

Kondratieff Cycles and Long Waves of Educational Reform: Educational Policy and Practice From 1789 to 2045

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Abstract

The purpose of this article is to develop a new perspective of large-scale educational reform as long waves or long cycles in the history of Western industrialized countries (specifically the US). Kondratieff cycles refer to a “law of motion” in the capitalist mode of production: Since the establishment of the industrial capitalism in the late 18th century, capitalism has moved through long waves of upswings followed by long waves of downswings, each complete cycle comprising about 50 to 60 years intervals. So far, four Kondratieff cycles have been identified: 1789-1849, 1849-1894, 1894-1945, 1945-1995. It is argued that we are in the fifth Kondratieff cycle which would run until 2045/50. The historical evidence provided in this article demonstrate that large scale educational reforms in the history of Western industrialized countries have coincided with the downswing phase of each Kondratieff cycle. Stated differently, large-scale educational reforms comprising a new educational philosophy, pedagogical principles, curricular revolutions and management innovations have come during the time of major economic, social and political revolutions caused by a clear Kondratieff crisis of capitalism about every 50 years in the last two hundred years of the Western capitalism. The article ends with some propositions for a theory of long waves in educational policy and practice.

Introduction

Although it started long before the millennial turn, educational reform still happens to be one of the policy areas that keeps many national authorities busy and many politicians see it as an area where voter behavior can be influenced. Especially in the leading industrialized countries of the world, it has taken the public stage since the early 1980s, and many ideas have emerged as a result of this public discourse spreading to the rest of the national systems with similar guises: privatization, decentralization, deregulation, diversification. In an excellent review of the reform efforts that characterize the education policy scene in the US since the early 1980s, Louis argued that the reform situation could best be explained with “a light feeling of chaos” in that many competing reform proposals contest with each other and “educational change will, at least in the foreseeable future, continue to be characterized by disorder, discord, disconnection, and turbulence” (Louis, 1998, p. 36).

Social phenomena occur in a larger social, economic, political, cultural and historical context. Hence educational reform is very much contextual, and without

understanding the depth, scale and background of this particularity, we as educational practitioners and policy makers may be shortsighted in our actions. History may offer assistance at this point; history not as a chronological collection of events and occurrences, but as an interpretation and reinterpretation around well-rounded theoretical models and constructs. Moreover, there is much to learn from other disciplines besides history, and this should be particularly the case in explaining current fuzziness in educational reform. To do this, I will build a historical account of evolution of educational thought and practice in its relation to major epochs of change in modern industrial capitalist economies by crossing disciplinary boundaries, namely by utilizing a model of change explored by economic historians: *Kondratieff cycles*, *Kondratieff waves* or *Long waves*.

Kondratieff cycles refer to a pattern of discontinuous shift or transformation in large systems such as the Western societies since the establishment of the industrial capitalism. Its general logic fits well to what some researchers have found elsewhere as the pattern of change in small systems of organizations. For example, by departing from a model of Kuhnian change perspective, Simsek and Louis (1994) found evidence of long spaced transformational shifts in an organization's life cycle where they defined organizational paradigms in the following way:

(1) Organizations are defined by their paradigms, that is, the prevalent view of reality shared by members of the organization. Under a particular dominant paradigm, structure, strategy, culture, leadership and individual role accomplishments are defined by this prevailing world view; and (2) radical change in organizations may be construed as a discontinuous shift in this socially constructed reality (p. 671).

Kondratieff cycles point to a similar process of radical transformation in certain periodicity in larger systems where economic growth and depression take turn in a cyclical fashion. According to Sterman (1985), crisis and depression that mark the transition from one cycle to another provides a window of opportunity for societies to renew and transform themselves in economic, political and cultural terms. As I will explore in this paper, Kondratieff downturns or long wave crises of capitalism in the West has served as windows of opportunity for large scale reforms in education where, besides the invention of some modern educational concepts and practices, educational worldviews (paradigms) have been fundamentally altered.

So, the purpose of this article is to develop a historical account of educational reform, and shifting patterns of educational thought and practice in relation to larger shifts in economy and society in Western industrialized countries (particularly in the US) since the start of the industrial capitalism in the late 18th century. This analysis, in turn, will aid us to develop a larger perspective on educational reform of our time and will also help us to predict its future within a certain elasticity.

Kondratieff Cycles

Kondratieff cycles, Kondratieff waves or Long waves explain a cyclical or

recurring pattern of ups and downs in the evolution of industrial capitalism since the turn of the 19th century. Every 50 to 60 years, industrial capitalism went through a boom followed by a bust. So far, economists have identified four Kondratieff cycles: The first Kondratieff between 1789 and 1849, the second Kondratieff between 1849 and 1894, the third Kondratieff between 1894 and 1945, and the fourth Kondratieff between 1945 and present. There is an ongoing debate among economists whether or not we are in the fifth Kondratieff. A careful analysis of these cycles for their potential value in explaining the patterns of educational thought and reform within the larger context of embedded social paradigms of these cycles would be a valuable exercise.

The Kondratieff cycles are largely the output of industrial mode of production started in England in the late 18th century. By the late 19th century, economists detected a “*law of motion*” (Goodwin, 1985, p. 28) in capitalist mode of production:

The British economist W.S. Jevons, writing in 1884, found evidence of a long wave in (UK) prices from 1790 to 1849, with twenty-eight years of generally rising prices, to 1818, followed by thirty-one in which they tended to fall. Jevons in turn influenced the Dutch Marxist van Gelderen, who in 1913 looked back on a second long wave in prices, rising from 1850 to 1873, and falling to 1896, when a third upswing began... Van Gelderen has had little credit for his work, until recently. He made the obvious mistake (in retrospect) of writing only in Dutch... As a result, it was another Marxist, the Russian Nikolai Kondratieff, working in Moscow in the 1920s, at first in complete ignorance of van Gelderen’s ideas, who gained the title of the ‘father’ of the long wave (Tylecote, 1993, pp. 10-11).

It was Joseph Schumpeter, a prominent American economist writing in the 1930s, who introduced this essentially Marxist tradition of economic analysis (Kuczynski, 1985) to the Western orthodox economic thought (Goodwin, 1985, p. 28). The main thesis of Kondratieff’s analysis was that capitalism moves through phases of upswings followed by phases of downswings both comprising about 50-60 year intervals. What causes these economic cycles is being intensely debated among the economic historians. “Schumpeter and Forrester, for example, view the Kondratieff cycle as the outcome of widely spaced major innovations such as steam and electricity plus chemicals, whereas Rostow ties it to shifting relationships between population and primary resources” (Kindleberger, 1996, p. 48).

The industrial capitalism has witnessed of four such epochs within the past 200 years: 1789-1849; 1849-1894; 1894-1945; 1945-1995, each with a different type of basic innovation pattern such as steam engine and machine tools; railroad, iron and steel; electric, chemicals, automobiles and communication; plastics, synthetic fibers, radio, television, airplanes, radar and electronics, respectively (Maier, 1985, p. 48). Each of these long wave cycles also denotes to a particular world view, what I will call from now on “socioeconomic paradigm.” The first Kondratieff of 1789-1849: industrial revolution and the birth of a new economic order; the second Kondratieff of 1849-1894: social Darwinism, monopoly or laissez-faire capitalism; the third Kondratieff of 1894-1945:

humanist/progressive movements and demise of monopoly capitalism; the fourth Kondratieff of 1945-1995: the (welfare) statism and scientism, and the fifth Kondratieff of 1995-2045/50: postpositivism and the neo-liberal global capitalism. These long waves of change epochs have immense implications for understanding the past, present and the future of educational systems and educational reform practices in industrialized countries.

Kondratieff 1 (1789-1849): Establishment of free compensation capitalist system

The first and the second Kondratieffs occurred during the British hegemony as the world power (Kindleberger, 1996, p. 50). During the first Kondratieff, basic innovation was the introduction of water power, later steam engine and some machine tools. Mechanization in especially textile production was introduced in this cycle and there was a growing demand for coal (Maier, 1985, p. 48). In a broader sense, these were the years of capitalism as a new mode production established itself without altering much of the social fabric of the British society. According to Mandel (1987), “this was the long wave of the industrial revolution itself” (p. 120). Increase in the share of production during this cycle was attributed to new machine tools rather than increase in the labor force productivity:

[I]t was well known by the contemporaries that it was extremely difficult to get labor for manufacturing industries in any area until serious shortages of land developed, since the poor preferred to farm; even those who found themselves without enough land to sustain themselves (‘cottagers’) chose to take in work within ‘putting out’ system while remaining on the land, rather than make themselves dependent on an employer (Tylecote, 1993, p. 192).

So to speak, industrial revolution took root in the agrarian society of the 18th century, at first, without any significance to alter the fabric of the agrarian society. Its full power to change production relations and consequently the organization of society comes in the second half of the first Kondratieff and especially fully in the second Kondratieff (1849-1894).

Society and education in the first Kondratieff: Agrarian/religious tones, invention of vocational education and the common school

Until the mid 19th century, British society was primarily an agrarian society where “agriculture was still Britain’s largest national industry... but textiles were a close second, and industry was just beginning to take off” (Goldstein, 1988, pp. 327-28). Even in the textile period, Mitch (1999), by relying on the findings of various other studies, reports that “most occupations in the English labor force and especially occupations in the expanding textile industries did not require or utilize formal education” (p. 257). His general observation is that education had little or no contribution to labor force quality to accelerate economic growth during the industrial revolution (Mitch, 1999, p. 242).

This was the case because in the first Kondratieff, formal schooling as we know it today was just in the process of formation accelerating at a much higher speed especially in the Central and Northern Europe (specifically in Germany, Sweden and Switzerland)

during the first Kondratieff. “ ‘Polytechnische Schulen’ were set up in Prague in 1806, Vienna in 1815, Karlsruhe in 1825 and Berlin in 1827: there was a rash of other ‘polytechnics’ in Germany in the early 1830s of the Karlsruhe model. Sweden and Switzerland were also active... But there was, at the beginning, little emphasis on putting the technical education on a systematic scientific basis” (Tylecote, 1993, p. 63).

Education in the first Kondratieff (1789-1849) was largely an upper class activity. Lower working class and poor had almost no access to formal schooling which also was scantily available even for the rich. Curricula taught in the schools was largely religious in content and traditional in delivery. The scene was not very much different in the United States during the period of colonial settlement up to the mid nineteenth century: “Schools in the early colonies were strongly religious in character and were largely private... Basic knowledge of reading, writing, and arithmetic was sufficient to the needs of the era, and represented the limits of education for all but the wealthiest citizens” (McAdams, 1993, p. 31).

Something of a great importance had happened in the second half of the first Kondratieff cycle of 1789-1849, which corresponds to a clear downswing phase –a decelerated growth- between 1824-1849 (Mandel, 1987, p. 122): The common school movement in the United States. Katz (1970) calls the developments in Massachusetts, where the common school movement was originated between 1830 and the Civil War, “an educational revival” (p. 92). He relates this educational revival to dramatic social and economic shifts (industrialization, immigration and urbanization) that fundamentally altered almost all aspects of a typical agrarian communal life in the early settlements (Katz, 1970, pp. 92-93). The common school movement that had a rhythm and speed in the 1830s and 1840s lost its momentum in the late 1850s. Another heightened interest in education would only come about in the 1880s and 1890s (Katz, 1970, p. 102). The educational philosophy of the leaders who led the common school movement was markedly perennial, “Mann and his contemporaries firmly believed that schools shape morality and character and patriotism as well as intellect” (Cohen, 1971a, p. 18).

Simply stated, the first Kondratieff during which the industrial revolution erupted was a transition period from a feudal agrarian society to an industrial one that came into existence during the second Kondratieff (1849-1894). At the very beginning of the first Kondratieff, however, three important developments are observed: 1) the emergence of the nation state with the 1789 French revolution. The impact of this single development was felt much later in the course of industrial capitalism, that is the triumph of the (welfare) state in the fourth Kondratieff right after the Second World War. 2) during the first Kondratieff, while Europeans were inventing vocational and technical education, the Americans invented the free public school idea with the common school movement (Louis, 1998, p. 29) following the lead of Prussia where a clear exemplar of public elementary education had formed in the early decades of the 19th century (Cohen, 1971a, p. 3). In the same period, the grade level concept was also introduced to the urban common schools in the United States which has become the rule until our time. These two American inventions were clearly in the downswing phase of the first Kondratieff (1824-1849) and moved hand-in-hand with the technological invention phase of the steam, iron, steel and railroad which were going to be the dominant means of production in the next Kondratieff cycle.

Kondratieff 2 (1849-1894): Emergence of monopoly capitalism (laissez-faire capitalism)

Following the birth phase in the first Kondratieff between 1790s and 1850s, this is the adolescence of capitalism with no or less rules. Goldstein (1988) describes the period between 1846-1874 as a long wave upswing and the period between 1874 and 1891 as a long wave downswing period in the evolutionary pattern of the second Kondratieff cycle (p. 330). Revolutionary movements and civic unrest started in 1848 first in Paris, and then spreading to the rest of Europe were generally considered to mark the end of the first Kondratieff and the beginning of the second Kondratieff cycle in the late 1840s. This was to a large extent caused by expanding industrial production that began to destroy agrarian production relations and the social fabric of the society. The break up was culminated by harvest failures in the late 1840s which led to migration in large numbers from countryside to cities and from Europe to America. This created the shortage of food in cities which led to rising prices. In 1848, riots and revolution first started in Paris (Tylecote, 1993, pp. 203-4).

The second Kondratieff is associated with the innovations of railroad, iron and steel. Main growth industries were textiles (weaving), mining, shipbuilding, railroad, iron and steel industries (Maier, 1985, p. 48) especially in Britain, France, Germany, Japan and the United States. This Kondratieff period is defined as the “peak of the free capitalist system” or the emergence of “trusts, oligopolies and monopolies” (Maier, 1985, p. 48). In the first half of the second Kondratieff cycle (1849-1872), based on the new technologies, economies in the Western Europe and America grew unprecedentedly. During this period, “majority of firms were small, owner-run, operated in a local market, and neither vertically or horizontally integrated” (Sterman, 1985, p. 154). However, as the economy moved into the downswing phase by the 1870s, economic power began to concentrate into the forms of trusts, monopolies and oligopolies. “The last 30 years of the century (the 19th century: author’s note) saw the birth of the modern limited-liability, professionally managed, integrated corporation and the greatest concentration of economic power in industrial history” (Sterman, 1985, p. 154).

Concentration of economic power also had immense reflections on agriculture. “The commercialization of American agriculture in the decades following the Civil War had dramatically altered the life of American farmers, whose autonomy was undermined by larger and larger units of capital” (Kimmel, 1988, p. 123). As the downswing progressed, “across America’s heartland, yeomen farmers were transformed into tenants, and tenants into hired laborers” (Schwartz, 1976, p. 67: cited in Kimmel, 1988, p. 123). This growing and uncontrolled monopoly power during the last quarter of the 19th century (second half of the Kondratieff cycle of 1849-1894) was going to be the main ingredient shaping the basic social paradigm of the next Kondratieff cycle of 1894-1945, the progressive movement.

Something of a great importance happened in the second Kondratieff cycle: During the heydays of the second Kondratieff expansion (1849-1872), Marx was working on the analysis of capitalist economic system predicting its demise through collected force of labor sometime in the future. Main theses of Marx on capitalism were later

extended by others (especially by Engels) during the downswing of the second Kondratieff cycle (1872-1896). What is important in the Marxist analysis of capitalism was the fact that it pointed out a major weakness of the capitalist system with its unruly, rampant, monopolistic character which was clearly evident in the second Kondratieff cycle. This laissez-faire, unruly capitalism inflicted a great misery and poverty on an ever increasing working population, created an unjust social system where a great bulk of wealth was concentrated in the hands of a small minority. This was going to lead wide scale social movements at the turn of the 20th century throughout the Western world. By isolating Marx's utopian political system which carries a overly humanistic proletariat bias, his ingenious was to explore this inherent weakness of capitalism indirectly pointing to a need for a regulated system which was finally achieved as a result of the Welfare State (through the writings of Keynes) in the West during the 1930s¹.

Society and education in the second Kondratieff: Social Darwinism and emergence of progressivism

The outcome of the free capitalist system of the second Kondratieff where trusts, monopolies and oligopolies ruled without any significant intrusion by the state is generally defined as the era of "social Darwinism" (Murphy, 1996, p.153) or the era of "robber barons." People of this time were beset by two fundamental and interrelated forces: while their traditional, communal, agrarian way of living was being fundamentally altered on a daily basis by new production relations, they also became weak and helpless in a social environment where "survival of the fittest" was the rule. The situation was worsened in America by another wave of immigrants in huge numbers from Europe beginning in the 1880s. The public reaction to this environment was culminated around the emergence of progressive social movements towards the end of the 19th century.

We witness the second epoch of educational reformation and revival especially in the downswing of the second Kondratieff cycle (1872-1894). While the common school or the public elementary school which was invented during the downturn of the first Kondratieff cycle expanded greatly in the second Kondratieff which roughly run until the turn of the 20th century, the public high school idea was the brand new development of the second Kondratieff invented by James Pierce in Michigan. The Michigan idea that was first initiated by the Michigan Supreme Court in 1874 later led to a series judicial decisions in other states giving way to the expansion of public high school (Cohen, 1971a, p. 21).

Besides the public high school idea, perhaps the most important educational development of the second Kondratieff of 1849-1894 was the birth of progressive education that became the hallmark of the American education in the next century. In the last quarter of the 19th century, America suddenly emerged as a rival to Britain and Germany in the world hegemony contest (Hopkins and Wallerstein et.al., 1996; Kindleberger, 1996). But, three forces must had been overcome in order to successfully

¹ The direct output of Marx's analysis was the 1917 Bolshevik Revolution in Russia which constituted the first exemplar of regulated, planned economy from which Keynes, the Western capitalism and newly independent nation states of the world learned a great deal.

complete this hegemonic ascendancy: urbanization, immigration and social and economic injustice. Progressivism was born right in midst of this tumultuous period largely as a response to a mounting social crisis especially in the cities (Cohen, 1971b, pp. 28-9). Cohen (1971b) also notes that the progressivism had two main axis: “a new conception of society, cooperative, collectivist, group-centered...and a new conception of the child-romantic and primitivist...The rise of a native, child-centered pedagogy was essentially the work of Parker and Hall. With Dewey,...[it] enters a collective phase” (p. 30). So, progressivism’s roots in America dates back to the 1870s with Parker, but had deeper roots in Europe a lot earlier with Pestalozzi, Froebel and Herbart (Binder, 1970). Dewey who gave flesh and bone to the progressivist pedagogy started implementing his ideas in the 1890s [He established an experimental elementary school –the Laboratory School- at the University of Chicago in 1896 (Cohen, 1971b, p. 32)]. The central point in Dewey’s project “was the incorporation of ‘occupations,’ manual training, shop work, sewing, and cooking, into the elementary school program. Indeed, they were to *be* the school program” (Cohen, 1971b, p. 32: emphasis original).

While all these were happening in America in the second half of the 19th century, synchronuous developments are observed in Europe, as well. The last quarter of the 19th century which denotes to the downswing of the second Kondratieff cycle is generally accepted as the decline and last phase of the British world hegemony. Some critiques blame less attention given to education and technical education in Britain that caused to this decline compared to ever increasing role of education in enhancing labor quality by other competitors such as Germany and the United States (Wiener, 1993: cited in Kindleberger, 1996, p. 146). Interest in education, especially in technical education in Britain, aroused quite late compared to Germany and the United States. The Technical Instruction Act was passed in 1889 and technology, mathematics, theoretical and practical chemistry and metallurgy subjects were expanded in leading British universities after 1895 (Kindleberger, 1996, p. 146).

Companies in Germany started founding their own R&D laboratories, established close contacts with universities and started hiring research-trained individuals starting in the 1870s. Americans were also active in the same period and the move got speed after the 1861 Morrill Act that aimed at bringing science and industry together. The effect of the new use of science in production was an impressive rise in the number of “significant patents” between 1870 and 1890 largely by the Germans and the Americans (Tylecote, 1993, p. 65). This increasing attention given to science was going to manifest itself throughout the third Kondratieff cycle of 1894-1945, and would make the most salient aspect of the education and social life in the fourth Kondratieff cycle of 1945-1995.

As I previously reported, the nation state that emerged right after the 1789 French Revolution started exerting its real power in the second Kondratieff in education and social life. This was partly due because of rising nationalism in Europe (Connell, 1980, p. 7) as monarchies declined and abolished, and as the number of independent nations increased proportionately in the last decades of the 19th century (Bowen, 1981, pp. 441-2). While nation state playing this major role in regulating educational affairs, those were the states in the United States that increasingly involved in educational affairs. Starting with the last quarter of the 19th century, “state after state enacted constitutional requirements for public education and passed supplementary laws dealing with

compulsory attendance and compulsory education” (McAdams, 1993, p. 32). One final note: While the state showing a real interest in educational matters, same level of heightened and disciplined interest was not evident in the state’s involvement in regulating the economic sector. This delayed force was going to be reinstated in the aftermath of the Great Depression as capitalism came close to the brink of a worldwide collapse.

As my discussion on two Kondratieff cycles indicates, educational reforms come in clusters during the periods of downswings and the early phases of upswings in the Kondratieff economic cycles. Much of creativity and energy are deployed during the downswing period to innovate a theory and working model to resolve anomalies. Once a group of ideas and proposals are integrated into a solid educational theory and practice, they constitute the reform practice which is adopted and extended during the following upswing period defining much of the legitimate educational practice.

Kondratieff 3 (1894-1945): Progressive movements and end of monopoly capitalism

The third Kondratieff runs between 1894 and 1945, the 1894-1923/4 being the upswing period (Schumpeter, 1939: cited in Kleinknecht, 1985, p. 217; Sterman, 1985, p. 142), and the 1923/4-1945 period comprising the downswing. This Kondratieff cycle is generally associated with expansion of trusts, oligopolies, and monopolies, and basically called the “monopoly capitalism” (Maier, 1985, p. 48). Basic innovations were being electricity, chemicals, internal combustion and diesel engines, automobiles, and communications (Maier, 1985, p. 48; Haustein, 1985, p. 203; Mager, 1987, pp. 101-2).

As I previously mentioned, unregulated and rampant monopoly capitalism that emerged during the downswing of the second Kondratieff well extended into the third Kondratieff with a great intensity. Labor movements equipped with socialist ideology took the center stage in almost all western industrialized countries during the last decades of the 19th century and the first quarter of the 20th century. “Thus working class agitation seems to have peaked toward the end of the...downswing” (Goldstein, 1988, p. 332). Besides an active and somewhat violent labor movements, the social milieu in the Western world was largely characterized by poverty, depression, unemployment and misery for the large part of the working population especially in the fast urbanized cities of the West in the first quarter of the twentieth century.

Being well aware of the magnitude and scale of mounting social and economic crisis, as Holloway (1995) reports, there were voices calling for reform from political and bourgeoisie circles in the 1920s in the leading capitalist countries for a new social order that would replace the old capitalism (p. 9). These and similar remedial reform strategies were largely ignored by the political power elite and resisted by conservatives and business circles. This was because of the fact that “[T]he alliance between big business and government that had been built up in Europe and America in the late nineteenth century was greatly strengthened in the early twentieth” (Connell, 1980, p. 22). October 1929 marked the beginning of perhaps the steepest economic crisis of the industrial capitalism which completely recovered only following the Second World War.

The direction was clear and already well-recognized in the 1920s: state

involvement in economic activity through some centralized regulatory measures:

During the 1920s, the government was similarly reluctant to regulate the investment trusts and other financial innovations that sprang up during the great bull market. But after the market crash and depression, the inevitable backlash against the excesses of the roaring 1920s brought the financial industry under federal and state regulation, including the forced divestiture of investment and commercial banking, the creation of the Securities and Exchange Commission, federal deposit insurance and a host of other regulatory measures (Sterman, 1985, pp. 155-6).

The Roosevelt administration enacted the Wagner Act in 1935 (which was clearly in the downswing bracket of the third Kondratieff) that forged a new relationship between capital and labor as part of a larger social program, what is known as the *New Deal* (Holloway, 1995, p. 19). British economist John Maynard Keynes described and prescribed the new role of the state in 1936 in his macroeconomic analysis, *General Theory*, which later extended the New Deal into a whole array of welfare provisions. All these groundwork of the 1930s later manifested itself under the banner of Welfare state or Keynesianism following the World War II which ruled throughout the fourth Kondratieff (1945-1995) until the mid 1970s, beginning of another downswing in the Western economies.

Another important innovation in the third Kondratieff relates to the pattern of organization what Tylecote (1993) calls the “the Fordist style” (p. 53). He dates the beginning of the Fordist style as 1915 “when Henry Ford opened his first assembly-line plant” (p. 53). Fordist style was a much larger conception of Taylorism which was around for some time since the turn of the twentieth century. The need for both Tayloristic and Fordist styles was a demand of the time in the sense that firms were getting much larger in size and complicated in operation. It was time to move into the phase of “mass production” and mass production was only possible with a new style of organization. However, according to Freeman (1985), Taylorism and Fordism were going to show their real utility in the late 1930s:

The ‘Fordist’ mass production paradigm... certainly *emerged* during the third Kondratieff cycle, and was an important *auxiliary* source of growth in the 1920s in the USA, [but] did not become the prevailing *dominant* paradigm until after the major structural crisis of adaptation in the 1930s, and the emergence of Keynesian techniques of regulating the system’s behavior (Freeman, 1985, p. 302: emphases original)

Society and education in the third Kondratieff: End of the monopoly capitalism, emergence of (Welfare) statism and scientism

As the above discussion proves, we moved into the third Kondratieff with keeping much of the social and educational paradigms of the progressive era intact. The New Deal was a landmark in the history of industrial capitalism that later turned into a full-blown government policy adopted by many developed and developing nations alike. The

whole trust of the New Deal “represents a form of government in which the citizens can aspire to reach minimum levels of social welfare, including education, health, social security, employment, and housing. Such public provisions are considered right of citizenship rather than charity” (Morrow and Torres, 1999, p. 95). Overall, it was about devising large scale macroeconomic measures to resolve the social, economic and political anomalies of social Darwinism and the laissez-faire capitalist era in such a way that “concept of citizenship involved not merely a right to participate in political decision-making, but also a right to share in the general welfare of the society” (Pelizzon and Casparis, 1996, p. 118).

If we look at the fundamentals of these social, political and economic developments in the third Kondratieff of 1894-1945, we would quickly acknowledge that they were extremely consistent with the fundamentals of the Progressive educational movement: scientific, humanist, modernist, child-centered, at the same time, social developmentalist and collectivist.

The essentials of the progressive project was fully completed in the first two decades of the 20th century, and “1930s were the progressives’ decades” (Cohen, 1971b, p. 37). Besides this most important educational revolution of the twentieth century which was started in the downswing of the second Kondratieff (1872-1894) and completed in the upswing of the third Kondratieff (1894-1913 –Mandel, 1987, p. 120), Cohen reports another revolution in the exact same period:

Between 1893 and 1918 a revolution occurred in American secondary education also. At the heart of this revolution lay a shift in the conception of the high school, of what should be its primary goals, and responsibilities, its organization, its curriculum...By 1918, the high school was viewed as an institution that should hold all youth to the age of 18 and prepare them for the duties of life in a manner in which intellectual ability and academic subjects were scarcely mentioned...Between 1890 and 1920 high school enrollment rose from 360,000 to 2.5 million (Cohen, 1971b, p. 33).

This one of the two most important educational revolutions of the second Kondratieff cycle was not only unique to the United States. The first Kondratieff gave way to the emergence of the free public education which was almost close to universal attendance in major industrial countries at the turn of the 20th century. Now, the turn of the 20th century was witnessing the second wave of educational revival besides the progressivist pedagogy:

...around the turn of the century, there was a wave of modest secondary school reform designed to make secondary education more accessible to middle class children...in England the Bryce Commission Report of 1895 and the Board of Education’s memorandum of 1904, in Prussia the reform of 1900, in Japan the Imperial Rescript of 1890 and the attendant reforms, and in France the Ribot Commission of 1899 and the 1902 reorganization were solid and concerted attempts to examine secondary education, to lay the basis for its expansion, and to set in motion a program of cautious and

influential reform (Connell, 1980, p. 20).

Another revolution of this scale concerning education and particularly high school was going to be the major policy issue of the 1950s, first starting in the 1940s, the downswing of the third Kondratieff cycle of 1894-1945 and the early phases of upswing of the fourth Kondratieff cycle of 1945-1995.

The unchallenged supremacy of the progressivism in the 1930s led the progressivists to take one more step and extend the progressive principles from elementary to secondary schools. In the late 1930s and early 1940s life adjustment movement made its way into the American high school under the banner of “Cardinal Principles of Education,” and the late 1940s became the years when “a tremendous drive was launched on national, regional, state and local levels to translate life-adjustment principles into curricula practice” (Cohen, 1971b, p. 39).

However, this was perhaps the last major offensive of the progressivist movement in the United States towards the late downswing phase of the third Kondratieff in the late 1940s. Progressive pedagogy was under attack by “a new educational line, a hard line or ‘counterprogressive’ line” (Cohen, 1971b, p. 39). Although the conservative educational ideas comprise core of the writings in this period, however, it was not the conservative paradigm winning the race this time, it was the *scientism*. “The period 1945-1967/73, the conjuncture of US hegemony and Kondratieff expansion, coincided with, was marked by, a deepened ideological commitment to a universal science, empirical and positivistic...” (Lee, 1996, p. 179). This commitment largely based on the faith in science “as unlimited technological advance, and hence the foundation of the world production system; science as progress, and hence as the foundation of the world human welfare; science as rationality, and hence as the guarantor of social stability and the inspirer of rational reformism” (Wallerstein, 1996, p. 238). This increasing momentum since the turn of the century firmly placed itself as the most powerful social and scientific paradigm during the transition from the third to the fourth Kondratieff phase. It was fastly becoming the “modern society’s civil religion” (Welch, 1999, p. 30).

On the other hand, as a result of the Welfare state provisions, states in the industrialized Western countries began to involve in creating mechanisms to redistribute national wealth. As part of this scheme, states began creating mechanisms to centrally plan and control certain public sectors like education and health. To a large extent, education was seen as an investment that enhances both individual and social welfare in the long run. In this sense, statism accelerated the trend of concentration of power in public affairs towards the center, what we call today the “centralization.” State after state enormously expanded their educational budgets, devised strategies to develop and monitor national curriculums and school systems, made teaching profession a largely public profession (Morrow and Torres, 1999, p. 95-6).

Centralization of the school system created some dilemmas, the chief one was being the management of this constantly enlarging system from the center. By the turn of the twentieth century, almost all industrialized European and North American nations had already universalized their elementary education enrollment and secondary school enrollment was on a steady rise. For example, in US, secondary education enrollment

rose from about 4% in 1900 to about 40% in 1940. Stating it differently, while the second Kondratieff of 1849-1894 became the phase of elementary education expansion, the third Kondratieff of 1894-1945 was the age of substantial expansion in secondary education. The task was not over however, and it was going to be completed under the coming Welfare era. This notion was further supported towards the end of the War by the Educational Policies Commission of the National Education Association in that the Commission firmly stated the need for “education for all American youth” until the end of high school through a common program (Connell, 1980, p. 353).

The management of a vast educational enterprise which was increasingly becoming massified was strikingly very similar to the problem of management in industry which was also at the phase of mass production as of the Second World War. Taylorism and Fordism as organizational styles had emerged right around the turn of the century, but did not become a dominant industrial organizational paradigm until the Second World War (Freeman, 1985, p. 302). One more work needed to be completed: Fordist and Tayloristic styles were not alone enough to successfully manage large and differentiated firms of the time. It was Sloan in the early 1920s who completed the work and created the “M form” corporation, which mainly was a fine example of divisionalized and hierarchical organizational form (Tylecote, 1993, p. 235). This organizational style which became the ruling industrial pattern in the 1930s inside and outside of the US was the perfect answer for the management of a constantly expanding public school system.

To summarize, we observe several very important educational reform initiatives during the downswing phase of the third Kondratieff (1924/5-1945): Establishment of the (welfare) statism, scientism in general, and behaviorism in education; divisionalized, hierarchical and centralized organizational style in educational administration, centralized measures to further expand secondary schooling, centralized measures to boost higher education enrollment, and major curricular reforms in the secondary school curriculum. Most importantly, however, the first Kondratieff crisis led to the invention of public elementary education, the second Kondratieff to the invention of public high school, and the third Kondratieff to the massification of higher education from an elite to open access system of university.

Kondratieff 4 (1945-1995): Ascendence and descendance of the (welfare) statism and scientism

The fourth Kondratieff runs between 1945 and 1995, the 1945-73 being the upswing and 1973-95 being the downswing periods. This Kondratieff cycle is associated with state monopoly capitalism or growing state interference, centrally planned socialist state and expansion of multinational corporations. Basic innovations of this phase are plastics, synthetics, fibers, radio, television, airplanes, radar, space satellites and electronics; chemicals, petrochemicals, automobiles and electronics becoming the major growth industries (Maier, 1985, p. 48; Haustein, 1985, p. 203).

As I discussed in the preceding section, with the downturn of the third Kondratieff cycle in the mid 1920s, a new economic, political and social order –the Welfare state– started taking shape in the industrialized countries as response to accumulated anomalies of the earlier cycle, the laissez-faire capitalism. Nation state or the welfare state grew

exponentially between 1945 and 1973. It extended its power on many domains of modern, secular, technological society, with the Johnson era's famous terminology, the "Great Society." While the state mainly becoming a regulatory and redistributive social and political organ, it's socialist version undertook production functions as well dominating entire national economic system. In some Western capitalist societies such as France and England, some industries were nationalized and put under public provisions. Most developing countries and the newly independent nations of the world adopted the rather socialist version, although they were part of the capitalist block.

The state's growth was unprecedented during the fourth Kondratieff. As Mandel reports, state expenditures as a proportion of the GNP in the US rose from about 7% in 1913 to about 12% in 1940, and with a two-fold increase, reached to 25% in 1950, consequently about 33% in 1970 (Mandel, 1987, p. 487).

The Great Society years and complete supremacy of the nation state were eclipsed in the late 1960s by wide social movements triggered by the Vietnam War. The movement was started by seemingly innocent student demands and escalated over the years encompassing a variety of groups (women activists, leftists, socialists, worker unions, racial minorities, etc.). Coupled with this wide-scale social unrest and with the triggering effect of the 1973 oil embargo, Western economies began a steady decline that lasted about 20 years up to the early 1990s. 1973 marks the beginning of another Kondratieff downswing.

At the height of the Welfare state dominance, an Austrian economist Frederick Von Hayek was laying the ground for a new school of economics (known as "new free market economy," "neocapitalist," or "neo-classical economy"). Right in the upswing phase of the Welfare state, he wrote the "Road to Serfdom" which was published in England in 1944. In 1950, he started teaching at the University of Chicago, which later became the center of the neo-liberal capitalist thought of the West. The new Hayekian economic thought was later pursued and perfected by Milton Friedman, another University of Chicago economist (Spring, 1998, p. 122-4). This new economic paradigm became the ruling paradigm with the Thatcher government in England, with the Reagan administration in the United States in the early 1980s. The rest is history, one by one conservative governments in industrialized countries moved in power, by the late 1980s it became the global economic paradigm for many governments in all continents. Following the 1989 collapse, formerly socialist countries of the Eastern Europe followed the suit.

The basic tenet of the neo-liberalism lies in its deep commitment on limited government. "Friedman argues that an individualist and prosperous society can only be achieved in a liberal order in which government activity is limited primarily to establishing the framework within which individuals are free to pursue their own objectives. The free market is the only mechanism that has ever been discovered for achieving participatory democracy" (Spring, 1998, p. 124). As this new economic paradigm is firmly in place and speeding up at constant pace as we have just moved into the 21st century, I firmly state my conclusion that the fifth Kondratieff has ushered in with its upswing in the mid 1990s under a new socio-economic paradigm and would last another 45-50 years, until about 2045/50.

Society and education in the fourth Kondratieff: The rise and fall of behaviorism, scientism and Fordism

As I reported earlier, *scientism* or *scientific positivism* was a unique innovation of the third Kondratieff downswing during the 1940s. Scientism/scientific positivism took the form of structural functionalism in sociology and of scientific psychology and behaviorism in psychology (Lee, 1996, p. 181; Bowen, 1980, pp. 529-34). It was also the form of behaviorism the way the positivist thinking reflected itself in the field of education throughout the upswing of the fourth Kondratieff of 1945-1973. Walker and Lambert (1995) explain how behaviorism shaped the educational practice [after the Second World War] as follows:

Learning takes place when knowledge is broken down into smaller pieces and students are rewarded for successful performance. Direct teaching strategies dominates, based on the belief that student behavior can be measured, diagnosed and predicted. The aim in the classroom is to calibrate behavior to achieve set learning objectives and goals (p. 6).

Throughout the third Kondratieff, nationalism reached its peak particularly in the continental Europe that led to the rise of fascism as Hitler and Mussolini moved into the position of power in the early 1930s. The War which was started in 1939 interrupted the cycle of reform and renovation in education. However, following the end of War in 1945, a new and sweeping educational reform phase began in almost all industrialized countries as a consequence of new provisions of the emerging Welfare state. Several important educational provisions were observed during the period of 1945-1960, one of which was being the GI Bill of Rights which was enacted in 1945. This bill alone marks the triggering effect of massification of American higher education. "One of its major impacts was that it transformed higher education from an elite enterprise to one that served a mass population" (Marcus, Leone and Goldberg, 1983, p. 10). The trend continued with the 1958 National Defense Education Act which led to a major curriculum revision in secondary education and federal grants for research and innovation in higher education². These and similar other state initiatives between the 1940 and 1960 strengthened and solidified the role of states and federal government in the nation's educational affairs³. In the continental Europe, nation states were quicker and swifter compared to America's still decentralized system in regulating the school system in a much shorter time, most dramatically in the Scandinavian countries, France and in southern European countries.

As I discussed earlier, educational systems were centralized, governments taking

² This educational reform clearly poses an anomaly in the sense that it took place during the peak of the upswing period of the fourth Kondratieff. The timing of this reform which violates the general rule of innovations and reform coinciding the downswings of the Kondratieff cycles may be attributed to an external event of the Soviet launch of Sputnik in 1957.

³ Majority of the reform activities in this cycle take place within a twenty-year bracket between 1940 and 1960. Compared to the earlier two cycles, relative delay of some educational innovations in this cycle where some major innovations spilling over to the upswing phase may be attributable to the delaying effect of the Second World War during which external priorities and concerns overshadowed internal reform needs.

the much of responsibility in organizing, delivering and monitoring the educational systems in many countries consistent with the whole spirit of the Welfare state. The degree of centralization varied from country to country, from complete state dominance of socialist systems to mixed models of industrialized and industrializing capitalist countries. The United States, England and Australia became perhaps the least centralized ones owing to their traditional local control of education.

However, in the United States we observe a constant rise of federal and state power in educational affairs in the fourth Kondratieff. Parallel to the increasing role of the federal government in national affairs such as economy and health, we observe a sharp increase of federal and state expenditures on education. For example, in 1919-20, revenue for public elementary and secondary schools composed 0.3% by federal, 16.3% by state and 83.2% by local funding. In 1959-60, it was 4.4%, 39.1% and 56.5% respectively. In 1979-80, it was 9.8%, 46.8% and 43.4% respectively when the federal funding peaked. Since 1989-90, the trend seems reversed, funding sources started shifting back to local sources, from 43.4% in 1979-80 to 44.7% in 1992-93 (Bray, 1999, p. 224).

Involvement of nation state at the federal level in education in the United States brought home one of the most important educational achievements of the fourth Kondratieff: equality of educational opportunity for traditionally disadvantaged groups, especially for African-Americans and other minorities, as a consequence of the US Supreme Court ruling of the *Brown vs. Board of Education* case in 1954. With this, the final barrier was removed for a just and equal economic and social order where education is seen as an equalizer since the Mann's time. As a continuation, the last notable development in the fourth Kondratieff is the Elementary and Secondary Education Act of 1965 under the Johnson administration "which committed the Government to expenditures of \$1.3 billion for 1965 alone, with most of the authorization for programs designed to meet the needs of culturally disadvantaged children" (Cohen, 1971b, p. 42).

The late 1960s and the 1970s mark one of the most tumultuous periods in the history of Western industrial countries. Student protests escalated into a full blown social movement with the involvement of many other radical groups. According to Bowen (1980), "both the disturbances and the rhetoric were symptoms of much deeper problems within not only Western society but the entire world order...[which] in late 1973...ended with the dramatic collapse of the world economy..." (p. 546). As my analysis in this article reveals, it was not only the world economy that collapsed, but the welfarism, statism, scientism and Fordism were also among that collapsed.

By the mid 1970s, there was an intense debate critical of establishment, education happened to be one of them. A plethora of reports and books came out in the early years of the 1970s from the progressive thinkers (including some neo-Marxists) such as Goodman, Holt, Freire, Kozol and Illich (Bowen, 1980, p. 542). They were critical of the school as it evolved. This led to a variety of experiments in the school system in the later part of the 1970s under the general rubric of "alternative schools."

The alternative school movement was not capable of turning itself into a full blown reform paradigm as the industrial capitalism approached the trough phase of the fourth Kondratieff downswing. Because the time and context this time were not

cooperating with the progressivists, what they were promoting was entirely inconsistent with the nature of crisis and the emerging socioeconomic paradigm as a response to it. The whole reform scene was fundamentally altered in 1983 with “A Nation at Risk Report.” Louis informs us about a general feeling of the time following the report that “[T]he report generated far more attention than educators expected; as a result of this, many were heard muttering, ‘We should take advantage of this interest because it will be a blip on the public’s radar—three years at the most’” (Louis, 1998, p. 13). The report stayed much longer in educators’ agenda than expected because it came right around the time when transition crisis from fourth Kondratieff to fifth Kondratieff intensified.

Theoretical and practical search for resolving the crisis moved at full speed in a variety of tones. However, as we are in the early months of the new millenium, three reform proposals stand taller: Privatization (Murphy, 1996), or choice, systemic reform and decentralization (Louis, 1998). There is a great deal of overlap between choice and privatization. By defining privatization in much broader sense, Murphy (1996) indicates three main strategies under privatization that seem relevant to education: contracting, vouchers, and deregulation (p. 34). These three privatization strategies hinge on the ideas of market and competition. In this sense, choice and privatization seem interlinked and can be treated in the same category. Systemic reform, on the other hand, is “typically defined as higher, mandatory standards linked to new curricula and better methods of assessing students’ achievement of the standards” (Louis, 1998, p. 18). It generally accepted as a move towards greater centralization at the state and federal levels. Decentralization, however, seeks more control and authority at the school level exerted by teachers as professionals (Louis, 1998, pp. 24-5).

Decentralization of educational systems is a world phenomenon since the late 1980s. Choice strategies are speeding up in some national systems such as the United States, England, Sweden, Denmark and other Scandinavian countries (Louis, 1998; Spring, 1998). This trend would continue at an increasing intensity until the next downturn of the fifth Kondratieff, probably until about the 2020s.

I think, decentralization and choice or privatization are not contradictory trends when we take into account their underlying philosophy that both characterize a power shift from center to periphery. This logic well suits the overall pattern of macro-level neo-liberal socio-economic paradigm we have already moved into. So, these educational reform paradigms will most likely survive and define much of the educational practice in the fifth Kondratieff cycle of 1995-2045. Systemic reform or centralization, however, poses an anomaly. When we look at the details, we see several important features of the centralization movement: It is a trend mostly associated with three national systems; the United States, England and Australia. I hypothesize a possible reason for this anomalistic situation: centralization is a temporary educational strategy unique to these systems (or any system that has similar drawbacks) to compensate their relative hesitance in regulating their educational systems during the Welfare Kondratieff largely owing to their still decentralized educational systems during the welfare state era. In writing on the US’s welfare policies (welfare provisions other than education), Pelizzon and Casparis (1996, p. 120) argue that “[T]he United States was the only state in the core zone where welfare-statism made little pretence at universality.” Even during the height of the nation-state dominance, the involvement of the federal government in education was largely

based on the matter of funding, national curricular standards that were commonplace in other more centralized industrialized countries were not the case within the United States. So, the centralization movement in the US is a temporary or trivial strategy, it would stop in a foreseeable future as the world national systems converge in both directions.

On the other hand, Ramirez and Boli (1987) provide us another equally important clue on the question of centralization by relating the issue to the relative hegemonic status of the US as a world power in the world political scene:

...why certain states—namely, nineteenth-century England and the twentieth century United States—did not assume complete control of mass education as a tool for political mobilization. As the dominant world powers, these countries have been freer to operate at variance with the established model of national mobilization, in familiar the process whereby only those at the top of power structure can safely deviate from convention. We find, however, that when England lost its dominant position after World War I, it also began to conform much more fully to the state-directed model of educational development. We can expect the same sort of change in the United States in coming decades as its position as world leader comes more and more into question (p. 15).

Perhaps one of the most dramatic shifts in the downturn of the fourth Kondratieff between 1975 and 1995 relates to knowledge structure. Scientism or scientific positivism gave way to a new brand of epistemology in hard and soft sciences alike what is commonly known as postpositivism, phenomenology or interpretive knowledge in the social sciences, and dynamical systems, chaos, and non-linear systems in the hard sciences. Lee (1996) reports that “[T]he total number of entries in the Permuterm Index of the *Science Citation Index* has shown flat, linear growth since the 1960s, while entries under the rubric ‘chaos’ and its cognates have multiplied exponentially” (p. 197: footnote). Similar is the case for the social sciences. Qualitative research following the premises of hermeneutic/phenomenological tradition has been taking the center stage in sociology, psychology, and education since the mid 1980s. Constructivism is an umbrella term that comprises a plethora of theories and models. It seems to be the most robust paradigm that would be able to unleash a totally fundamental curricular reform in education since the progressivism and scientism.

A similar shift was also the case in the area of organizational structure and process. As a result of the fourth Kondratieff crisis, business organizations engaged in large-scale restructuring efforts. At first, a great deal of efforts were mobilized to reduce the fat accumulated over the years during the growth years of the upswing, to eliminate unnecessary middle management units and positions, and to cut back some processes and services. These initial retrenchment strategies later gave way to more robust strategies and theories of organizations particularly attacking on the conception of hierarchical/bureaucratic, top-down, divisionalized Fordist style. The emerging form was a lean organization with a redefined, sharpened, and focused mission. Quality became the buzzword throughout the eighties as reflection of the Total Quality movement. Organizations substantially reduced size, in many cases diversified themselves in manageable small organizations. Organizational culture and learning, leadership,

restructuring strategies, strategic planning and human resources, and symbolic/interpretive approaches became the areas that enjoyed a heightened interest among the professionals and practitioners alike (Kanter, 1983; Bolman and Deal, 1990; Drucker, 1994; Hammer and Champy, 1993; Handy, 1990; Peters, 1987; Senge, 1990). All these theoretical and practical works were indeed signaling the demise of the Fordist organization paradigm of the fourth Kondratieff.

Downswing of the fourth Kondratieff exemplifies a similar trend in educational organizations. A great deal of energy were put in restructuring educational organizations as well. The result was a number of organizational renewal strategies usually under the banner of “decentralization.” A strong decentralization move was underway in the United States with site-based management movement (Louis, 1998, p. 24). Other more centralized national education systems have developed strategies to decentralize their national systems by shifting part of legal authority to regional, local and somewhat to individual school levels. Most of these management strategies were consistent with the business management paradigm of the 1980s and 1990s. Wallerstein (1996, p. 224) argues that golden years of educational expansion seems to be over in Western industrialized countries. Furthermore, upward trend seems to be reversing most dramatically at the higher education level where there is a strong move towards more selectivity and tightening of entry standards (Pelizzon and Casparis, 1996, p. 141). To sum, the transition from the fourth Kondratieff to the fifth Kondratieff during the 1980s and first half of the 1990s led to the redefinition of educational organizations in many respects (structure, goals, strategy, leadership, etc.) similar to business organizations.

It is so far evident in my discussion that educational reforms come in clusters and in regular periodicity consistent with the overall logic of economic Kondratieff cycles. Educational reform ideas flourish as early as the Kondratieff downturn begins, intensifies as the downturn deepens, one or more of educational reform paradigms are selected somewhere around the trough phase (spilling over to the upswing phase in some instances), they become national reform policies and implementation begins as the next Kondratieff upswing sets in. The rest of the cycle is spent perfection and wide-scale implementation of the reform which will eventually lead to excessive or overdone implementation, the primary causes of anomalies for the next cycle (Simsek and Aytemiz, 1998).

Kondratieff 5 (1995-2045/50): The neo-liberal global capitalism and some speculations

As the Western economies started growing steadily as the pacesetters by the mid 1990s, I predict that this growth would continue with minor ups and downs until the next Kondratieff downswing that would more likely come into existence in the late 2020s. The innovation that led to the fifth Kondratieff cycle in the mid 1990s were microelectronics, robotics, biotechnology and genetics (Haustein, 1985, p. 203; Mager, 1987, p. 159). These innovations have become the base of information explosion and service industries that led to what commonly referred as the *information revolution*.

Microelectronics and computers seem already in place as we reap their fruits at an increasing rate, the fruits of biotechnology, genetic engineering and brain research would

come later, and these innovations would become the growth industries of another Kondratieff cycle in the mid 21st century. These research lines would also give us new insights on how human brain works and how learning occurs that would immensely alter our way of thinking in education. So, another brand new educational philosophy, large-scale curricular and administrative reform would emerge during the downswing of the fifth Kondratieff cycle sometime in the 2020s.

Under the premises of the neo-liberal socio-economic paradigm, we would not be surprised by the fact that the nation state will retreat even further and many of the welfare gains of the fourth Kondratieff will be reversed during the coming decades. There is already in motion a strong decentralization move in many of the formerly state dominated national systems including education. Privatization is strongly pursued by governments in reorganization of public domain and has become a daily practice. All these, of course, would bring more remedies to a tangled up “welfare” system of public engagement in social and economic life. This is what happens when a new paradigm is put into practice in any domain, call it science (Kuhn, 1971) or social and educational organizations (Simsek and Louis, 1994).

However, as history teaches us, no competitive or market system is a purely just system. Actors most often do not start from the same departure line. As Chaos theorists posit, when forces are put in process, a positive feedback loop sets in, every new move enforces and amplifies the earlier phases. This situation normally leads to overdone strategies. In this sense, privatization and decentralization movements would exceed their nominal boundaries in the long run. As a result, social and economic disparities would increase between haves and have-nots within national boundaries, and between rich and poor countries of the North and South. To sum, at both national and global levels, the fifth Kondratieff would more likely bring new economic and social inequalities, and accelerate the current ones. Greider (1997) has already documented some initial evidence of the return of a 19th century rampant capitalism, now this time at a global scale.

To use Kurt Lewin’s (1951) famous and simple three-stage theory of change, unfreeze--change--refreeze, currently unfrozen world capitalist system under neo-liberal market paradigm may require another full-fledged re-freezing policy, a similar situation that created the (welfare) statism. As the nation state would loose much of its traditional ruling power in a global system, this task may be carried out by various supra-national organizations that emerged during the fourth Kondratieff of 1945-1995 (UN, NATO, EC, NAFTA, IMF, World Bank, etc.).

One final speculation: As my treatment in this article proves, every socio-economic paradigm in Kondratieff cycles was destroyed by its own anomalies triggered by wide-range social and political movements (and, by *wars* in most instances—Goldstein, 1988) coming in exact time of Kondratieff downswings and intensified in trough phase. If this historical trend holds true in the future, the years throughout 2020s and 2030s would be very sensitive to large-scale social and political movements (as well as to large scale *wars*). Social and political movements would be triggered by an already active environmentalist, plus anti-global movements of our time and would be escalated by the involvement of other radical groups. These movements would probably target the social-Darwinism of the neo-liberal global capitalism that has already been causing

increasing economic and social disparities among classes in national systems and among countries in the world system.

Toward a Theory of Long Waves in Educational Reform and Policy

In this paper, I have tried to develop a perspective of large-scale educational reforms as long waves or long cycles in the history of Western industrialized countries since the time of the industrial revolution at the turn of the 19th century. The long wave or long cycle is a pattern that seems to be recurring in a certain periodicity in connection with some economical, political, technological and social phenomena between two points in time. Economic historians around the turn of the twentieth century detected a pattern of economic long-cycle based on certain quantitative indicators in the evolution of industrial capitalism. According to Goldstein (1988), however, “the very word *cycle* seems to ring alarm bells for many social scientists. They presume it to mean something mechanistic or even mystical, beyond scientific inquiry, and unproven if not unprovable” (p. 5). I share Goldstein’s approach in treating large-scale educational reforms as long cycles in the sense that “long cycles are not a mechanical process but a repetition of themes, processes, and relationships along the path of an evolving social system” (1998, p. 6). I believe that I have explored an important theme on how larger social, political, economical and technological forces shape basic tenets of a particular educational reform and when an educational reform would most likely occur by juxtaposing major epochs of educational reform onto a Kondratieff cycle of economic development in the West.

As I briefly mentioned in the opening section of this article, Kondratieff cycles refer to a logic of transformational or “episodic, aperiodic, infrequent” change (Weick and Quinn, 1999, p. 369) in large systems. This line of thinking finds its theoretical underpinnings in the tradition of “punctuated equilibrium” theory of biological systems applied to organizations (Gersick, 1991; Tushman and Romanelli, 1985; Tushman and Anderson, 1986; Sastry, 1997). This line of research has produced a substantial body of literature in organization theory where change is described as comprising “periods of incremental change punctuated by discontinuous or revolutionary change” (Tushman and O’Reilly, 1996, p. 11) or “change can be characterized by long periods of stasis or gradualism punctuated by sudden upheavals and revolutions” (Sterman and Wittenberg, 1999, p. 323). As Max Weber argued, “particular forms of organization arise at particular times in history, within particular sets of social and technological conditions” (Weber, 1978: cited in Lewin, Long and Carroll, 1999, p. 544). Similarly, as a result of my investigation in this paper, I believe that particular educational paradigms also arise in an episodic fashion in connection with larger forces of shifts in social, economic and political domains. Kondratieff cycles of economic downturns aid us to locate these episodes of transformations or turning points in the process of evolution of educational policy and practice in the last two hundred years of the Western capitalism.

My historical analysis of educational reform and of Kondratieff economic cycles lead me to firmly state that large-scale educational reforms come in clusters. They tend to cluster around the downswings and in the early phases of the upswings. Reform discourse starts as early as the downswing begins, intensifies as the Kondratieff economic crisis deepens, new practices and ideas for reform flourish from left and right, from progressive and conservative lines towards the trough phase, and some working models or exemplars

of alternative reform paradigms are put forward. As some of these nontraditional ideas and practices outperform others, the field moves towards an integrated body of knowledge and practice to become the base of emerging reform paradigm during the trough and upswing phases. The new line is put into practice during the upswing phase of the Kondratieff cycle, sooner it becomes the sole working reform paradigm dominating the entire education field as authorities at all levels start implementing what is offered in the package. All these stages and processes fit well to the process of paradigm creation and destruction in science (Sterman and Wittenberg, 1999), as well as to the process of rise and fall of particular institutional and organizational worldviews (paradigms) (Simsek and Heydinger, 1993; Simsek and Louis, 1994).

To sum, the followings are some observations and assumptions I draw from this historical analysis:

1. A thorough investigation of such long waves in educational reform indicates that there has been four such intervals of large-scale educational reform in most of the Western industrialized countries within the last two hundred years: 1830-50: the common school movement and invention of vocational-technical education; 1885-1915; the progressive pedagogy and high school movement; 1940-1960: scientification of school curriculum, behaviorist pedagogy, massification of higher education, Fordist organization, and equality of educational opportunity; 1973-95: neo-liberal market approach to education, decentralization, post-Fordism, and constructivist pedagogy.
2. As my historical treatment of educational reform indicates, each Kondratieff cycle and its accompanying mode of economic production and social patterns were destroyed by large scale social and political movements. Thus, each Kondratieff crisis marks a new beginning for economy, political order, society and education. As Sterman (1985) puts it, "the downturn...creates a window of opportunity for change...substantial evidence exists that political and social values in Western nations fluctuate with the period and phasing of the long wave" (p. 155). A similar observation was put forward by Lewin, Long and Carroll (1999) in such a way that "institutional systems themselves co-evolve in response to exogenous forces of change, interaction between nation states, and organizational interactions within a particular nation state" (p. 539). With respect to education, educational values have shifted consistent with the larger value shifts in society from perennial/essential pedagogy of Mann and his contemporaries, to progressivism of Dewey, to scientism of the statist era and finally to constructivism in the neo-liberal market phase. Each phase came with its own pedagogy, curriculum, organizational style and educational delivery patterns.
3. As the evidence I provided earlier proves, we are currently in the upswing phase of another Kondratieff wave. The ongoing reform debate in education since the early 1980s have produced three lines of reform proposals: decentralization, choice and privatization, and systemic reform (Louis, 1998). As my historical analysis reveals, we have most likely exhausted the creative energy of educators and policy makers to frame the crisis in abstract terms and to develop working models to resolve the crisis. There is enough evidence that implementation of these three reform proposals for change have been proceeding at full speed internationally, the rest of the reform efforts in the coming years will most likely be concentrated around further implementation, revision, and perfection.

If the internal logic of the past four Kondratieff cycles holds true in the fifth phase, we have to wait another 10 to 15 years for another full-scale reform talk in education.

4. In each of the Kondratieff downturns, as economies decline and as society starts worrying about its future, attention shifts to education usually with much scorns and blame, however. Education is alleged to be the prima cause of decline. In every instance of downturn, traditional progressive and conservative camps awaken with almost the same classical arguments, and they start devising theories and models for reform. My historical account indicates that although progressive and conservative revival heightens during the downturns, the chances of one of them being selected as the next ruling paradigm is highly contextual. As Cohen (1971b) argues, during the turn of the twentieth century, the conservative line surged and prepared reports to reform the educational system based on perennial/essentialist lines (the Committee of Ten and the Committee of Fifteen), the winning paradigm of progressivism developed strategies that were “point-by-point rejection or repudiation of the cluster of educational ideals and practices represented by Committee of Ten, the Committee of Fifteen, and the rest of the Old Guard” (p. 27). Because there was a good fit between the social, economic, cultural and educational anomalies of the time with the basic tenets of the progressivist pedagogy.

The same thing happened during the following Kondratieff crisis in the 1940s and 1950s. A conservative line again culminated itself in much of the writings and criticisms, however, it was not the conservative line in its pure form winning the race, but were scientism and behaviorism this time. While a strong progressive revival was evident during the 1970s educational writings, a strong hard-line conservatism showed itself in educational affairs in the 1980s again. However, neither of these two defines the educational practice of today in any significant manner (there may be some occasional and trivial gains like school prayer and some private schools adopting moral education as part of their curriculum). I think the coming Kondratieff period will be an era of neither conservative nor progressive educational thought and practice, the coming era will most likely be the decades of existentialism and constructivism. To sum, there is no round-robin fashion of alteration between progressivism and conservatism as two traditionally rival educational ideologies.

5. Epistemological and ontological power of an educational reform paradigm are important, however, they are not very definitive for one paradigm being selected as the new ruling paradigm in the next Kondratieff cycle. There are two measures of success: its utility in responding to the accumulated educational anomalies of the earlier era (Simsek and Aytemiz, 1998), and its fit to the emerging socioeconomic paradigm, such as progressive era, statist era, and neo-liberal market era. This is why the conservative paradigm in its purest form has not become the ruling paradigm following the last three Kondratieff crises, similarly the progressive paradigm in the last two Kondratieff crises. Despite the dominance and rhetoric of the progressive camp that constituted much of the writings in educational reform, neo-liberal market paradigm took the reform stage and outperformed the other two in a much shorter time between 1980 and 1990.

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