nature can, or they imitate Nature. If then, artificial processes are purposeful, so are natural processes too. (p. 173)

For Aristotle the processes of art and nature were one and the same. At the interface between art and nature, was the productive process of mimesis, commonplace in antiquity. The Florentine humanist Alberti (1485/2004) and architect writes in *On the Art of Building*, “the most expert artists among the ancients ... were of opinion that an edifice was like an animal, so that in the formation of it we ought to imitate nature” (p. 63). Similarly, the Roman Architect Vitruvius (1914/2008) writes:

The columns of the upper tier should be one fourth smaller than those of the lower, because, for the purpose of bearing the load, what is below ought to be stronger than what is above, and also, because we ought to imitate nature as seen in the case of things growing; for example, in round smooth-stemmed trees, like the fir, cypress, and pine, every one of which is rather thick just above the roots and then, as it goes on increasing in height, tapers off naturally and symmetrically in growing up to the top. Hence, if nature requires this in things growing, it is the right arrangement that what is above should be less in height and thickness than what is below. (p. 174)

Here, with this ancient notion of mimesis we make a historical connection to Bowers’ (2005) suggestion that what is missing in curriculum design “is how to utilize the design processes in nature” (p. 75). But, the question that arises is what exactly are the design processes in nature? The problem with this question as Aristotle’s conception of nature makes clear is that our understanding of nature is our own construction. Our conceptions of ‘nature’ and ‘the natural’ are our own acts of technē. Curiously, technē has also historically marked the boundary between nature and human culture, as is the case with Aristotle. We define physic by way of technē and distinguish what is physic by defining it as something other than technē. Our development of the modern scientific method of inquiry attempted to step-out side our understanding of the world by way of technē, and in the process reduced our understanding to ever more precise and generalized efficient causes (that is, ‘theories’ and ‘laws’ of nature), but even this belaboured effort remained an act of technē, albeit taken-for-granted. The significance of the relationship between our understanding of the world and technē is technē is a personal form of knowing grounded in experience. Indeed, as Polanyi (1958) has argued, all knowing is personal even the knowledge produced by our modern sciences.
It is intriguing that at the dawn of modern science Galileo Galilei’s seminal book *Dialogues Concerning Two New Sciences* (1638/1991) “begins not with a discussion of physics but with a discussion of design in the great arsenal of Venice” (Buchanan, 2001b, p. 4). The interlocutors—Salviati, Sagredo and Simplicio—in this dialogue commence with a brief discussion about the designs, designing and the intellectual culture of the field of design as exemplified by the arsenal (shipyard) of Venice. However, as Buchanan (2001b) notes, “instead of turning to investigate the human power or ability that allowed for the creation of the instruments and machines of the arsenal of Venice, Galileo turned to an investigation of the two new mathematical sciences of mechanics” (p. 4). Technē as design was not entirely forgotten in the wake of modern science’s emergence, as the industrial revolution made clear; however, our understanding of design in theoretical terms was set aside with the institutionalization of the sciences, arts, and to a lesser degree, the fine arts that occurred in the academy following the work of Galileo and others. That is, design had become a technical not scholarly concern. While design remained a necessary part of the Western civilization project, its close proximity to the realm of the practical put it at a greater distance from a community of inquiry that would provide a rich theorizing. Consequently, to speak of design in modern times terms was to consider it as simply applied science.

Given that the concept of nature is a product of our own understanding, it is also important to acknowledge that our various conceptions of it “have been used to authorize specific models of virtue, power, and distribution” (Atwill, 1998, p. 83). Citing Lloyd (1992) Atwill (1998) observes that the ancient Greeks “invoked the natural to contrast it with the deviant, to justify their own particular attitudes, beliefs and behaviour, including, not least, their prejudices on gender difference and on sexual practices, where what passes for natural to insiders appears to outsiders as all too obviously culturally determined” (p. 83). Clearly, in this example our understanding of nature is not merely phenomenological it is political. For, as Foucault (2012) argues, “truth is not by nature free . . . but . . . its production is thoroughly imbued with relations of power” (p. 60). Thus, in theorizing about the nature of design, I acknowledge there are political implications. Moreover, I disagree with the Greek contrast of nature with the deviant and I also do not assert that my use of Aristotle’s four causes normalizes my theorizing. In fact, in the context of our modern scientific understanding his causes are now deviant.
Reconnecting our modern understanding of design to Aristotle’s pre-modern four causes in this study is my act of reclaiming a theorizing of design lost to the modern applied science focus on the efficient cause. It also returns our theorizing to design’s interconnection with nature. Conceptually speaking, it is first, a recovery of the co-responsibility that exists between the material and form in bringing something forth. Second, it is a recovery of a final cause, or a teleological perspective within our theorizing of design. However, as Heidegger (1977/2008) notes, here, our common translation of Aristotle’s final cause as “aim” and “purpose” is misleading. Rather, what Heidegger argues is “the telos is responsible for what as matter and what as [form] are together co-responsible” (p. 315). Thus, the material relationship with the form is bound by what it will be after production. Third, we reconnect to a conceptualization of the efficient cause, as a bringing of the ‘that,’ as Heidegger puts it, back into relation with the ‘how.’ That is, it is a restoration of technē as personal knowing. In short, technē, now understood as a technological responsibility becomes a form of revealing in design.

Understanding nature and its relation to technē requires the brief consideration of two additional explanatory causes: spontaneity and chance. Aristotle recognizes that not everything is fully or even partially explainable, but rather it becomes what it is through either spontaneous forces, or by chance. What is at stake here is action directed at ends, because what is brought forth may not be what was intended. For instance, a doctor’s interventions may not be the source of healing, but rather the patient’s body may heal itself. Conversely, the cause of a patient’s healing may be incidentally the result of an unintended change of diet. In either case, the doctor’s actions directed at the ends of a patient’s health may have had nothing at all to do in explaining the outcome. While these causes are beyond what is explainable, these indeterminacies represent the space within which technē seeks to discover or invent “means and to ‘exploit’ them—or to administer them more effectively by art” (Atwill, 1998, p. 92).

Chance as it is exploited by technē is closely connected to the concept of time. Chance is temporal. And technē’s exploitation of chance, thus, characterizes it as strategic. The temporal nature of technē makes strategic intervention and invention possible. As a consequence, it makes technē a particular kind of knowing.
'Time' distinguishes philosophy from art. The Greek sense of 'logos' as a 'reasoned account' applies to both epistêmē (philosophy/science) and technē. What is different about these two logoi, however, is their purpose, largely in relation to time. Greek philosophical traditions aimed at defining postulates that would 'hold' regardless of time and place. These 'accounts' remained in the domain of theoria as 'objects' of speculation. The accounts of technē, in contrast, served to enable an intervention—or 'practice'—not to interpret for its own sake. (Atwill, 1998, p. 98)

Time is a constituent part of technē, making it a practice, not merely an interpretation that stands outside of time. Designing is directional, which implies that it is structurally sustainable, or not. Technē as a system-world is not only brought forth in its making, this system-world goes on bringing forth in its structural reproduction.

In reclaiming a pre-modern understanding of how curriculum design can “utilize the design processes in nature” (Bowers, 2005, p. 75), it has become clear from Aristotle that the so called natural world and its design processes that brings itself forth, and the artifactual world we as human beings are bringing forth are interconnected concepts. First, our understanding of nature and its process is a product of our invention. Second, human beings and our processes exist as part of what we denote as nature. We can’t really step outside of our nature to see the world as otherwise. The modern scientific method is a historic attempt to step outside the world that we are embedded within through a mathematical language of explanation, but this conceptual extraction from our life-world has transformed technical rational making into an irresponsibility. Now, what is recovered from the pre-modern resources of Artitotle’s life-world understanding of physis and technē is a responsible understanding. That is, a multi-faceted, co-responsible conceptual framework of understanding technē, embedded within the context of physis, which once elaborated becomes a way to articulate re-conceptualized curriculum design.

6.5. Design Re-conceptualized

Between Aristotle’s (1929/1970) definitions of an art and nature lies an additional concept, what he refers to as “by nature” or “having] a nature” (p. 109-111). The usage of the term nature here suggests a persistent character, or pattern of behaviour describing the attributes of something or someone. It is in this sense of the word that I
shall now synthesize my understanding of the nature of re-conceptualized curriculum design. The preliminary sketch for my re-conceptualization of design is a definition proposed by Buchanan (2001b): “the human power of conceiving, planning, and making products that serve human beings in the accomplishment of their individual and collective purposes” (p. 9). Conceptually, Buchanan’s definition addresses each of Aristotle’s four causes:

1) the creative capacity of individual designers as an efficient cause;
2) the sequence of goals around which the methods of design thinking and practice have taken shape as a final cause;
3) the outcome of the design process in products that serve human beings as a formal cause; and
4) the subject matter of design as found in any of the activities and purposes of human beings as a material cause” (p. 191)

I find Buchanan interesting because his arrival to the world of design came from his studies in the humanities. He played a significant role in shaping the contemporary field, re-conceptualizing it as a liberal art, rather than as applied science. He holds a PhD from the Committee on the Analysis of Ideas and the Study of Methods at the University of Chicago. As Head of Carnegie Mellon University’s School of Design for ten years he led a re-design of their design curriculum, giving it a humanistic vision. A PhD in Design was also established under his leadership. It is also worthy of note that he was an editor of “Design Issues” (a dedicated design journal published by M.I.T. Press) and was President of the Design Research Society from 2000 to 2006. Buchanan is also a particularly intriguing figure in re-conceptualized curriculum terms, because like Schwab Buchanan was directly influenced by Richard McKeon’s neo-Aristotelian thought.

McKeon studied numerous historical periods and diverse branches of both literature and philosophy, with a particular interest in the history of ancient and medieval philosophy (Callahan, 1986). In 1934, McKeon began teaching at the University of Chicago and later became Dean of the Humanities. As Dean McKeon was a central figure in developing the core humanities curriculum at the University of Chicago. He also founded the interdisciplinary Committee on the Analysis of Ideas and Study of Methods, where Buchanan completed his doctoral studies. In addition to writing an influential Introduction to Aristotle McKeon (1947) developed his New Rhetoric as a way to bridge
the methodological gap between the arts and the sciences, and also advanced
philosophic thinking regarding conceptual pluralism. Summarizing McKeon’s significant
contribution, Buchanan (2001a) writes:

[McKeon] combined philosophy and rhetoric, creating an art of
philosophic inquiry directed toward all communication, whether in the
tradition of rhetoricians or in that much wider community of inquiry that
encompasses all of the arts and sciences. (p. 184)

At the University of Chicago, McKeon worked closely together with Joseph
Schwab. Where McKeon gave shape to the humanities, Schwab did the same for the
sciences. The significance of their relationship to the contemporary field of curriculum is
that according to Null (2011), “Schwab’s efforts to move the curriculum field toward pre-
modern conceptions of curriculum owe much to the rhetorical and philosophical force of
McKeon” (p. 170). Schwab’s (1969) ground-breaking ideas presented in “The practical”
(J. Schwab, 1969) were clearly influenced by McKeon and his ideas.

Schwab’s (1969) critique in “The Practical” initiated a re-conceptualization of the
field where technical “how to” curriculum problems were reframed in terms of “why” they
were problematic. Schwab identified a profound disconnect between the curriculum
designer’s concern with solving problems and his or her understanding of why a given
curriculum situation was, in fact, problematic. His proposed solution to this problematic
situation was to bring the relationship between the designer and the problematic
particulars of authentic study-teaching situations back into focus:

The materials of a concrete curriculum will not consist merely of portions
of ‘science,’ of ‘literature,’ of ‘process.’ On the contrary, their constituents
will be particular assertions about selected matters couched in particular
vocabulary, syntax and rhetoric. They will be particular novels, short
stories, or lyric poems, each for better or worse, with its own flavor. They
will be particular acts upon particular matters in a given sequence. . . .
Above all, the supposed beneficiary is not the generic child, not even a
class or kind of child out of the psychological or sociological literature
pertaining to the child. The beneficiary will consist of very local kinds of
children and, within the local kinds, individual children. (Schwab as cited
in Westbury & Osborne, 2001, pp. 73-74)

Commenting on the passage above, Westbury and Osborne (2001) write,
“Instincts of this kind have through all of his career as a teacher and a scholar driven
Schwab inward to this classroom, to a careful analysis of the characteristics of the students he had this semester, and always to a concern with the here-and-now of the next class, in this course, in this programme” (p. 74). Schwab, influenced by McKeon (and his New Rhetoric), reconnected curriculum’s design with: 1) “the idea of culture and its elements” 2) the “development of an understanding of what was problematic in the culture and on the nature of changes that have taken place in the manner in which cultural elements are seen and experienced” and 3) “the person experiencing, and seeking to resolve, problems given by culture” (p. 75). Similarly, Schwab relocated curriculum within Dewey’s earlier notion of democratic community, grounded in rigorous reflective (scientific) reflection—rational (intersubjective) criticism and (pragmatic) experimentation (to assess the worth of ideas or practices).

Schwab’s insights brought about a rupture in the field that thereafter produced various and differing curriculum discourses. What became “interesting” to curricularists “[was] how [one’s] life history, politics, gender, race, and theology have come together in complicated ways to make a problematic situation” (Pinar et al., 1996, p. 8). Interest in this re-conceptualized understanding of problematic curricular situations generated a vast array of contemporary curriculum discourses, notably, political, racial, gender, phenomenological, post-structuralist and postmodern, autobiographical and biographical, aesthetic, and theological ones. The preceding conception of curriculum as a plan, and curriculum design as a planning process, was replaced by a notion of curriculum as lived-experience, and design as discourse.

In a similar fashion to Schwab, Buchanan also draws upon McKeon’s reimagining of Aristotle’s pre-modern ideas to re-conceptualize our understanding of design, shifting the definition and understanding of design from an application of science to the human experience making our world. In this way Schwab and Buchanan form the two branches of my re-conceptualization of curriculum design, which connect together in the pre-modern context of Aristotelian design ideas conceptual intersecting in McKeon.

Building upon Buchanan’s preliminary definition of design I shall similarly describe my re-conception of curriculum design in four parts: 1) the human agency that brings forth something, notably, curriculum; 2) a sequence of potential ends that
something moves towards; 3) a formal outcome, or system-world, that serves human beings; and 4) something that is produced from the resources of human life-worlds.

6.5.1. An Efficient Understanding

As the human agency that brings something forth, re-conceptualized designing points to “a primary human function similar to thinking and feeling” (Love, 2002, p. 359). Consequently, when we consider the question of who designs the answer, as Simon (1996) posits, is “everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (p. 111). Simon supports his claim by demonstrating that “the intellectual activity that produces material artifacts is no different from the one that prescribes remedies for a sick patient or the one that devises a new sales plan or a social welfare policy for a state” (p. 177). Design, so construed, emancipates itself from a narrow notion of mere determination of production and instead implies an underlying abstraction of thinking—design thinking. Moreover, Simon also argues that this “design thinking” is core to most, if not all, professional education; thus, the implication is “schools of engineering, as well as schools of architecture, business, education, law, and medicine, are all concerned with the process of design” (p. 177).

As an active form of thinking “aimed at changing existing situations into preferred ones” (Simon, 1996, p. 111) re-conceptualized design is an ends seeking creative capacity, but it is not merely instrumental. While design thinking was conceptually reduced by modernism to technical rationality, re-conceptualized design thinking can be understood to be a reflexive action of intentional operation, which seeks to resolve the natural tension generated by the gap that exists between our understanding of the world as it is and our envisaging of the world as it could be. This process then folds back on itself, creating solutions out of the generation of its own problems. I first encountered this concept of creative tension in my study of Senge (1990a, 1990b) who described the idea as the gap generated between reality (what is) and vision (what could be). Senge (1990b) found his inspiration for this concept from Martin Luther King, who wrote, “Just as Socrates felt that it was necessary to create a tension in the mind, so that individuals could rise from the bondage of myths and half truths . . . so must we . . . create the kind of tension in society that will help men rise from the dark depths of prejudice and racism”
(p. 9). While King’s intention is societal change, and Senge’s intention is organizational learning, both reflect the universality of our creative capacity to think designerly.

As an action of human agency, experienced both individually and socially, design thinking can be understood as text. That is, re-conceptualized design is fundamentally discursive. As a matter of language design thinking, according to Schön (1983) can be considered “as a conversation with the materials of a situation” (p. 78). The primary material is a language of some form, whether a model, drawing, or words, the designer “shapes the situation, in accordance with his [or her] initial appreciation of it, the situation ‘talks back,’ and he [or she] responds to the situation’s back talk” (p. 79). In response to the situation’s back-talk, Schön goes on to suggest that the designer “reflects-in-action” in regard of the designer’s definition of the problem, model of the phenomenon being considered, and the proposed solution to the problem implicit in the designer’s moves.

Re-conceptual design thinking is not merely a creative capacity, but it is a discursive text brought forth by a design that goes on designing. I have argued, text is a technologizing of the word (Ong, 1982) revealed in the origin of the word ‘text’ which came into English from the Latin word textus, which meant a woven fabric, and is derived from the verb texo, to weave or construct with care. Design thinking as text is a technologizing of the word that talks back to how we as designers think. Fry (2012) argues that recent paleontological work demonstrates that our design thinking is a “cutting edge” (Pratt, 1987, p. 152) shaping the fabric of human thought, which runs back to the design of tools use by early humanoids. Summarizing Fry’s (2012) paleontological argument, Tonkinwise (2014) writes:

Research suggests it is not that primates first evolved the intelligence that then allowed them to begin to make their own tools (beyond making use of that which was lying about affordantly); rather, tool use by primates altered the nature of their evolution toward increased intelligence. This means that human intelligence is not primary and distinct from the mere application of that intelligence in designing. Rather, human intelligence is inseparable from design; it is something that is the result of designed artifacts, environments; it develops in the new worlds made possible by those supplements” (p. 119)

The fact that human intelligence is inseparable from design points to the reflexive nature of design as an architectonic art. Aristotle, according to McKeon (1987) uses the
Greek word *architecton*—which loosely translates as “master artist”—to describe how the practitioner of an art exists on two different levels. The first level is that of technician, or user of an art characterized by one who only knows the art’s form and function. The second level is that of architecton, which denotes broader responsibilities. This second existence is characterized by the productive knowledge of making and knowing the material matter of design in addition to its form and function. “In Aristotelian terms,” Backman comments (1987) the architecton is one who “commands the four causes” (p. xxii). His term “commands” is a little heavy handed, but it expresses the notion that in re-conceptualized design, there is an understanding of design as a coming together of all its causes in a pre-modern Aristotelian sense. However, it is more of a co-responsible responding than commanding.

A second characteristic of an Aristotelian architectonic art is that it is an art of doing. Moreover, it is a superordinate act, in that its ends rest in ordering the ends of other arts. For Aristotle, writes McKeon (1987) “prudence is architectonic with respect for doing, . . . art is architectonic with respect to making, and the architectonic art of making is rhetoric, in so far as rhetoric is an art of thought” (p. 4). Consequently, rhetoric becomes “an art of structuring all principles and products of knowing, doing, and making” (p. 2). Rhetoric as McKeon transforms it becomes the technological articulation of productive thinking, which underlies the practical and the theoretical. That is, understood in terms of our age of technology the disjunction to be removed “is the separation of theory and practice by the constitution of a technology which is theory applied, the logos of *techne*” (p. 13). The significance of McKeon’s work in my re-conceptualized understanding of design, specifically as it relates to our discussion of curriculum design, is the notion that the productive is “practice is theoretical” (Pinar et al., 1996, p. 586)

Rhetoric re-conceptualized in technological terms, as the basis of design thinking, is an art of discovery and invention. It is an art of revealing and bringing forth the made world, not merely in terms of words, but as the productive thinking that brings forth anything new. Commenting on McKeon’s revival of Aristotle’s formative conception of rhetoric as a architectonic art, Backman observes (1987):

[Architectonic] rhetoric is more than an expressive art; it is an organizational principle that provides the framework within which we can
reveal and arrange the significant parts of any human undertaking. Ideas expressed in structures developed to guide action—political communities, educational systems, business enterprises—as well as in the artifacts of literary or artistic creativity. Language is still an effective tool, but it follows from the creation of new ways of conceiving and acting upon change. (p. xx)

The critical design insight that we might draw from McKeon’s New Rhetoric is that understanding and creating are co-joined abilities. Thus, design thinking expressed technologically as a architectonic discourse may be understand as a capacity to problematize the world by bringing forth iterative tensions and resolutions between the world as it is and as it could be through technological revealing and inventing.

Building on McKeon’s New Rhetoric, Buchanan (1992, 1995, 2001a) utilizes its conceptual structures to redefine design thinking. He expresses design thinking as a set of five rhetorical abilities: inventing, judging, deciding, evaluating, and expressing. These abilities or disciplines, in turn, correspond with five intellectual virtues.

Designers should be (1) curious and inventive beyond the bounds of specialization in addressing design problems; (2) able to judge which of their inventions are and which are not viable constructs in particular circumstances and under given conditions; (3) able to participate with others; including ... specialists from many fields, in decision-making processes which develop [curriculum] from conception to [implementation] . . . ; (4) able to evaluate the objective worth of [curriculum designs in terms of the needs of educational institutions, educators, learners,] and society at large; and (5) able to embody ideas in appropriately expressive forms throughout the process of conception and planning. (Buchanan, 1995, p. 46)

These intellectual virtues derived from the oratorical tradition of rhetoric characterize the ongoing virtues of re-conceptual design thinking. The conceptual connection between rhetoric and design thinking is an important one, and it opens up numerous avenues for future exploration. My intention for this present study is not to elaborate upon these connections, but rather to simply identify the linkage. Indeed, my intent, here, is to synthesize a conceptual whole that represents my reclaimed understanding of design. Nevertheless, I do believe it is in rhetoric, as the architectonic art of making, where we find the most clear historic articulation of design thinking, as an architectonic text that inscribes curriculum making. This is, perhaps, most clearly evident
In education, architectonic rhetoric organizes the entire curriculum of study as well as courses in writing, reading, and speech. Rhetoric has always been associated with systematic education. Cicero’s insistence that an orator be schooled in philosophy was intended to guarantee that the power to move men to act would derive from a knowledge of the nature and consequences of right action. The wise man who cannot speak is seldom helpful, he warned, and the eloquent man who lacks wisdom is always danger. Augustine sought to empower the Christian preacher to discern the truth among the flawed signs and ambiguous terminologies, analogies, parables, and examples of Holy Scripture by means of an interpretive rhetoric that organized learning and life in the Christian world. In the Renaissance Peter Ramus laid out several disciplines in his rational system of education. Although he formally assigned style to rhetoric and placed invention under logic, the unifying framework for his division of the sciences is based on the five Ciceronian parts of rhetoric. (p. xxvi)

The rhetorical roots of curriculum design thinking are important for two reasons. First, as a re-conceptual curriculum designer, seeking to understand the nature of curriculum, I must be mindful that, as Jackson (1992) argues, all conceptions of curriculum are “rhetorical structures” (p. 12), which “attempt to persuade us to conceive of curriculum in particular ways” (Pinar, et al., 1996, p. 28). Second, in my own making of curricular texts, it is the rhetorical structures that shape my conception of curriculum and go on designing the curricular texts that I make, both as pieces of writing, and as the lives of the students and educators inscribed by the institutional texts I make. Moreover, any given course of study is composed of multiple layers of rhetorical structures expressed in various forms all attempting to persuade me as educator and also my students in particular ways.

In sum, curriculum design re-conceptualized is a way of thinking about making curriculum as design thinking. It is an architectonic art—a thinking practice of making curriculum—characterized by Schön’s reflective practice and McKeon’s New Rhetoric. Curriculum design thinking is a generative capability to problematize the world of curriculum by bringing forth iterative tensions and resolutions between the world as it is and as it could be through a technological revealing and inventing. It is a technological
discourse that talks back to itself, bringing forth both curricular ends and means in dynamic relation to each other. This generative dynamic is the realm of re-conceptualized curriculum design’s final understanding, to which I now turn.

6.5.2. A Final Understanding

As a sequence of potential ends that something moves towards, re-conceptualized designing is a co-evolution of problem and solution. That is, contemporary design discourses suggest that designing is a co-evolution of understanding the life-world and creating the system-world to support the life-world. Studies by Dorst and Cross (2001) suggest that understanding an existing situation is critical to creating a preferred situation. Moreover, it seems that designing is not simply a process of defining a life-world problem and then searching for a system-world solution. Rather, Dorst and Cross argue that “it seems more to be a matter of developing and refining together both the formulation of a problem and ideas for a solution, with constant iteration . . . between the two notional design ‘spaces’—problem space and solution space” (p. 434). This iterative co-evolution of design is an emergent bridge building between two unstable conceptual spaces.

In re-conceptualized design understanding is not separated from creating, but rather, as Schön (1987) argues, the designer’s “practice is researchlike” where “means and ends are framed interdependently in his [or her] problem setting” (p. 78). It is a reflective practice that draws upon the lived experience of the designer to make sense of a situation and to imagine how it might be different. The crucial ability here is an insight that Schön (1983) first referred to as naming the problem and (re)framing it for action.

As [the designer] frames the problem of his [or her] problematic situation, he [or she] determines, the features he [or she] will notice, the order he [or she] will try to impose, the directions in which he [or she] will try to effect change. In so doing, he [or she] identifies both the ends to be sought and the means to be employed. In the ensuing inquiry, his [or her] problem solving is part of a larger experiment in problem solving. (p. 78)

In naming and framing the problem for action, “the final outcome of designing has to be assumed before the means of achieving it can be explored: the designers have to work backwards in time from an assumed effect upon the world to the beginning of a
chain of events that will bring the effect about” (Jones, 1992, p. 10). That is, to solve a
design problem, even a stable one, involves predicting a course of action that will initiate
a change of conditions and judging if these new conditions are indeed preferred to those
of the existing situation. As a result, the designer must remain sensitive to the ends in
the course of experimenting with different means, changing the original ends to equally
satisfactory ones that are more compatible with preferred means. The often distant and
strong dependencies between the ends and the means within a problematic design
situation “make it difficult to design without much back-tracking and circularity” (p. 10). It
is the adaptability of the designer’s imagination that allows him or her to intuitively
resolve the dynamic relation between design’s beginning and end states, changing both
ends and means to resolve incompatibilities.

The creation and projection of the world as it could be upon the designer’s
understanding of the world as it is, and devising how the later state may be transformed
into the former within his or her imagination is what the ancients called determination—
the “bringing forth into visible presence something envisioned in advance by what is
sometimes called, in a later idiom, the mind’s eye” (Sallis, 2000, p. 138). Design involves
foresight, a prior vision of form, function and matter of that which is to be produced, “a
vision that is precedent to and directive for the bringing forth of something made to look
like what will have been seen in advance” (p. 138). However, in the case of designing it
might be more accurate to describe this “bringing forth” as the “mind’s hand, since its
operation is to draw the horizons forth, to withdraw them and in its drafts to span the
expanse of the interplay” (p. 138). Brann’s (1991) comprehensive study on the matter
makes it clear there are many different and sometimes contradictory definitions used
across various fields of study. First, she suggests that imagination is most often “linked
with having a mental image in one’s head” (p. 23) as in the mind’s eye. However, in the
second place, she notes it is also often “associated with invention, originality, or insight”
(p. 23), which reflects the notion of the mind’s hand making and revealing.

A third common understanding of imagination Brann (1991) identifies has “to do
with false belief, delusion and mistakes in memory,” or similarly, “deliberate pretending
and make-believe” (p. 23). While the idea most closely associated with design is Brann’s
second definition of imagination, it is important to problematize design’s association with
imagination, because as Sallis’ (2000) observes, “imagination remains at the limit of philosophy” (p. 44) for it seemingly lacks an itself and in this sense resists definition of what it is. What is important to grasp, here, is that this faculty, power of the soul, or elemental force that we have named imagination allows designers to engage with the world in such a way that something new is made known, something that we might otherwise not have noticed. Moreover, imagination seems to be a way of thinking about thinking that dissolves the elevated status of the intelligible over the sensible. For, as Sallis (2000) observes, “imagination is, at once, both originary and memorial, its delimitation requiring precisely a hovering between opposed determinations, turning it back, in self-determination, upon itself” (p. 138). It is by this means of hovering between determinations that are at once memorial and originary that I believe designers are able to, “extrapolate from past behavior, in the presence of existing designs, to future behavior, in the presence of new ones” (Jones, 1992, p. 9).

The imaginative generation and resolution of the creative tension between the world as it is and as it could be makes designing an act of learning. Solving a design problem involves the designer’s movement “from the ignorance-of-the-new, with which one begins, to the knowledge-of-the-new, with which one ends (‘knowledge of what the problem really is’ as well as of solutions)” (Jones, 1992, p. xxv). In this way design is, itself, an act of curriculum designing. That is, design involves the designer’s design of his or her own course of study in the process of coming to understanding a problem space and, then, bring forth a solution. To design is to design one’s own curricular design.

It is not a curriculum with set ends, and instrumental means, but emerging ends and responsive means. As Jones (1992) puts it, whatever a designer may choose to do, she should choose a method that helps her make sense of what she doesn’t know, but needs to know, in order to proceed. In this way, the process of designing something new may be understood as the designing of an emergent curriculum one undertakes in order to complete the design. The chosen methods brought to bear in any particular situation may be diverse and contradictory, so long as each method contributes in sequence, or in parallel, to making sense of what is not known in order to proceed to a preferred future that is still yet to be known. Equally important, any future convergence itself remains
open to change in the course of designing—that is, the life-world and system-world will co-evolve.

There is a second sense to this understanding of re-conceptualized designing as learning. Jones (1992) observes, “we are all people whose pasts give only misleading ideas of ‘how to live with our designs’” (p. xxv). Jones’ insight, here, is that we change with our designs. As a consequence of moving towards imagined ends, design clears some ground in the state of the world as it is. The technological irresponsibility of a design, such as Tyler’s Rationale in curriculum, is that what is lost is not acknowledged, or perhaps even recognized. Thus, while I acknowledge the importance of problem naming and (re)framing it for action, I am also suggesting that this co-evolution of understanding and creating is not action based solely in reflection, but action that constitutes re-directive practice. The defining characteristic of re-directive design practice is that in its bringing forth something it “acknowledges the imperative of dealing with ‘what already is’ and turning it towards the future with sustaining ability” (Fry, 2011, p. 77).

Re-directive design stands on dialectic ground. As a practice, design both structures and is structured by the world it makes and by the world by which it is made. To understand the nature of this contradiction, we must recognize that we arrive in a world transformed by design. This is a history that begins with the unique plasticity and flexibility of the human hand, which first affords the human mind with diverse means to act on the structures of the world and to make it arte-factual (human-made). Our first tools as a species were clearly extensions of the hand’s capacity to grab, claw, cup, poke, punch, press, chop, and so forth (Heskett, 2005). And with our first use of these basic tools “we began to form practices that were to structure what we were to become” (Fry, 2009, p. 24). Moreover, not only did the use of tools bring us to the fabricated and damaged world we now occupy; they also acted back on the tool users—“hence these proto-designer/makers themselves became designed” (p. 24). In short, the system-world we have created has over time become increasingly complex and our need for re-directive practices has become more pressing.
Initially, the problem of design practice was that designers “carry out spontaneously” things “we are often unaware of having learned to do” and are “unable to describe the knowing which our action reveals” (Schön, 1983, p. 54). Yet, the deeper problem not revealed by reflective practice alone is that design is not limited to subjective or inter-subjective life-worlds, but is also bound by system-worlds. Our interactions with system worlds are all designed in relation to use, meaning that “design is one of the main operative agents of the social, cultural and economic functioning and dysfunctioning of humanity’s made world” (Fry, 2009, p. 25). Hence design as re-directive practice is a particular type of reflection, a “mode of inquiry ‘that’ seeks to disclose the bias and direction of that which is designed and how it is totally implicated in the world” (Fry, 1999, p. 11). Like McKeon’s reclaimed Aristotelian conception of rhetoric as an architectonic art, design is not only directive towards ends, but responsive to what ends are in fact being brought forth as an act of sustainment. Thus, as a type of reflection, re-directive practice acknowledges that “the future is never empty, never a blank space to be filled with the output of human activity,” but rather “already colonized by what the past and present have sent to it” (pp. 11-12). It is a form of reflective inquiry that de-constructs the history of designing and designs as a history that continues to act with an agency that de-futures. And it is this notion of reflection as de-futuring that sets it apart from what came before, making it clear that nothing arrives without transformative force and that “creation is ever co-joined to destruction” (1999, p. 52).

De-futuring as a form of reflective inquiry that takes responsibility for what it is creating and what is lost enables us to see otherwise, and in this way it also enables us to act otherwise. It is not simply a matter of naming the problem and re-framing it for action, but a way of action that understands “how the values, knowledges, worlds and things we create go on designing after we have designed and made them” (Fry, 1999, p. 12). To begin with, “without a knowledge of defuturing, from the perspective of Design, we have little comprehension of what designs, the agency of the already designed or the consequences of designing” (p. 12). However, with this in mind, “de-futuring” as re-directive practice becomes a reflection-in-action that is projected forward—“a phenomenology of the yet-to-be” (p. 285).
In curriculum terms, the life-world context, or niche, that Tyler’s system-world designs emerged within have over time become de-coupled from the contemporary life-worlds of study and teaching. In Habermasian terms, these Tylerian systems have come to colonized the curricular life-world. As a result, the task of the curricula designer is now an act of decolonization. It is also a far more complicated task than merely clearing ground colonized by the system-world brought forth by Tyler’s Rationale, but rather a continuous responding to a co-evolving life-world and system-world we bring forth as designers. Thus, in the course of my designing my intention is to empathetically inhabit and carefully respond to the tensionality of the place in-between. A prototype for this tensionality in curriculum design is articulated by Aoki (1986/2005).

For curriculum [designers] who understand the nuances of ... indwelling ... in the Zone of Between, the challenge seems clear. If, as many of us believe, the quality of curriculum-as-lived experiences is the heart and core as to why we exist as [curriculum designers], curriculum [design] should have as its central interest a way of contributing to the aliveness of school life as lived by teachers and students. Hence, what authorizes curriculum [designers] to be curriculum [designers] is not only their expertness in doing tasks of curriculum [design], but more so a deeply conscious sensitivity to what it means to have a [designer’s] touch, a [designer’s] tack, a [designer’s] attunement that acknowledges in some deep sense the uniqueness of every [curricular] situation. Such sensitivity calls for humility without which they will not be able to minister to the calling of [curricula designers] who are themselves dedicated to searching out a deep sense of what it means to educate and to be educated. To raise curriculum [design] from being mired in a technical view is a major challenge to curriculum [designers] (p. 165).

The critical design insight Aoki (1986/2005) raises above is the importance of the fit between a curricular form, or system-world, and “the uniqueness of every teaching situation” (p. 165). The empathetic intentionality that is called for here is not merely a structural understanding, but a temporal one. That is, our present understanding of the life-world exists within a reproducing social system-world, where the structurally unsustainable is normalized. As a project and condition of sustainment re-conceptualized design seeks to make the process of making time normative (Fry, 2011).

In sum, as a sequence of potential ends that something moves toward re-conceptualized curriculum design is a re-directive practice. It is a futuring act that seeks to eliminate things that do not sustain authentic human learning and create new
possibilities in the ground of everyday curriculum through a consideration of how designs de-future. Realizing these futuring potentials requires the sustain-able co-evolution of understanding curricula life-worlds and creating responsible system-worlds through a co-intentional conversation with the materials of the situation. In short, re-conceptualized design framed as an Aristotelian final understanding, is a sustainment of a closeness of fit in space and time. The form this fit takes is the understanding I turn to next.

6.5.3. A Formal Understanding

As a formal outcome, or system-world, that serves human beings, re-conceptualized designs are the products that makers make. In Notes on the Synthesis of Form, Alexander (1964) argues that what is ultimately made by design is form. He defines form generically as the “part of the world over which we [as designers] have control, and which we decide to shape while leaving the rest of the world as it is” (pp. 18-19). The general design problem is an effort by the designer to achieve a high degree of fitness (that is, a relation of mutual acceptability) between the form and its context, where context is “anything in the world that makes demands of the form” (p. 19). To speak of design artifactually, in Alexander’s terms, is to speak of an ensemble made up of both the context, which defines the problem, and the form that is the solution. Moreover, he suggests that good design depends on the degree to which the form fits the whole ensemble. For instance, when you select a pair of socks to wear in the morning, you ask a simple design question, “Do they fit with my overall clothing ensemble?” Or, is there a misfit in some aspect of the pairing, such as, a colour mismatch? If no misfits exist, then, it is a good design in the sense that it fits its context well. A classic example of a good fitting form is the way Frank Lloyd Wright’s Fallingwater residence (the form) sits “naturally” in relation to its rural Pennsylvania site (the context) without sign of incongruitities, or irritants that would cause a misfit.

In recent years conceptions of form in the field of design have shifted from the material artifacts of an industrial system-world to a post-industrial system-world that is fluid, indeterminate, immaterial, and virtual (Krippendorff, 2006). Design history has followed a trajectory of conceptual shifts that began with a notion of the system-world understood in terms of universal utility, functionality, and aesthetic and now moves
toward a conception of system-world as discourse. Within the span of these recent shifts, “the causal models of a uni-verse—a single version of what is—are [being] replaced by linguistic models of how multi-verses come to be and are maintained” (p. 12). It is a new view of a design as a system-world that:

moves from the belief in technological determinism—the conviction that technology develops autonomously and by its own logic—to the belief in the artificiality of the world, a world that is continually constructed, re- and de-constructed, and contributors to that process are awarded but also held responsible for what they do (p. 13).

What is the form curriculum design takes? Simply put, it is textual. Pinar et. al (p. 48) theorize that curriculum as text “implies both a specific piece of writing and much more broadly, social reality itself” (p. 48). The author’s conceptual basis of this understanding is that the notion of “text implies that all reality is human reality, and as human reality, it is fundamentally discursive, a matter of language” (p. 49). For instance, the educative text of one’s lived-experience may be understood as the person’s dialogue with his or her experience (Grumet, 1975). This dialogue is not merely subjective, but as a shared life-world experience it is also intersubjective—a dialogue with other’s experiences. Notably, it is a dialogue between a student and an educator, either directly with the educator, or by proxy through a mediated form, such as a piece of writing, or a spoken recording.

Now, while text is clearly the form the curriculum takes, following Alexander’s insight it stands in relation to its context. Earlier I wrote that the origin of the word ‘text’ is the Latin word textus, which meant a woven fabric, and is derived from the verb texo, to weave or construct with care. I suggested this etymology pointed to the system-world nature of text. Similarly, the word ‘context’ is derived from the Latin word contextus, which appends the Latin term prefix con—meaning together—to textus. Taken together the term denotes something that is woven together. Or, understood in verb form is a weaving together. Curriculum design, formally conceptualized, is an ensemble of system-world texts woven together with the life-world contexts of study.

At the individual learner level of analysis the curricular text as a lived experience is a particular autobiographical narrative that unfolds in time. The primary context with
which this curricular text becomes an ensemble is, first, the learner’s own life-world of study wherein they are in dialogue with their experience, second, their shared life-world of study wherein they discourse with others, and third, the artifactual and natural surrounding world with which they interact. Following Dewey’s (1902) metaphor of curriculum as a journey and a map, we can conceptually map out the temporal journey of the learner’s lived-experience spatially as the terrain that has been traversed. This reflective act of mapping is initially retrospective, however, once this text is then projected on the present it holds futural potentialities. That is, as an arranged and orderly “summary” of “previous experiences” this map “serves as a guide to future experiences” (p. 284). In its simplest expression curriculum’s form is experience projected upon experience. That is, it is essentially an elaboration of the scholarly apprenticeship relationship, and by extension all other forms of apprenticeship.

In contemporary education this elementary and clearly ancient form of curriculum design is still evident in the dyadic relationship between a graduate student and his or her supervisor, before the status of doctorate is conferred upon the student collectively by the institution. Recently apprenticeship has become commonly associated with technical professions, however, as Adam Smith (1822) writes in The Wealth of Nations, the idea is inclusive of professional scholarship.

Seven years seem ancienly to have been, all over Europe, the usual terms established for the duration of apprenticeships in the greater part of incorporated trades. All such incorporations were ancienly called universities; which indeed is the proper Latin name for any incorporation whatever. The university of smiths, the university of tailors, [etc.] are expressions which we commonly meet with in the old charges of ancient towns. When those particular incorporations which are now peculiarily called universities were first established, the term of years which it was necessary to study, in order to obtain the degree of master of arts, appears evidently to have been copied from the term or apprenticeship in common trades, of which the incorporations were much more ancien. As to have wrought seven years under a master properly qualified, was necessary in order to entitle any person to become a master, and to have himself apprentices in a common trade; so to have studied seven years under a master properly qualified, was necessary to entitle him to become a master, teacher, or doctor (word ancienly synonymous) in the liberal arts, and to have scholars or apprentices (words likewise originally synonymous) to study under him. (pp. 185-186).
The apprenticeship pattern suggests the basic form of curriculum design is a life-world reflection, projected as system-world. The master’s curriculum vitae, or course of life, is projected upon the apprentice as a course to be studied. This is a system-world projection in the sense that it is an inscription of the master’s experience as text, subsequently, experienced by the apprentice. The essential shape of this system-world can be characterized as three generalized textual forms. First, the ensemble is composed of *aspirational texts*, describing the student's known world as it is intended to be—a futuring. That is, as a projection of the form of previous experience inscribed upon new experience it is a description of aspirational intentionality of a known world as it could be. Second, are *transformative texts*, the textual becomings of the student's known world. This is the student's working out in the world what they know, what they can do, and who they are as a being-in-the-world they are co-creating with others. This form may in part also serve as inscriptions of judgement, and also serve to define a student's world of knowing, doing, and making as a design problem—a de-furturing—framed for their own re-directive action. Third, are *revealing texts*, the textual resources exposing the student to what is known about the world that is his or her subject of study. This is a collection of texts exposing the student to the collective knowledge of what is being studied, including theoretical knowing, practical doing, and productive making.

There is also an intuitive projection at play in the scholar/student apprenticeship pattern, which suggests there is a felt co-intentionality between two idiosyncratic life-worlds in close relationship to each other. It may, or may not, be an equitable co-creation, nevertheless, as a dialogue between persons the essence of curriculum design is an emergent form shaped by the particular contingencies of the shared life-world context. The form is not static, but rather is a co-evolution of two unstable design spaces—problem space and solution space. This dynamic co-evolving of curriculum forms can be characterized as rich, recursive, relational, and rigorous deliberative discourses (Doll, 1993). I suggest there is a conceptual confluence here between the mathematical and scientific process perspective of Doll’s (1993, 2008) theorizing and Reid’s (1999) rhetorical philosophic theorizing—a reuniting of Schwab’s (1969) formative integration, shaped by McKeon’s conceptual restoration of this pre-modern unity.
The richness of these deliberative discourses refers to forming “a curriculum’s depth, to its layers of meaning, to its possibilities or interpretations,” which arise from the “problematics of life” (Doll, 1993, p. 176). Doll adds, “the problematics, perturbations, possibilities inherent in a curriculum are what give the curriculum not only its richness but also its sense of being, its dasein” (p. 176). Curriculum design remade is the problematization of curriculum. The recursive nature of re-conceptual design’s co-creative discourses is the reflective transformation of thoughts looping back on themselves in dialogue with others. It is through recursion that a curriculum design iterates, not merely as a repetition, but as an emerging transformation. It is also through recursion that re-conceptual design competency is developed—“the ability to organize, combine, inquire, use something heuristically” (p. 178). The relational characterization of these discourses refers, first, to pedagogical relations, or the forming of “connections within a curriculum’s structure which give the curriculum its depth as this is developed by recursion” (p. 197). And, second, relation refers to the cultural relations that give this discourse its narrative and dialogic shape. Narratively speaking, cultural relations “bring forward the concepts of history (through story), language (through oral telling), and place (through a story’s locality)” and dialogue “interrelates these three to provide us with a sense of culture that is local in origin but global in interconnections” (p. 180). Recursion also gives re-conceptualized design its temporal shape as illustrated by currere. Doll (1993) notes that “recursion . . . is derived from the Latin recurrere (to run back)” which implies “recursion is allied with currere (to run)” (p. 184). Lastly, rigor refers to the purposefulness of “looking for different alternatives, relations, connections” (p. 182) and it also, means surfacing the assumptions we make in our interpretations. The intent of rigor, here, is not the narrow scientific rigor promoted by modernity, but rather a restoration of the deeply felt pre-modern “perceptions and conceptions” (p. 182) that characterize our study as lived-experience. Rigorously seeking out possibilities and at the same time rigorously revealing what we really are thinking makes the dialogue of co-creating re-conceptual curriculum designs “meaningful and transformative” (p. 183). In addition, rigorous discourse in re-conceptual design is also an intentional mixing of “determinacy and indeterminacy” critical to a goodness of fit between the form of the curriculum and the many contexts of lives of students and teachers who experience it.
What makes for a good fit between the texts and context? Alexander (1964) proposes that a good fit is simply the absence of misfits within the boundary of an ensemble. That is, the boundary between the curricular texts brought forth by design and the lived-context of student and teacher lives that the texts are being brought forth both from and for. Alexander conceptualizes the designer’s work of achieving good fit, “as a negative process of neutralizing the incongruities, or irritants, or forces, which cause misfit” (p. 24). Ultimately it is the definition of the context that will actually determine the form. One implication, as Louis Sullivan (1896) famously put it, is that “form ever follows function” (p. 408). Put in less technical rational terms, we might say that form ever follows context. Now, the question that remains is how? Alexander (1964) makes the critical distinction between two kinds of design methods that may be used to achieve a good fit in an ensemble. One is termed unselfconscious, the other selfconscious.

The unselfconscious kind refers to the methods characterized as what I described as designation-by-making. In this unselfconscious, or craft, process, form is closely tailored to the conditions of use by way of “countless failures and successes of trial-and-error” over vast spans of time (Jones, 1992, p. 19). Given the discursive character of curriculum design this brings us into realm of Habermas’s (1984) communicative action where the legitimacy claims of any given text can be directly contested. The key difference in the selfconscious process is that “trial-and-error is separated from production by using a [symbolic representation or medium] in place of the product as the medium for experimentation and change” (Jones, 1992, p. 20). In Habermasian terms this method represents the rationalization of the life-world in the form of a system-world (that is, curriculum as an institutional text) that speaks on behalf of the life-world. Beyond these points regarding practice, there is also a critical distinction made regarding how each process is learned. Alexander (1964) states,

I shall call a culture unselfconscious if its form-making is learned informally, through imitation and correction. And I shall call a culture selfconscious if its form-making is taught academically, according to explicit rules. (p. 36)

With the main elements of Alexander’s argument in place we arrive at his contention that while the unselfconscious process makes well-fitting forms, the selfconscious process tends to make bad fitting ones. This is a contestable claim, but it
identifies a significant problem faced in design. How can designers institutionalize the trial-and-error adaptations of their craft, while also making more radical (that is, more complex) changes to the form as a whole, without losing an intimate understanding of the context, which allows for a good fit? Historically, in the curricular field, this is exactly the design problem Tyler tried to address. That is, he inquired into how can designers design institutional system-worlds that genuinely support life-worlds, allowing radical changes to be made to a generic form as a whole, without losing an intimate understanding of its context, which is what allows the designer to produce a good fit?

Tyler’s (1949/1969) central proposition in *Basic Principles of Curriculum and Instruction* was for the educator to become more fully engage in a self-conscious and systematic design method of making curriculum. Indeed, his book “is not,” Tyler claims, “a manual for curriculum construction,” but rather a “way of viewing an instructional program as a functioning instrument of education” (p. 1). That is, he designated his design solution as a method for studying the “fundamental questions which must be answered in developing any curriculum and plan of instruction” (p. 1). Thus, Tyler does not attempt to answer these questions, given the situational variance from one educational context to another; however, he does suggest a rationale (that is, an explanation of procedures) by which these questions can be answered. Over time and at scale Tyler’s curriculum design method became problematic—that is, his design’s emergence from the lived-contexts (or life-worlds) of study and teaching became a technological means where curricular form in reality followed fiction, not function. Or put in re-conceptualized design terms, Tylerian institutional texts became contextless.

In the particular contexts of his particular historic practice as a faculty member at Ohio State University (OSU) and later as the evaluation director of the Eight Year Study, and other similar situations, I believe there is evidence that Tyler was genuinely seeking to establish, as a curriculum designer, a goodness of fit between the systems he designed and the lived-contexts he was designing for. However, his, and others, technical-rational decontextualization and reduction of his lived-experiences into a technological device and its social integration as systematization within new social contexts, over time and at scale, increasingly led to misfits between the systems his Rationale brought forth as curricular institutional texts and the life-world environment of
students’ study and teachers’ teaching. Indeed, the contemporary life-worlds of study and teaching and the institutional system-worlds shaped by Tyler’s technological language of curriculum design have, in Habermasian terms, often, become de-coupled. These institutional systems have colonized curricular life-worlds. Thus, re-conceptualized curriculum design is tasked with the decolonization of the life-world. Much has already been written about this project, so I shall not make any further comments. Nevertheless, the pertinent question that arises for my present study is in clearing the ground colonized by Tylerian design what is the form we build in its place?

What is problematic about the institutionalization of curricula texts as maps is their definition and interpretation has typically been less about cartography and way finding, and more about prescribing pathways. The cartographer’s task in making a map is to define what is in a place, and what are the spatial relationships between its features. A map is a representation of a whole landscape. The purpose of the map is to help orient a person within the place it represents, to expose the person to particular features within the landscape that may be of interest to explore, and to guide the person’s navigation from point to point. But, the map does not define where one is, nor specify where to go. This occurs when another person orients one to where they are on the map and marks a route for them to take in order to get to a specified destination. Thus, in the context of institutions, the Tylerian curricula form is better characterized as an image of ‘closed’ pathways through a landscape of subjects than as ‘open’ maps.

These prescribed pathways have a futural intentionality directed at the unfolding of particular lived-experience journeys. The presentation of these textual pathways takes the form of institutional documents, notably, syllabi. The form of these documents is characterized by what Foucault (1972/2011) described as “grids of specification”, that is, as Luke, Woods, and Weir (2012) put into curricular terms, “an institutional structure for mapping human knowledge and human subjects; the divisions and categories used to specify what the curriculum will be at this time and in this context” (p. 6). While contemporary theorizing has given significant consideration to curriculum content and methodology, Luke et al. argue “there has been little interest in or problematizing of the shape, format and form of the curriculum—beyond teachers’ practical notions of use and ease of working with this frame or that” (p. 8). The authors seek to address this
shortcoming within the curriculum field. They argue that the syllabus, as “a descriptive overview of the curriculum” is continuously being confused for the curriculum, which they define “as the sum total of resources—intellectual and scientific, cognitive and linguistic, textbook and adjunct resources and materials—that are brought together for teaching and learning by teachers, students and in the best case community, in classrooms and other learning environments” (p. 10). Moreover, they identify that the source of this common conflation of the syllabus into the notion of curriculum is a consequence of institutions using syllabi as technological devices to control teaching and learning, often resulting in the deprofessionalization of teaching.

As an irresponsible technological device, brought forth by Tyler’s architectonic syllabus, modern syllabi prescribe particular pathways, bringing forth a singular curriculum vitae, or course of life, as a uni-verse. What makes syllabi problematic is that within an institutional context, often in the name of efficiency, it becomes a generic device, as a result of the syllabus designer expunging this text from the life histories and the contingencies of choice that brought them into being in the first place. As Aoki (1986/2005) argued, the Tylerian designer began to speak of his or her students in the prosaically abstract technological design language of an “external curriculum [designer] who [was], in a sense, condemned to plan for faceless people, students shorn of their uniqueness” (p. 160). Consequently, all future teachers and students are bound to these uni-versal course designs as “generalized entities” who are all conceptually generalized “in terms of performance roles” (p. 160).

From an economic and social engineering perspective the Tylerian design approach appears to produce a good fit, but it is only good as a fit between the problem of curriculum-as-plan (as form) and the institution (as context). The problematic consequences of this designing in term of the human beings who make up the life of the institution is that Tylerian design actually produces a truly poor fit between the institutional text and lived-context of individual life-worlds. It need not be this way. The paradox brought forth by the linguistic turn within design is the insight that the way multi-verses come to be and are maintained is to design the ensemble of the institutional curriculum with a looseness of fit between the texts and the contexts. For instance, Luke et al. (2012) characterize the metaphoric distinction that I have made between curricular
form as open maps and closed pathways as a variance in curricular definition, arguing that “high definition, or extremely detailed and enforced technical specifications and low definition, that is less elaborated, detailed and constrained curriculum act as degrees of central prescription” (p. 7). To bring forth curricular multi-verses within an institutional context, sufficient space is necessary for the students and teachers to co-design in respond to the contingencies and indeterminacies of study.

In sum, re-conceptualized curriculum design is a textual form; an ensemble of aspirational, transformative, and revealing texts discursively brought forth by, and made to fit well with the contingencies and indeterminacies of, the lived-contexts of students and teachers. The shape of this form emerges as a responsive text that seeks to create a goodness of fit with the lived-contexts of both students and teachers. As a shared life-world this textual form is intentionally low definition, creating spaces for a multi-verse of forms to emerge as student and teacher co-creations. As a co-creation, each individual textual form seeks a closeness of fit between curricular texts and the student’s lived-context of study. That is, the design of the curriculum as an institutional text can be understood as a form seeking a goodness of fit with its context, which is the multi-verse of student and teacher co-creations. In this way, the institutional form does not merely act to define the life-worlds of students and teachers, but is iteratively defined by them. It is a co-evolution of the co-creative life-worlds of students and teachers as a design problem space and the institutional text as solution space. My argument, here, is that re-conceptualized design—as a conceptual design—is a problematization of the creative tension that is generated by the gaps between the curriculum as life-world and system-world. The critical insight is that this tensionality is not merely a spatial relationship that is outside of time and to be defined and solved as a designed uni-verse, but it is also a temporal relationship that must co-evolve over time through rich, recursive, relational (both spatially and temporally), and rigorous (Doll, 1993) deliberative co-creation. In short, the formal understanding of re-conceptual curriculum design is an ensemble of curricular texts held in a continuous state of tension with the lived-contexts of study.
6.5.4. A Material Understanding

As something that is produced from the resources of life-worlds, re-conceptualized designs emerge from “the activities, needs, and aspirations of human beings” (Buchanan, 2001b, p. 9). Indeed, in re-conceptualized design the person is primary. An understanding of a design’s materiality as matter remains, but a conceptual move towards human-centeredness is also present. The formal, final, and efficient understandings of re-conceptualized design all emerge from the material of our human reality, where the ecological, the human-made, and the human interface and interact.

To begin with, the material understanding of re-conceptualized design acknowledges that people are corporeal beings, sustained as living organisms within a biological ecosystem and physical environment. And all design, to some degree, is materially understood to be a physical response to the physicality of the human body, and the body’s existence within the living and physical worlds. In the second place, as beings-in-the-world, our designs also emerge from the place we inhabit—that is, our life-world as our “experienced context” (Greene, 1973). As a move towards human-centeredness, the re-conceptualized material understanding of design acknowledges that meaning matters. Designs not only emerge from physical matter, but from the substance of human subjectivity and intersubjectivity—that is, the experienced contexts of individual and shared life-worlds. Individually, designs emerge from the material of our “everyday surrounding world of life” (Husserl, 1970, p. 104) that we encounter as “a private existential experience” (Pinar & Grumet, 1976, p. 18). In this sense, our designs materialize from our natural attitude (Husserl, 1970)—that is, the unity of subjective meaning and understanding that we give our daily taken-for-granted practical life. Socially, our designs also emerge out of the intersubjective material of our shared lifeworlds. Shared designs materialize through communicative action, resourced by our cultural “stock of skills, competences and knowledge that ordinary members of society use, in order to negotiate their way through everyday life, to interact with other people, and ultimately to create and maintain social relationships” (Edgar, 2006, p. 89).

The recent emergence of the post-industrial system-world has remade the material understanding of design in immaterial and virtual ways. The trajectory of artificiality has shifted from physical products, to economic goods, services and
identities, to human-machine interfaces, to complex multiuser systems and networks, to projects that coordinate the designing of multiple people, and ultimately to discourses (Krippendorff, 2006). Design has always been discursive, but our conversation with the materials of the design situation, as Schön (1983) puts it, has shifted as the materials of the situation has become conversation itself— that is, the conversation has shifted from the design of things to the design of our experience of things, and ultimately to the design of our experiencing of experience. Simply put, the material of re-conceptualized curriculum design is the lived-experiences of students and teachers and also the curriculum designer. Curricular designs emerge from the lived-experience of those we design for. It is the situated world that teachers and students experience, a world of uniqueness, diversity and texture, where the names and faces, needs and wants, dreams and worries, are all known by having lived with the people who embody them.

In sum, to re-conceptualize curriculum design is to ground its efficient, final, and formal understandings in the material understanding of the lived experiences of students and teachers. In this way, as this present study has demonstrated, re-conceptualized curriculum design is a designing of curriculum wherein the curriculum designer is autobiographically situated within his or her own lived experience as a student, teacher, and designer of curricular texts by way of currere. Moreover, I suggest that as an act of currere, re-conceptualized curriculum design is not limited to the study of one’s own world, but it also considers how the designer’s autobiographical situation intersects with the shared world, and the surrounding world. Thus, the autobiographically situated designer, in dialogue with his or her own experience, empathetically seeks to understand the lived experience of the students and educators for whom he or she is designing.
Chapter 7.

Final Thoughts

In this study I asked two intertwined questions, one about the lived experience of my conceptualization of curriculum design as a curriculum designer, and the other about my re-conceptualized understanding of curriculum design in the wake of my exposure to a re-conceptualized understanding of curriculum. The focus of my exploration was my own conceptualization of the lived-experience of my designing and study of design in the midst of the creative tension generated by the gap between my lived-experiences and the curricular system-worlds I inhabit and bring forth. The critical insight that has emerged from this study is that understanding the lived experience of the curriculum designer leads to the re-conceptualization of curriculum design—that is, it makes human beings and being-in-the-world primary to curriculum designing. My lived-experience as a curriculum designer re-presented as currere is curriculum design re-conceptualized. It is the move of design’s domain as a system-world back to its source in the life-world from which the product of design—the system-world of curriculum—emerges, and with which it co-evolves. Currere plays a central role in re-conceptualized curriculum design, providing designers, as students and teachers, “with the capacity to gain voice, as individuals, within or even against the system” (Kanu, 2006, p. 112). It provides a way of examining and understanding how and why the system-worlds we inhabit are brought forth, how and why they act to enclose and restrict authentic learning and teaching, and what makes these designs unsustainable and how we can responsibly remake them.

It was through this study of my lived-experience by way of currere that I came to make a technological analysis (as a technē of logos), revealing that curriculum as institutional text may be understood productively as human experience designed, a sign making designation that acts in and upon the life-world of students and teachers. In this way, I came to understand that what we design in curriculum design are system-world
texts generated by, and for the purposes of, the life-worlds of study and teaching. And, by our design, the life-world and the system-world necessarily stand in relationship to each other, the life-world resourcing the system-world and the system-world supporting the life-world. This analysis emerged from my regression into my own lived experiences and progression into the historical and theoretical discourses that point to my own future understanding in the present. In these two moments I came to an understanding of how and why system-world texts, as the product of human designing, emerge as rationalizations of the life-world, arising in service to the interests of the life-world. Socio-culturally, this means the system-world’s institutional inscription of curriculum-as-intent onto the everyday situation of the life-world of student’s study and teacher’s teaching serves to designate educational action: the ends of what shall be taught and the means of how. Idiosyncratically, the emergence of this curricular system-world begins as social action, as the lived inscription of a scholar’s curriculum vitae upon a student’s lived-context of study, characterized by the traditional scholar-apprenticeship relationship.

Grounded in my own regressive experience and progressive theorizing, through analysis and synthesis I formed an understanding that the social action of curriculum designing within the context of the historic scholar-apprenticeship relationship takes the form of communicative action, meaning that the legitimacy of curricular actions as social actions may be challenged and corrected to ensure there is a goodness of fit with each design. What I first experienced and subsequently theorized is that curriculum design becomes problematic when these communicative scholarly life-world relationships are abstracted at scale and over time. These mediated forms of educative action do not always have a good fit with the lived-context of study and teaching, or vice versa. Consequently, the system-world may act to enclose the life-world, restricting life within the life-world. In this way, the system-world becomes de-coupled from the life-world. The significance of this insight is it implies that in our making, something is always lost.

What makes curriculum design problematic is not that something is lost, because in all making something is always destroyed, but rather that we fail to recognize and take responsibility for what is lost. What was lost in the historic emergence and contemporary dominance of the Technical Rational interpretation and application of Tylerian design was the centrality of human experience in designing. Curriculum design became the
irresponsible use of a technological device. What this study has sought to reclaim, as the synthesis of my experience formed through the method of currere, is an understanding of design as the distinctly human act of designing for unique human beings, where what is being designed is not just a course of study, but people’s runnings of study.

The critical finding of this study, or what has been recovered through my experience of currere as a theorizing of re-conceptualized curriculum design is the presence of beingness—a being-in-the-world of the biographically situated curriculum designer and his or her presence with the lived-contexts of teaching and study. The term being-in-the-world comes to English from Heidegger (1996) who uses the term to denote his conceptualization of human existence as a unified whole. He argues there is no subject/object split to human being as Descartes suggests, but rather human existence as lived is unified. His idea is rooted in Husserl's (1970) intentionality, which suggests that no object (such as, a thought) is disconnected from our subjective consciousness, but rather our consciousness is always a consciousness of something. For Heidegger, being-in-the-world is connected to Dasein (often translated as “being there”), which we might simply explain as one’s experience of existence. However, to understand the significance of Dasein we need to understand that for Heidegger (1996) “understanding in itself has the existential structure which we call project” (p. 145). Dasein projects itself upon the possibilities before it as an understanding of the world as possibilities.

Da-sein is thrown into the mode of being of projecting. Projecting has nothing to do with being related to a plan thought out, according to which Da-sein arranges its being, but, as Da-sein, it has always already projected itself and is, as long as it is, projecting. As long as it is, Da-sein always has understood itself and will understand itself in terms of possibilities. Furthermore, the project character of understanding means that understanding does not thematically grasp that upon which it projects, the possibilities themselves. Such a grasp precisely takes its character of possibility away from what is projected, it degrades it to the level of a given, intended content, whereas in projecting project throws possibility before itself as possibility, and as such lets it be. As projecting, understanding is the mode of being of Da-sein in which it is its possibilities as possibilities. (p. 145)
Clearly the richness of re-conceptual curriculum design, as Doll (1993) identifies, is characterized by the concept of Dasein. Curriculum as lived experience is about possibility and to design it responsibly requires the designer to be situated in this world of possibilities. In Heidegger’s terms (1996) the projective character of understanding as Dasein—our experience of possibilities as possibilities—constitutes being-in-the-world. The concept of curriculum design as a being-in-the-world of students’ study and teachers’ teaching is quite difficult in practice, for it demands authentic presence. Building upon Aoki’s (1992/2005) re-conceptualized understanding of teaching, I suggest re-conceptualized curriculum designing “so understood is attuned to the place where care dwells, a place of ingathering and belonging, where the indwelling of [curriculum designers,] teachers and students is made possible by the presence of care that each has for the other” (p. 191). Re-conceptualized curriculum design is an empathetic practice of care that seeks first to understand curricula as the lived texts of people and takes responsibility for ensuring curricular possibilities are experienced as possibilities.

Curriculum design remade is the intentional co-designation of possible courses of study, run as possibilities, transforming people’s current states of knowing, doing, making and being into preferred ones. As a re-conceptualized understanding it is: 1) the human agency, and productive way of thinking, that brings forth curriculum; 2) a co-evolution of understanding the life-worlds of study and teaching and creating system-world texts to support these life-worlds, which through re-directive practice takes responsibility for what is lost; 3) an ensemble of aspirational, transformative, and revealing texts co-creatively brought forth through rich, recursive, relational, and rigorous (Doll, 1993) deliberative discourses by, and made to fit well with the contingencies and indeterminacies of, the lived-contexts of students and teachers; and 4) something that is produced from the autobiographical texts of curricula designers, the biographical texts of students and teachers, the biographical texts of scholars study and professionals practice, and the diverse myriad of social and cultural texts that is our human heritage.

This re-conceptualization of curriculum design builds on Schön’s (1983) insight that design is a reflective practice that he described as a dialogue with the materials of the curricular situation, which in terms of curricula includes the designer’s own lived-experience of study and teaching, and the lived-experiences of those who teach and
study. Re-conceptualized curriculum design adds the understanding that reflective practice is both a spatial and a temporal concern. As a practice of care it acknowledges what already is, and how it both sustains and how it de-futures. Attuned to understanding how our designed world and our world of design de-futures re-conceptualized design is a form of reflective inquiry that takes responsibility for what it is creating and what is lost, enabling us to see otherwise, and in this way it also enables us to act otherwise. In specific terms, what re-conceptualized design does is to name a design problem according to how it de-futures, and frame it for re-directive action.

To design a design is to design a future. If one’s design is an act of technologically irresponsibility, it is a de-futuring; if the design is responsible it is a futuring.

Futuring, at its most obvious, means giving the self (as the embodied mind acting in the world) a future. This turns on two directions: first, towards the being and care of the self (which implies keeping ‘it’ nourished and healthy in body, mind and spirit) and second, towards the care of the conditions in which the self is in being. . . . we are not simply beings in the world, but beings of the world. (Fry, 2009, p. 113)

We make curricular worlds to sustain us. The problem is that to design sustainable worlds that truly sustain the self we must first understand how to sustain the self. The implication of this insight is that re-conceptualized design is not just an attitude held by the designer, nor is it a new instrumental methodology to be put into action by the designer, but rather it is an ontological change in the designer’s being or indwelling in the world. As a re-conceptualist curriculum designer I not only design, my design intent is to recognize and understand how I am designed, and to take responsibility for how the ontological design of my being-in-the-world designs in the world.

Re-direction in re-conceptualized design is more than a practice; it is a re-conceptualization of the designer as a re-directive practitioner. To be a re-directive practitioner clearly involves practicing re-direction in one’s designing. However, this re-direction requires, as Fry (2009) argues, “understanding in the context of two moments: the initial and the ongoing” (p. 174). The initial moment of understanding is a “retrofit of our professional knowledge” (p. 174) that allows us “to engage and transform those structures that structure” (p. 27). The second moment is an ongoing understanding of
curriculum that must co-evolve with its remaking. While both moments are important, it is the first moment, which bears most directly on my present study.

According to Fry (2009) the initial moment of re-direction in design has two elements: 1) “a reflective interrogation of one’s knowledge” and 2) “broadening one’s conceptual reach so as to be able to identify what one’s knowledge and practice are already connected to and, perhaps more importantly, to what it potentially could be” (p. 174). In short, re-directive practice begins with the work of the designer’s own self re-direction: 1) eliminating in one’s own thinking that which is no longer needed, especially thinking that does one’s self harm, 2) retrofitting one’s thinking that currently sustains one’s self, but in the long-term is unsustainable, and 3) adding to the self one has lost and to the self one has remade. This is difficult work in our historic moment of transition from the unsustainable to the sustainable, because becoming a curriculum designer as re-directive practitioner “requires gathering emotional resources to deal with the sense of loss and insecurity coming from what one eliminates in one’s own professional life” (p. 175). It also requires the courage to lead as a curricula designer.

At the heart of re-conceptualized design’s retrofit of the curriculum designer as re-directive practitioner is currere, and its concern with the temporality of human experience. Pinar (2004) writes:

Without the lived sense of temporality the method of currere encourages, we are consigned to the social surface, and what we see is what we get. When we listen to the past we become attuned to the future. Then we can understand the present, which we can reconstruct. Subjective and social reconstruction is our professional obligation as educators . . . Alone and together, let us participate in the complicated conversation with ourselves and with our colleagues worldwide. (p. 257-258)

While currere is not a method of curriculum design in the same way that Tyler’s Rationale is a method of making curriculum-as-plan, it can be understood as a method of bringing forth the re-conceptualized curriculum designer. That is, it is a method of bringing forth a designer who is biographically situated in the world of their lived-experience. And in this way, it can be understood as a technologically responsible curricular device—that is, a textual structure that responsibly structures in time. It is not simply a device that a curriculum designer can use to make a re-conceptualized
curriculum, but rather it is a discursive device the designer of curricula can use to be a re-conceptualized designer. That is, re-conceptualized curriculum design is brought forth from the life-world and seeks to remain connected to the life-world. This is only possible if the curriculum designing remains connected to the people designing it and people for whom it is designed. In short, it is the designer's being-in-the-world that remakes design.

The method of currere serves as a way to reconnect the curriculum as map to the journey of study and teaching through a re-direction—re-making the mapmaker as journeyer. Currere's initial role in this re-conception is to re-direct the central learning aspect of designing, which involves the designer's design of his or her own course of study in the process of coming to understanding a problem space and then bring forth a solution. Specifically, currere re-conceptualizes learning's role in designing as a running—that is, our experience of our lives as designers designing. It is through currere that we as designers of curriculum come to understand our lived-experience of the curricular design of our own study and teaching. And, subsequently, it is out of this understanding of our own experience that we in turn bring forth our curricular designs.

As a complicated conversation with my own lived-experience that brings forth my being-in-the-world, currere also becomes a pattern of thought I extend to my designing of curriculum, a complicating of my conversation with the materials of my curriculum design situation. For instance, when tasked with the design of a new university course, my being-in-the-world by way of currere regresses into my own autobiographical experiences of the subject as a scholar, practitioner, teacher and student. My reliving of my experiences in the subject gives the formative shape to my curating of the course of study's revealing texts, as a remembering of the texts that previously exposed me to what is known about the world of this subject. My regression also serves to shape my authoring of the course’s aspirational texts, projections of my known world upon the worlds of teachers’ teaching and students’ study. I, then, progressively imagine the future directions of my course design, studying what the present texts anticipate. This expands my designation of what is to be revealed and aspired to in the possible runnings of my course. I also imagine in this moment what transformative texts students will possibly produce in their transformation of their known world as they progress in their
own running of the course. In short, I autobiographically imagine my own future experiences, both as a teacher and also as a student, in the running my course design.

Having reflected on my past and present experience of the subject I move on to analyzing my emerging course design as a designation-by-dialogue with my past and present experience of the subject, its study, and its teaching. I conceptualize what it already is as an arrival of the past in the present and as a future that presents itself in the present. In response, I make an ethical judgment about how my design sustains myself as a futuring, and how it de-futures. Lastly, I synthesize my re-directed conception of the course fragments into a totalization—my course design, eliminating what I no longer need for my course of study, especially that which harms my course as a running, retrofitting what currently sustains me in my studying and my teaching, but in the long-term is unsustainable, and adding to the textual ground I have cleared at the site of this study and to the texts I have remade. In sum, the pattern of my self-conception, which currere brought forth in my re-conceptualization as a curriculum designer, is also reflected in the design of my self-sustainment here in the form of my course of study.

Currere in re-conceptual curriculum design is not merely a matter of the sustain-ability of the self, but of others. For the self does not exist without others—the world of the self is the world of others. And, consequently, to sustain the self, we collectively must sustain one another. Currere invites me to further complicate my conversation with myself and the materials of my design situation with the voices of students as co-designers. It also invites me again to complicate the conversation of curriculum design with the co-designing voices of other teachers who will be teaching the curriculum I am designing. Understanding the nature of these deliberative discourses of co-designation is beyond the scope of this study, but autobiographically speaking the pattern of currere gives me empathetic intentionality to the other voices I am designing for in the midst of my designing. By way of currere I regress into my past experiences of particular students and teachers, serving as life references by which I then empathetically project myself into as my autobiographical experience of others’ teaching and studying. Progressively speaking, I empathetically imagine the experience of how my course of study may emerge for others. Analytically, I empathetically judge how my course of study de-futures and futures for the referent people for whom I am designing the course. And,
synthetically, I empathetically fit the totalized ensemble of texts to the lived-contexts of those for whom I am designing the course of study, ensuring they each have sufficient space and time to accommodate their idiosyncrasies and indeterminacies in their running of the course.

Whereas characteristically similar referents, or even generalized personas, may necessarily give preliminary shape to a new course of study, the course’s actual participants give its ultimate shape as a re-conceptualized curriculum design. As a result, the professional capacity and agency of the teacher as a curriculum designer is a necessary condition for re-conceptualized curriculum design. For the curriculum’s form to be given a closeness of fit to the lived-context of each student’s study, there must ultimately be a co-creative designing between the student and the teacher. While the nature of this co-creative designing is beyond the scope of this study, the foundation of this relationship is the requirement of the teacher’s re-conceptualized being-in-the-world as a curriculum designer who acts as a re-directive practitioner, brought forth by currere.

Having now arrived at the end of this study, I am reminded of a line from a T. S. Eliot (1963/1991) poem: “We shall not cease from exploration, and the end of all our exploring will be to arrive where we started and know the place for the first time” (p. 208). As I reflected on the significance of this study, my thoughts returned to Toynbee’s idealistic aspiration to be “an age in which human society dared to think of the welfare of the whole human race as a practical objective” (as cited in Mau et al., 2004, p. 15). The idea of welfare in the Western tradition has its roots in Aristotle’s (1998/2004) notion of human flourishing, which Aristotle elaborated to mean being/becoming the best expression of who you are. Ryff (2014) argues that Aristotle’s notion “captured the essence of the two great Greek imperatives: first, to know yourself, and second, to become what you are” (p. 11). These two imperatives of human flourishing point to Heidegger’s (1962) concept of authenticity. Heidegger argues that human existence is an authentic existence when it acknowledges its individuality; conversely, it is inauthentic when it negates individuality. This connection between human flourishing and authenticity is important to our discussion, because re-conceptualized curriculum seeks to bring forth human flourishing by designing system-worlds to serve the individuality that characterizes authentic study and teaching. That is, the re-conceptualized designer’s
being-in-the-world of study and teaching acts, first, to recognize and, second, to take responsibility for the authentic existence and flourishing of the individual students and teachers who study and teach. What remains an ongoing concern is that our being-in-the-world as re-conceptualized curriculum designers is not simply a place where we arrive, but one we must inhabit. It is an indwelling in the midst of the creative tension generated by the gap between the life-world we experience and the system-world we create. As for me, this study is a testament of my sustained indwelling in the co-evolving in-between. It was sometimes a difficult place to inhabit, because living in conceptual tension is tiresome work, but it also allowed for complicated conversations with my experience to emerge. Traversing between my life-world and system-world experiences was full of contradictions, but the juxtaposition of these contradictions was generative. My hope for the future is that others will study the lived-experience of curriculum designing, both autobiographically and biographically, expanding this complicated conversation and allowing our “selves” as curriculum designers to sustain one another through a renewed discourse of curriculum making.
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