Reimagining College Education

A Mega Institution Design for Mass Access to Meaningful Education

SECOND EDITION

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Introduction

Mass Customization of College Education (MCCE)
The Key Concept of the Book

1. The Logic for MCCE Hybrid Structure

I.1

Mass access to any product is possible only when the product is mass-produced. However, the uniqueness of the customer/client's needs dictates customization. In varying degrees, most large-scale production systems are mass customization: Goods are mass-produced centrally; services are mostly distributed and customized to customers' needs. Can this model be applied to education? The answer varies depending on the learning (growing) stage — pre-high school, high school, college, or post-graduate research programs. Each demands a different structure, facilities, and services.

The Blend

I.2

From childhood to old age, the *blend* of four developments shapes human growth: (1) physical, (2) emotional/psychological, (3) moral-ethical, and (4) competence, that is, gaining knowledge and skill. The blend is relevant throughout one's life.

I.3

The education enterprise is established to offer a different yet optimal blend of the four developments at each phase of human growth. The proportion of knowledge and skills in the *blend* increases as students advance from childhood to adulthood. At the present level of technology, automation is not much help in students' physical, emotional/ psychological, or moral-ethical

development. Thus, it is not much of a help in pre-*high school*. At this early stage, transfer of knowledge/skills is necessary but secondary in the blend.

By "automation, I mean the ***automation of the core processes[1]** – beyond using automated tools.

I.4

Beyond college, the focus is on research, which is, by its nature, highly unique and thus not amenable to automation of its core processes.

This leaves only high school and college levels, in which transfer of knowledge/skills is the prominent part of education. Still attention to the blend is relevant and necessary

I.5

Transfer of knowledge/skill is not memory dumps to new generations. It is composed of content and processes. Automation can greatly assist in recording, storage, and delivery of content. The process, at this point, even with the promises of AI, is instructor-dependent. Based on the established learning theories — e.g., Bloom's Taxonomy, Figure Intro.1, or Webb's Depth of Knowledge (DOK) — it is the instructor who takes the learner from low-level learning to the highest level of creativity and evaluation abilities.
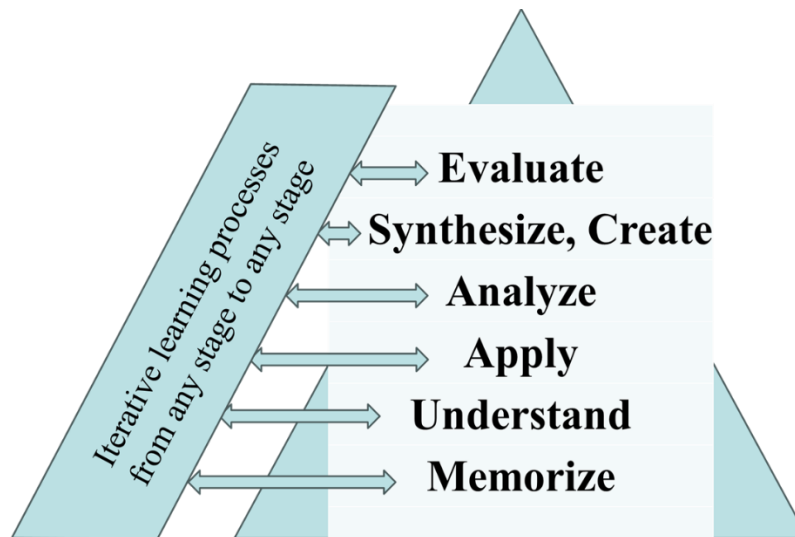

Figure Intro.1, My Understanding of Boom Taxonomy with Slight Modification

The *Life Dynamics* model in the Appendix gives a broader perspective on what education should aim at to enhance the life of a "whole person."

With the present level of technology, the process is not completely automatable; it is a *faculty-computer* orchestration. The learning theories are guidelines for the faculty who develop the curriculum and the instructors who facilitate learning. Artificial intelligence (AI) will increasingly help, but currently, only the storage and delivery of the content are completely automatable. Therefore, MCCE is designed as a hybrid system.

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[1] Defined in chapter 2.

2. What Is MCCE?

MCCE Automates What Is Automatable in Education

I.6

Three levels in the knowledge/skill domain have shaped the spectrum of education (Figure Intro.2).
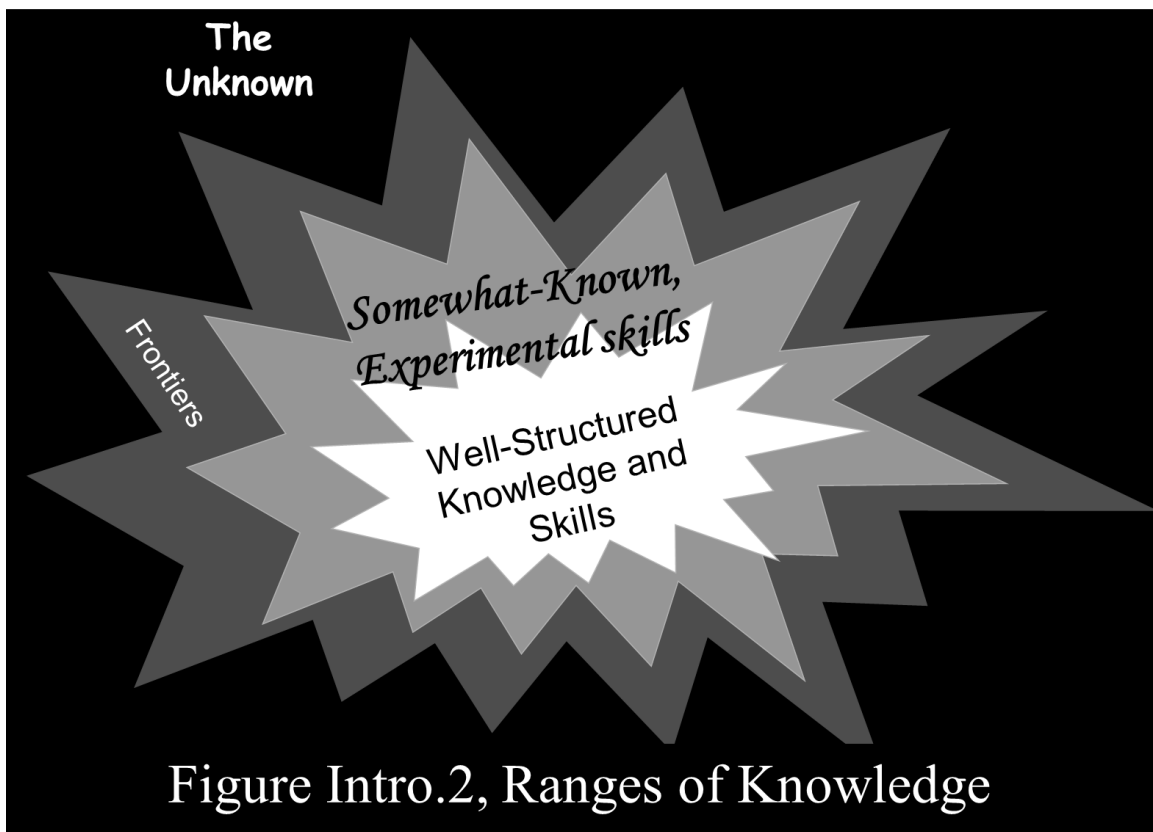

Figure Intro.2, Ranges of Knowledge

1. Well-structured knowledge and skills;
2. Somewhat known territories, experimental knowledge, and skills; and
3. As yet unknown.

Humans have long struggled against the unknown. At the forefront of this struggle, frontline researchers gradually bring pieces of the unknown into the somewhat-known arena. Serious doctoral research programs are designed to bring fresh troops into this frontier. Serious master's degree programs are set up to bring pieces of "*somewhat known"* into "*better known"* and often into *applicable* territories. Finally, teachers and textbook authors make the known into *well-structured knowledge* to become course material.

I.7

Well-structured knowledge and skills are teachable and transferable by ordinary teachers to ordinary students. All three levels of knowledge are constantly evolving.

I.8

Until the early 20th century, well-structured knowledge and skills were limited and could fit into elementary to high school education. Higher education was established to search for what was less known or unknown. The realm of well-structured knowledge has been expanding to the point that it now includes undergraduate education as well. Human development has reached a point where this level of knowledge and skill is fundamental for a decent living standard to survive and progress. Therefore, the challenge of our time has become *pedagogy* to transfer this level of knowledge and skill to (1) the severely inadequately literate masses and (2) the largely illiterate world population. This is why pedagogy is the central objective in MCCE design.

I.9

At this point, delineating high school and undergraduate higher education is only a matter of creating milestones. Their differences are not structural but operational and have to do with tradition, age, and academic maturity. Rationally, MCCE looks at high school and baccalaureate program content as a continuum within the realm of well-structured knowledge. A high school and undergraduate curriculum continuum is an effective option, at least for more able high school students (chapter 8).

I.10

Teaching and learning in formal education, in seven stages of a reference model, is the subject of this book (chapter 2). Division of labor in this model is between MCCE Central and MCCE-Affiliated Schools. MCCE Central will create and update content and exams and manage grading through a grading network, increasingly supported by AI grading programs as such programs emerge and gain viability and trustworthiness (chapter 4). Storing the content and online delivery will be centralized through a Computer Learning Assistant (MCCE-CAL) intranet (chapter 2 and chapter 6). Instructors (expert trainers) in affiliated schools will have a *training role* and keep students *on course*.

As AI advances, automation will increasingly assume a larger role in the MCCE learning system.

How Does MCCE Customize (Personalize) Education?

I.11

Three conditions are fundamental to customization: (1) having many options in the spectrum of practical to theoretical pursuits in many fields of study, (2) flexibility to change course with minimum losses, and (3) personal attention to the individual student's strengths and weaknesses and the ability to guide them effectively. The larger these options are, the better the students can find their match. Such matchmaking opportunities are at the core of the individual's motivations and success (chapter 8).

The Organizational Scope of MCCE

I.12

The fundamental problems of quality, costs, and thus access are structural at the institution's core operation. While supporting functions (e.g., accounting, purchasing) in educational institutions are as modern as in other industries, core operations (producing program content and delivery) remain as they were in the 1800s, by single-handed teachers -- albeit now with modern tools.

I.13

Starting in chapter 2, you will see what parts of the learning process in formal education are amenable to restructuring and computerization and what parts should remain under instructors' control.

MCCE cost-quality gains are achieved by streamlining yet strengthening the curriculum content in a centralized production system, making delivery more appealing, and having systems and procedures for continually updating content, exams, and grading.

I.14

To streamline content, MCCE largely eliminates two sets of unnecessary repetitions in the present system. First, so many faculty members teaching the same course, largely duplicating each other's work, producing or modifying much-overlapped content term after term. The size of duplications is colossal: For example, twenty-three California State University (CSU) campuses each have a business college, and each has many common courses, e.g., "Introduction to Management." Each is taught in multiple sessions, term after term. The saga goes on in all other colleges for all common courses. You will find the same repetition on ten campuses of the University of California and many such conglomerates across the US and many parts of the world.

This is not advocating the folly of having one university in the US, as nobody advocates having one manufacturer for each product or service, but questioning the wisdom of such colossal repetition – a folly of its own, at taxpayers' and parents' costs. Equally, a foolish conclusion would be firing all and replacing them with a few master class faculty. Large-scale orchestration of production and continuous updating enhances content and delivery by folds and relieves faculty to channel their enormous talents to more vital tasks of pedagogy and research. Recall the example of Celeste Cicerone in the executive summary.

Second, a much larger but disguised repetition is in having many overlapped topics between different courses that are duplicated repeatedly. MCCE's modularization reduces these unnecessary redundancies. Offering multiple versions of course modules with various learning styles is a different matter, a premium that only MCCE can afford (chapter 2).

I.15

MCCE is structured with a large-scale, centralized production and decentralized delivery system: MCCE Central will produce, maintain, and continually update the content, which includes Course Knowledge Base, Practice Base, exams, and grading (chapter 2). The MCCE-CAL intranet, structurally different from the present online education, will house the content expanded into cyberspace (chapter 6). This system will accommodate fast, cohesive, and complete content updates and offer versatile access to students and faculty through a set of distributed or franchised affiliated schools.

I.16

Affiliated schools' instructors will help students navigate the MCCE-CAL intranet, help students through the lessons, examine and correct their homework, and diagnose their strengths and weaknesses. They will coach, advise, facilitate group interactions, do projects with them, and keep students on course (chapter 3). The system also learns from the instructors' experiences in direct contact with students. Instructors' feedback to MCCE Central is the major source of continuous improvement in content, exams, and grading.

I.17

MCCE Central will assure learning accountability and quality control by managing exams and grading. Decoupling exams and grading from the instructor will remove the present corrupting elements of the learning process (chapter 4).

MCCE — Beyond Course Redesign

I.18

Computer/communication technologies have been applied in formal education and distance learning to expand access, and many hopes have been invested in *massive open online courses* (MOOCs). Neither has helped much in reducing college education's inadequacy of capacity, quality, and affordability.

Online education in the present system suffers from the same structural flaws as traditional education (chapter 2).

During COVID-19, online teaching/learning earned credit for preventing the collapse of the present educational system. At the same time, the pandemic made us see how the loss of class interactions short-changed real learning.

I.18

While MOOCs have expanded informal learning for a minority of self-motivated learners, they are not a substitute for formal education because they do not have all the stages of formal education. There are no class interactions, practices are insufficient and inconsistent, and the system lacks accountability and quality control (chapter 2). MOOCs are solo pieces that do not make cohesive, *formal* college programs.

Formal education is the work of an institution that continually produces thousands of learning modules, courses, and programs, and keeps students *on course* until graduation.

So far, the online availability of knowledge through MOOCs, as significant as they are, largely helps informal education. Some MOOCs help formal education through informal channels and volunteer teachers — notably Khan Academy. Limited attempts have been made to incorporate them into the present program.[2] In the best-case scenario, MOOCs are valuable efforts in "course design[3]." MCCE is an "institution design" (chapter 2).

MCCE can incorporate MOOCs as a secondary *supply* market, but only for the first two stages of the learning process (figure 2.1). The main issue will be how to integrate them into a complete program.

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[2] Kolowich, 2013; Rivard, 2013.

[3] Before MOOCS, Dr. Carol Twig at the National Center for Academic Transformation started the "Course Redesign Project" in 1999 — supported by an $8.8 million grant from the Pew Learning and Technology Program. **https://eric.ed.gov/?id=EJ1085058**.

3. How MCCE Can Enhance Education and Elevate the Nation

Mass Access to College Education — a Yearning, an Urgency, a Profitable, and Exportable Good Deed

I.20

Fundamentally, in higher education, we do what we have been doing since the 1800s. In every walk of life, the advanced world has produced more quantity and better quality at a lower cost. In comparison, the higher education sector is moving at the same old pace, albeit using modern tools. Still, it continues its often mediocre, average quality at high prices.

I.21

As in other industries, mass access to quality college education at an affordable price requires a mass production system designed specifically for education. However, for many educators, mentioning mass production in education is taboo. Their legitimate concern is, "How will you accommodate the uniqueness of individual student's abilities and interests within a mass production system?" The answer lies in customization: Mass Customization (personalization) of College Education, MCCE.

I.22

The demand for a quality college education is urgent — nationally and worldwide. Parents and students see the transformative power of higher education and the riches it brings to ordinary people — even increased life expectancy[4]. And they sense that it is harder to keep pace with technological and social changes without higher learning. At the national policy level, it is well known that higher education is a major determinant of a country's place in global competition. Yet, the supply of quality education is severely limited. Far too many cannot afford college, and many in the system leave school with massive debt.

I.23

The need for extended access to a college education is comparable to the growing need for high school education in the last Century, Figure Intro.3.

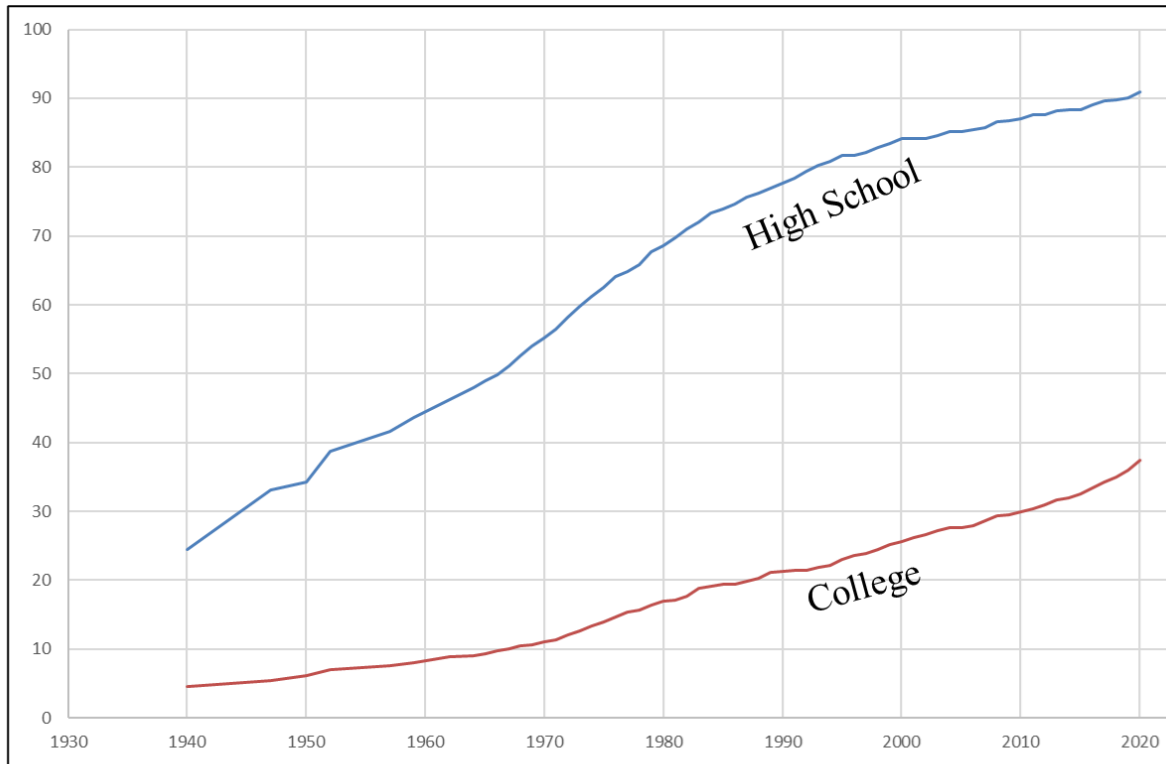[4] Case, Deaton, New York Times, Oct. 3, 2023

Figure Intro.3, Percent of People 25 Years and Over Who Have
Completed High School or College: Selected Years 1940 to 2020.
Source: United States Census Bureau, Table A-2.

Time is accelerating. The transition from the Information Age to the Knowledge Age is already underway. The book's concluding paragraph is titled "Artificial Intelligence, the Great Disrupter" and asks: "Can human collectives with the present level of education, even in the advanced world, have the background to manage the coming tectonic disruption without major calamity?" This concern should add to the urgency of mass access to higher-quality college education. It will be much sooner than a century before we reach the needed college graduates.

I.24

Without mass access to quality education, the disparity between the large (often urban) and small (often rural) communities widens. The disparity often prevents discourse and mutual understanding between communities, blocks social cohesion, and causes division and conflicts. Environmental and civic damage then follows.

I.25

The world is yearning for the Western style of education — American education in particular. While concerns about the loss of traditional industries (coal, steel, manufacturing, etc.) are well placed, little attention is paid to the enormous domestic and international markets for higher education. The West still has significant advantages. Internationally, Western education is a highly valued luxury product. Beyond the economics of selling this profitable product, the West can maintain and expand its global influence by exporting higher education.

I.26

The allure of American college education, however, may not last forever[5], as the quality of higher education has been declining[6]. (See *content dilutions* and *the damages of "empty diplomas"* in chapter 5.)

The culprit is the struggle for higher enrollment in below-the-top universities. Furthermore, in the absence of enforceable regulation, "the abuses of public funds and student loan programs in many institutions have led to lessening quality in exchange for the economic preservation of the institution." [7]

I.27

Every level of education has special significance and needs special attention: Kindergarten through eighth grade is the most crucial period in which character is built and basic skills developed. In recent decades, the concern has widened to K–12. The poor quality of high school graduates is increasingly in the news. So is increased attention to cost and limited access to college education, but not much to the quality of higher education.

I.28

Undergraduate education has a pivotal role in addressing the above needs, Figure Intro.4.
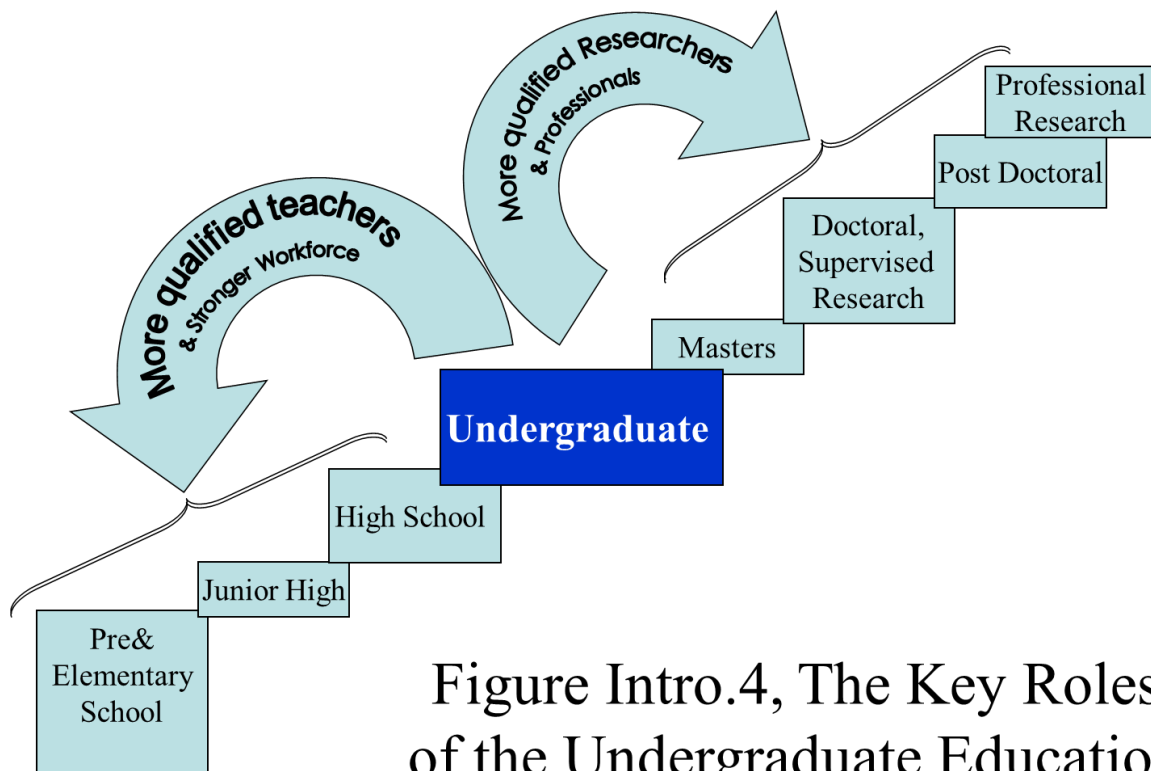
Figure Intro.4, The Key Roles of the Undergraduate Education

[5] See Fischer, Aslanian, "Fading Beacon: The United States may never regain its dominance as a destination for international students," *Chronicle of Higher Education*, August 2, 2021.
[6] PBS 2005, "Declining by Degrees, Higher Education at Risk,"
[7] Wellmon 2021

It is well known that the two critical success factors in K-12, especially in early-age education, are teacher quality and class size, which means we need more and better teachers. Poorly educated teachers produce poor K–12 education. Many high school graduates enter higher education unprepared, imposing costly, less successful remedial coursework on undergraduate programs. And the vicious cycle continues.

I.29

Undergraduate education produces professionals and researchers -- the upper half of figure 4. Low-quality graduates make professional work, research in particular, costlier and, in time, force the nation to outsource needed skills — meaning fewer high-paying jobs for citizens.

I.30

Education is one of the most labor-intensive production systems, meaning that, more than other industries, the education enterprise needs a better-educated workforce. Education is perhaps the only industry that has to produce its own entire workforce. Undergraduate education is the root that feeds a nation's scientific and professional leadership. Low quality and higher costs erode that position.

Having a well-educated labor force increasingly becomes more critical as we move further into the Knowledge Age.

I.31

Whether our focus should be on early childhood education or beyond, the question is, "Where should we allocate educational resources to get higher and faster returns?" The answer you will find in this book is implementing MCCE design — employing the available information technology in a robust, restructured core operation of undergraduate education.

The Creeping Corruption: Selling Enrollment and Diplomas versus Selling Education

I.32

As a "business," higher education institutions must sell enrollment to stay financially viable. Students, however, buy an ambiguous blend of products/services called education. The real value, though a vague and immeasurable part of the blend, is the presumed growth in knowledge, skills, and character. The visible part of the purchase is the course and program content, with varying quantity and quality, within a container called a "diploma." What is seen from the outside are the prized diploma, the brand, the label, and the grades on the transcripts.

I.33

More than half of some seven thousand post-secondary institutions are four-year colleges. A small percentage are highly reputable institutions selling luxury-brand diplomas with first-class educational content. They range from the likes of MIT and Harvard to other high-quality institutions with equal or less glamorous names. They produce high-quality learning but at exorbitant costs.

Below that top, the content quality and rigor dive down drastically, but the cost, relative to the institution's quality, does not come down proportionally. On a hypothetical scale, the ratio of *actual learning outcome* to cost dives down, meaning students increasingly pay largely for the

diploma and get less education, Figure Intro.5. Towards the lower part, they get nearly empty diplomas from the burgeoning "diploma mills." [8]

"Even at the top, there is much room for quality improvement," says Derek Bok is president emeritus and research professor.[9].
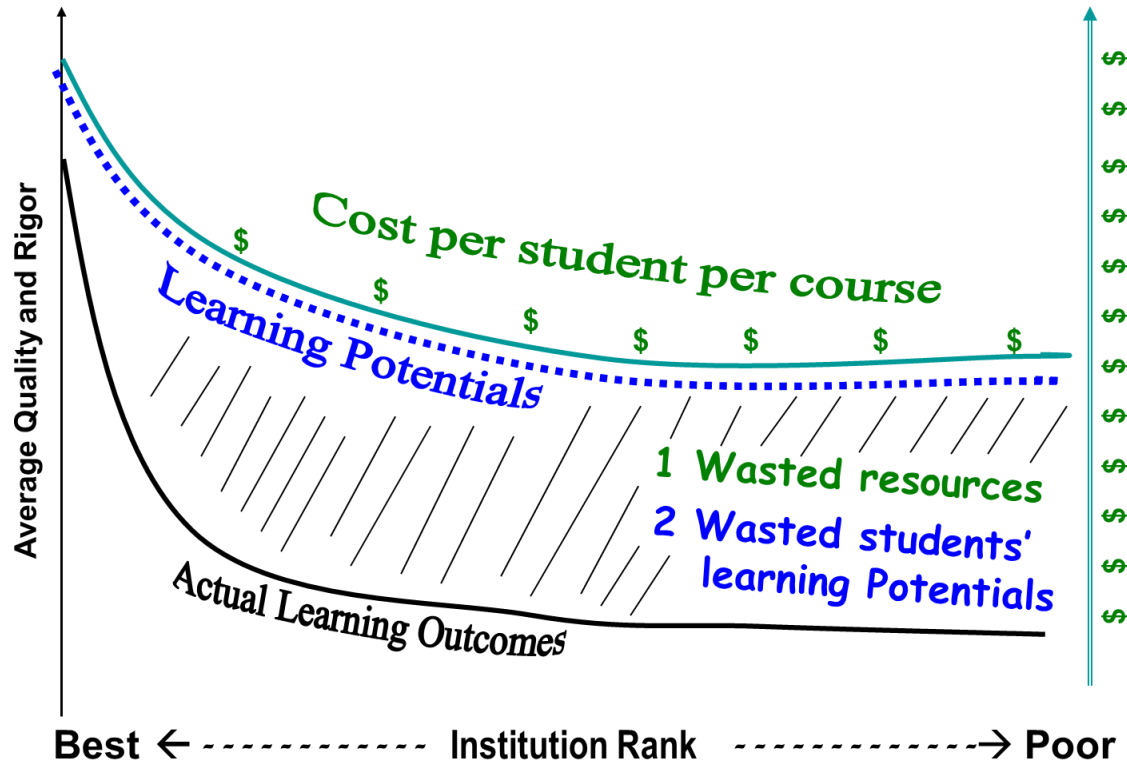

Figure Intro.5, Education Cost and Quality, a Conceptual View

The Wastes in the Present System

I.34

The gap between the two curves in Figure Intro.5 represents two sets of wastes: (1) underutilized physical, financial, and faculty intellectual assets, and (2) the huge, wasted learning potential of millions of students enrolled in below-the-top institutions. These students soon join the workforce. Their learning deficiencies translate into the national loss of productivity and competitive advantage. Should any participant (students, faculty, administrators) take the blame? No. The blame falls on systemic and structural flaws in an outdated system.

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[8] See Forbes.com, Maldonado 2018, "According to figures from the Federal Reserve Bank of St. Louis, the average annual growth in wages was only 0.3% between January 1989 and January 2016. The cost of attending a university increased nearly eight times faster than wages did.

[9] Bok 2007.

Figure 5 is an assertion based on the author's experiences from a lifetime of studying, researching, and teaching in seven different institutions and observing many others on advisory boards and at conferences. However, as you read further into the book, overwhelming evidence and observations are presented to support the assertion.

I.35

Many are resigned to the fallen quality and rigor and accept that "top students go to the top schools and less talented go to second and third-rate ones." Why should we accept such a ghettoization of education and loss of resources and learning potential? Why accept the damages of flooding the market with empty or half-empty diplomas (chapter 5)? Education technology and our managerial abilities offer new and expansive opportunities to provide a spectrum of solid programs — from highly practical to highly theoretical.

The Enrollment Pressure Moves Many Institutions Toward "Diploma Mills"

I.36

A diploma mill is an institution where learning is often of low quality and usually optional, but diplomas are given regardless. While a few students get the most out of the learning opportunity, the rest, to varying extents, finish classes with trivial content, pass through trivial exams, get a bogus grade in exchange for paid enrollment, and graduate with an empty or semi-empty diploma. "Diploma mill" is a highly subjective and observable term but hardly measurable. Some are worse than others. That is why they cannot be fought through legislation and legal channels. But they can and must be discredited. Diploma mills are the elusive plague of education. Chapter 4 shows the forces that push otherwise legitimate institutions toward semi-diploma mills. Chapter 5 details the damages this deceptive plague brings.

MCCE prevents such corruption by (a) decoupling exams and grading from instructors and (b) creating an uncompromising grading system (chapter 4).

Poor Literacy in the Face of Increasing Complexity, Misinformation, and Disinformation

I.38

The level of literacy needed is relative to the complexity of the world in which one lives. (Complexity is defined in chapter 1, 1.08.) Education enables individuals to understand the surrounding complexities and long-term consequences of their personal and collective decisions and actions.
Poor national literacy is the primary threat to democratic societies, where voters determine society's fate. It means the voter has to have enough powers of analysis to understand the complex issues of our time, such as:

- information, misinformation, and disinformation — the prevailing "arts of the lie" adding deception and confusion to the complexity;

- substance versus showmanship; and

- short-term gains against long-term costs, e.g., understanding that massive national debt is the collective equivalent of a person living on credit cards.

I.39

Illiteracy no longer means the inability to read, write, and do mundane arithmetic. In the 21st century, literacy means the ability to engage in lifetime learning, and that needs a fundamental background of perpetual relearning and retraining. For example, if you go to communities of unemployed coal miners and steelworkers, you can feel how much pain is caused by the present lack of ability or opportunities for retraining (chapter 7). These workers are not illiterate in the traditional sense. Most, if not all, have at least a high school education, yet they often don't have enough education in their background to make a transition to new ventures.

I.40

The result of literacy must be the belief in and respect for science. Believing in science does not mean believing in a particular scientist or even a community of scientists. The literate person will have a better chance to discriminate facts from false when false is called "alternative facts." Modern education is supposed to train logical minds. Yet we see large groups of people fall prey to cult leaders. The phenomenon points to shallow and narrow public education. Whole person education will find remedies.

Superficial education disguises poor literacy. It is worse when it also carries diplomas, which gives the person the illusion of knowledge.

Mass Education and Social Justice

I.41

While "social justice" is not a well-defined phrase, it is something real in the heart and mind of every human on the planet. It has been at the core of social, ideological, and political struggles. What is relevant to this book is the role of education in social justice. For centuries, workers of feudal lords and slaves were denied education. Overt formal slavery is gone, but its substance, human exploitation of all kinds, continues. The level of exploitation, nevertheless, has a reverse correlation with workers' level of general education. Mass access to quality and comprehensive education means gradual freedom from worldwide exploitation.

Offering a strong and meaningful formal education through the internet will emancipate many remote and deprived people, especially those under brutal dictatorships. Under fanatical regimes, girls' education is especially under siege. While overt and reported kidnappings and assaults are well reported, covert impediments to girls' education are widespread and unaccounted.[10]

MCCE Promotes Egalitarian Education

I.42

As a staunch believer in the market economy, I view egalitarianism as an energizing force for "*demand side*" economics — not by government borrowing and spending short-term fixes but long-term solutions through mass access to meaningful education. A population armed with meaningful education will, in turn, stimulate *supply-side* economics.

Positive egalitarianism is not the *imposition of equality* but the promotion of *equal opportunities*.

The greatest equalizer is expanding mass access to real education — locally, nationally, and globally.

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[10] **Chibok schoolgirls kidnapping** (Borno State, Nigeria,) **toxic gas-poisoning of many girl schools in Iran** (BBC) and **in Taliban-dominated areas** (New York Times).

MCCE will unleash the tremendous untapped potential of Western education (American in particular) to expand freedom and prosperity in both "free" and "controlled" parts of the world.

Freedom and prosperity in the freer world are limited by the greed of selling diplomas that, at best, offer shallow education and, at worse, empty diplomas. As mentioned, with shallow education, prosperity remains limited and insubstantial, and democracies remain fragile and under threat.

In the ideological, dictatorial, and religiously controlled parts of the world, education, at best, is severely channeled and dictated and, at worst, restricted by poverty, prejudices, and segregation. However, these controlling regimes are increasingly unable to prevent the spread of digital interconnections. Systems like MCCE will seep through these connections. Beyond moral responsibility, promoting worldwide freedom and prosperity through Western/American education will have a further material effect on the freedom and prosperity of the free world as well.

4. The Impediments to MCCE

The Taboo of Mass Production in Education

I.43

For many educators, any combination of "mass," "industrial," and "education" sounds like an alarming taboo. And the taboo has been sold to the public as well. Their legitimate concern is: "How will you accommodate the uniqueness of each student's abilities and interests in a mass-production system?" Customization (personalization) of college education is MCCE's response to this concern.

I.44

The stigma of the abuses of the Industrial Age reinforces the taboo: robber barons, sweatshops, reckless environmental damages, "small is beautiful — big is impersonal[11]," etc. The taboo is rooted in the stigma of soulless manufacturing machinery — not recognizing that the notion of industrial orchestration has positively evolved into other industries and organizations. Not many can see that mass access to entertainment or software products, for example, is due to these industries' adaptation of particular genres of industrial orchestration.

I.45

MCCE can do what theater's evolution to cinema and television has done. First, the film industry has provided mass access to less privileged and remote communities. Second, it has expanded the theater's limited scene and scope to heaven and earth. Cinema expanded the horizon for the masses, from the depth of the oceans to the outer reaches of heaven, from reality to imagination, from atoms and quarks to the edges of the universe, and from the beginning to the end of time. MCCE will adopt (not clone) certain skills from movie production and distribution to make learning more enjoyable.

I.46

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[11] Schumacher, *Small Is Beautiful: Economics as if People Mattered*, 1973, which reflected a major social debate during 1970s.

To break this crippling taboo, the image of mass production has to change from manufacturing to a broader notion of industrial-scale orchestration. Major film studios, Microsoft, and Google, are not clones of manufacturing but different genres of industrial-scale orchestrations. They have adopted the hallmarks of industrialization, replacing scattered *"shop mode"* operations with team orchestration in a centralized/decentralized structure of modern businesses. MCCE adopts this formula but creates a new industrial-scale orchestration genre designed for education.

(See transitional implementation of MCCE in Chapter 6.)

The Equilibrium of Comfort and Profits

I.47

The daring part of implementing MCCE will be overcoming the resistance to change: faculty and administration are comfortable with the status quo and may feel threatened by any major changes.

I.48

Where massive investment in an existing system is at stake, fundamental change is resisted even when change offers great opportunities (chapter 6).

The Wrong Experts to Evaluate MCCE

I.49

While a small percentage of top institutions represent American education, especially to the international community, they camouflage what lies beneath. Top academics and professionals who only have experience in the top universities perhaps see no serious problems with higher education. They see their high quality at an exorbitantly high price as "You pay for what you get." Many of them have no idea what is happening below that top. They think most below-the-top institutions are a lighter version of top universities. No! Below-the-top institutions have structural and policy flaws emanating from "enrollment centrism." Top institutions do not have enrollment problems. They have far more applicants than their capacity. They thus do not have the experience of seeing how enrollment pressures on faculty and administration corrupt the learning process (chapter 4).

Moreover, the proposed MCCE goes contrary to the interests of top research universities: their undergraduates (from out-of-state enrollment, in particular) are the cash cow that finances a large part of their graduate programs.

Unfortunately, the public and policymakers only listen to such elites to find remedies for all problems. If you want to assess what real learning quality is produced and what is sold in the lower ninety or so percentage of institutions, ask, confidentially, the faculty with experience in those institutions to verify the facts presented in this book.