The Eleven Distinctions

Acknowledgements

I am indebted to Stephen Hoenack for advising my initial thoughts on human agency, guiding me toward important distinctions, and introducing me to the great thinkers cited in this paper.

Dedication

This thesis is dedicated to Mary Clare, my wife and best friend.

And, of course, to the little man who calls me daddy: Elliot.

Abstract

This paper discusses eleven distinctions that develop ideas about how society can ensure that every individual is given the capacity to reach her highest potential. The distinctions show us that the mother-child (and/or caretaker-child) relationship and early environments not only overwhelmingly shape each person's development, but also serve as a model for human development in all stages of life; that humans control their environments; that the nature of work is changing and the only successful response is continual learning; that systems designed to share knowledge with and collect knowledge from all participants build trust and accomplish goals. Problems with current learning systems, how value is derived in the modern economy, and implementation of Learning and Working Communities are also discussed.

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Introduction

When my son Elliot was born and slept in my arms for the first time, I couldn't help but dream of his future. Swaddled in a cotton blanket, unable to do virtually anything beyond eat and sleep, I reflected on the fragility of this gift. As parents, my wife and I would be fully responsible for Elliot's development. We would determine his sense of safety and security as he confronted the dangers of life. Our actions would shape Elliot's earliest experiences of agency, though much of his development would also depend on the supportiveness of society as a whole. His experiences would also shape his own capabilities to support the agency of those around him. With a mother and father perceiving and supporting his true needs at every stage of development, I thought, Elliot would be able to master anything he was interested in and achieve any goal he set for himself.

I share this moment because for me it has become a lens for thinking about not just Elliot's potential, but about every individual's unique human potential. The challenge I address in this paper is about how our society can ensure that every individual, regardless of socioeconomic status, is given the capacity to reach her highest potential. Specifically, what principles of learning, thinking and human development could facilitate such an important goal?

Research presented in this paper follows my personal evolution of thought over the last several years concerning workforce development, and more broadly, human development. The paper is divided into eleven sections, each presenting one major distinction about human agency. Though all the distinctions are connected, they are presented separately to enhance the clarity of each one. Distinctions in the context of this paper can be understood, as Jane Jacobs explained, as "differentiation emerging from generality." That short description, she

asserted, "describe[s] development on every scale of time and size, animate and inanimate."[1] Jacobs clarified this statement by showing that "development is an open-ended process, which creates complexity and diversity, because multiplied generalities are sources of multiplied differentiations." [2] A basic example could be objects found in nature, such as sticks and stones, which become differentiated into tools such as spears and hammers. Once differentiated, spears and hammers become generalities that can then be the source of additional differentiations such as bows and arrowheads. In other words, development occurs when someone sees differences where others see uniformity. Thus, development of all kinds, including human development, can be understood as a series of distinctions that lead to further distinctions.

I use distinctions not only because they are drivers of sustainable growth in the modern economy (see Distinction #8), but because they clarify many aspects of the debate between education, workforce development and economic development professionals. By singling out each distinction, I hope to pinpoint important differences where many policy makers see uniformity. Understanding these differences, I believe, is one of the first steps toward a system whose parts work together to help every individual reach her highest potential.

As such, the reader can understand the distinctions presented below to be the building blocks of a theory of human agency. The eleven distinctions build upon each other. The first is the foundation upon which all human agency develops. The last is a revelation about the purposes of human agency and provides the insight that at its best, learning is a gift.

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[1] Jacobs, p14.
[2] Jacobs, p14.

As the reader will see, the paper concludes by discussing a system that would harness each of the eleven distinctions. This includes a brief proposal for Minnesota's Department of Employment and Economic Development (DEED) to begin creating Learning and Working Communities (LWCs) in selected industry clusters. LWCs would integrate the pursuit of knowledge (learning) with the application of knowledge (working) in order to draw out the gift of learning between individuals, from infancy through adulthood. The goal of the implementation would be to ensure that every individual is given from a young age environments in which she can develop the capacity to reach her highest potential.

Distinction #1: Only the "art of loving" can nurture the infant's "True Self" into being

As British psychiatrist and psychoanalyst John Bowlby compellingly documents in the trilogy *Attachment and Loss*, infants instinctually seek a secure relationship with their mothers[3], without which normal social and emotional development cannot occur. My own experience watching Elliot interact with his mother clearly affirms that the mother/child attachment is a sacred one upon which development rests. It is so universal that Bowlby observes that "for babies to love mothers and mothers to love babies is taken for granted as intrinsic to human nature."[4]

In Bowlby's quote above, we can understand the term "love" to be the concept Erich Fromm described in *The Art of Loving*. To love, Fromm wrote, one must see another for who they truly are rather than ascribing to that person what you want them to be. In other words,

[3] The term "mother" is used throughout the paper. Although in Distinction #1 I am mostly referring to biological mothers, the term can mean the caretaker closest to the child in its first years of life.
[4] Bowlby, p. 242.

love is an activity by which one must be "in a constant state of active concern with the loved person,"[5] respecting their true self and needs. As Fromm stated,

> To respect a person is not possible without *knowing* him; care and responsibility would be blind if they were not guided by knowledge. Knowledge would be empty if it were not motivated by concern. There are many layers of knowledge; the knowledge which is an aspect of love is one which does not stay at the periphery, but penetrates to the core. It is possible only when I can transcend the concern for myself and see the other person in his own terms.[6]

Transcending concern for oneself in order to support another is exactly what mothers do for infants. By accurately perceiving the infant's needs, a mother is able to support the social and developmental needs of her child.

Bowlby's attachment theory and Fromm's definition of "love" show us that the degree to which a mother responds to an infant's true self and needs – by caretaking or a lack thereof – determines not only attachment or non-attachment between mother and child, but also how well the child develops. Bowlby's distinction between the consequences of attachment versus non-attachment is strikingly similar to the distinction drawn by Donald Winnicott, British pediatrician and psychoanalyst, between "True Self and False Self." Winnicott believed that a "good enough mother" is what nurtures an infant's "True Self" into being.[7] At the moment when the infant realizes that he is separate from the mother, the "good enough mother" senses this dramatic change and alters her behavior accordingly. As Winnicott writes of that transition,

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[5] Fromm, p128.
[6] Fromm, p29.
[7] Chescheir, p224.

the “good enough mother … starts off with an almost complete adaptation to her infant's needs, and as time proceeds she adapts less and less completely, gradually, according to the infant's growing ability to deal with her failure."[8] It is apparent that Winnicott’s “good enough mother” must defer her own desired activities in order to fully support the development of her child. This gift of sacrifice for the support of another’s development is the true embodiment of what Fromm described as the art of loving. These realizations lead us to the first distinction, that only the “art of loving” can nurture the infant’s “True Self” into being.

If a mother does not respond to her infant’s needs and attachment does not occur, the emergence of the “True Self” is impeded by the “False Self.” The “False Self” is what develops when the art of loving is ignored, when an infant is forced to fit the mother’s needs or the mother’s false sense of who the infant should be. From the moment of realizing his separateness, an infant in this situation must earn the caretaker’s acceptance by directing his agency toward the usually narcissistic needs of the caretaker. Rather than deferring to the infant’s needs, the caretaker’s dysfunctional needs often include certain childhood accomplishments that make the caretaker feel more accepted by those from whom she seeks approval. As Martha Chescheir describes Winnicott’s theory, the “False Self …hardens into a defensive façade born out of the struggle to accommodate and please an overly strict and demanding mental image of mother.”[9] Winnicott and Bowlby show us that on a most basic level, a child develops normally when her needs are perceived and supported. Conversely, a child develops abnormally when her needs are not met, especially when the child believes she must be perceptive about the caretaker’s needs and meet those needs in order to get her own

[8] Winnicott, 1971, p14.
[9] Chescheir, p224 citing Winnicott, 1960.

needs met. The benefits of having one's needs met in infancy cannot be overestimated. Infants whose needs are met are able to enjoy and take pleasure in the world because they don't have to constantly worry about whether their needs will be met or if they will be respected for being their "True Self."

Bowlby, Fromm and Winnicott tell us much about the various outcomes that result from the mother-child relationship and how these relate to human development. First, mother/child attachment develops when a mother is sensitive and responsive to her child's needs. Second, a parent's caretaking serves not only to meet an infant's needs and develop their "True Self," but also as an internal working model for the child that will guide future development. Third, infants that experience a lack of parental care are unable to develop attachment behaviors and begin to develop a "False Self."

Because of her importance, the "good enough mother" should be recognized as a model for all human development throughout the lifespan. Her feelings of attachment as a caretaker are motivated by the feelings of affiliation Bowlby described as well as her self-efficacy as a caretaker. She is cultivating her infant's development and shaping the next generation. By taking focus off her own needs in order to focus on the development of her child, she is showing us the "art of loving." What she is giving is a gift to the infant and society as a whole.

People of all ages, not just infants, have a need for sensitive caretakers and coaches. Mothers themselves, in order to meet the demanding needs of their children, need supportive caretakers and coaches. Elderly, who have an increasing need for support, also need caretakers who are sensitive to their unique needs and desires. Though sad, many institutions in our society operate without this basic respect for individuality. Consider the multitude of nursing

homes that ignore the individual needs of their clients and the unhappiness this manifests. Just as an infant brings out the gift of sensitive caretaking in mothers, society has a need for institutions that bring out the gift between individuals. The "good enough mother" shows us that the best measure of human development in society is how giving individuals become by deferring their own goals in favor of the needs of other people to develop and strengthen their own agency.

Distinction #2: The infant adapts to its early environment and these adaptations persists into adulthood

An increasing number of studies have been analyzing the overwhelming impact of a child's early environment. By looking at the outcomes of people growing up in disadvantaged environments, the studies find that early disadvantage overwhelmingly shapes an individual's potential. The term "disadvantage" in this context usually means socioeconomic variations in resources available to a child, such as living in poverty, having poorly educated parents, and being raised in a single-family home. As reported, the number of children growing up in disadvantaged environments is increasing, with relatively more children born into disadvantaged families than 50 years ago.[10]

For example, as respected economist James J. Heckman shows in a recent report, "most of the gaps at age 18 that help to explain gaps in adult outcomes are present at age five."[11] In other words, Heckman asserts that the most important factors determining success in adult life (employment, income, health) can be attributed to environmental factors of early childhood.

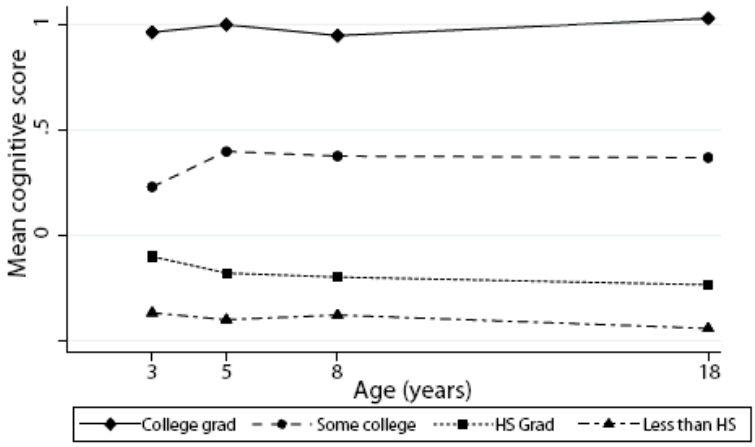
[10] Heckman, p3.
[11] Heckman, p. 12.

Heckman uses Figure 1 to show the gap in cognitive test scores by age of low birth weight children stratified by the mother's education. As Heckman states about Figure 1:

> Gaps in ability emerge early and persist. Most of the gaps at age 18 that help to explain gaps in adult outcomes are present at age five. Schooling plays a minor role in creating or perpetuating gaps. Even though American children go to very different schools depending on their family background, test scores are remarkably parallel. [12]

The conclusion drawn from Heckman's report and others is that children born in disadvantaged environments receive less stimulation and resources for child development, effectively limiting their potential for the rest of their lifetime. To be clear, Heckman suggests that childhood disadvantage is the result of the quality of nurturing environment and not just financial resources available or the presence or absence of parents. Yet, many people interpret Heckman's data as a direct correlation between socioeconomic status and lifetime achievement. With that oversimplified assumption, policymakers are apt to believe that money alone will be able to reduce disadvantage and improve lifetime achievement. An example of this hopeful prescription is

Figure 1: Trend in Mean Cognitive Score by Maternal Education

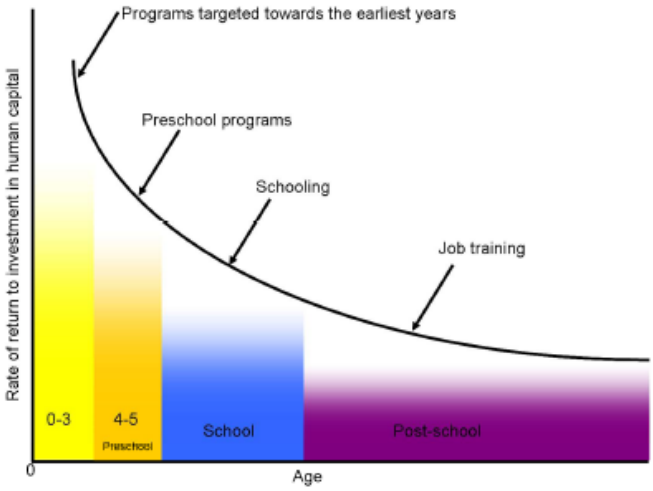


[12] Heckman, p. 12, 80. Note: Using all observations and assuming that data are missing at random. Source: Brooks-Gunn, Cunha, Duncan, Heckman, and Sojourner (2006).

Figure 2, which provides a guide for thinking about return on investment at various stages in human development.[13] Though instructive and perhaps somewhat true, oversimplified conclusions such as these miss what Distinction #1 and #2 emphasize.

What is being missed is the overwhelming importance of interactions between mother/child discussed in Distinction #1, which can but do not necessarily vary with socioeconomic indicators of disadvantage. For a deeper look into how early environments impact an infant's development though its lifetime, the second distinction examines why the "good enough mother" is able to determine so much in the infant's development. Specifically, because the infant is dependent on the mother for his survival and existence, he will adapt in every way possible to avoid losing her. As psychologist Alice Miller compellingly documents in "The Drama of the Gifted Child," children have an amazing ability to perceive and respond intuitively to the need of the mother for him to "take on the role that had been unconsciously assigned to him."[14] Thus, in order to meet his own needs, the infant will adapt to the role the mother expects of him. Further, children also adapt to their early environments in a similar way through various pressures and incentives.

Figure 2: Returns to a unit dollar invested



[13] Heckman, p91. Note: Return to a Unit Dollar Invested at Different Ages from the Perspective of the Beginning of Life, Assuming One Dollar Initially Invested at Each Age.
[14] Miller, p8.

The results of early adaptation to fulfill a role that incentivizes a "False Self" involve what Miller describes as

> the art of not experiencing feelings, for a child can experience her feelings only when there is somebody there who accepts her fully, understands her, and supports her. If that person is missing, if the child must risk losing the mother's love or the love of her substitute in order to feel, then she will repress her emotions. She cannot even experience them secretly, "just for herself"; she will fail to experience them at all. But they will nevertheless stay in her body, in her cells, stored up as information that can be triggered by a later event."[15]

Using a series of case studies, Miller shows how the child's early adaptations manifest into adulthood personalities. From the child growing up in situations of outright abuse to the gifted child whose parents demand a role of world-class performance and achievement, failure of the mother to see and accept the child for who they really are results in repression of the "True Self" and manifests associated pathologies in adulthood. These pathologies include depression, anxiety, "False Self" behavior, and even mental illness. Miller's work spans all socioeconomic classes and thus, rather than focusing on various factors of disadvantage, shows us what is of real importance:

> The child has a primary need from the very beginning of her life to be regarded and respected as the person she really is at any given time. When we speak

[15] Miller, p9-10.

> here of "the person she really is at any given time," we mean emotions, sensations, and their expression from the first day onward.[16]

Miller's work allows us to see that being respected as a unique person is what really matters, not necessarily measures of early socioeconomic disadvantage and their relation to mean cognitive scores. For example, even a child from high socioeconomic status who performs well on mean cognitive tests, such as those reflected in the top line of Figure 1, may be suffering from "False Self"-driven behavior. In fact, the world is full of highly skilled people who were given "False Self" rewarding incentives by well-intentioned parents. Sometimes the genius surgeon whose parents pushed him from the day he was born to be a doctor is the most unhappy. His entire life has been motivated by an exaggerated "False Self" and the related incentives.

Distinction #3: Self-efficacy results from developing competencies that produce results around one's interests

Self-efficacy, or belief in one's ability to achieve goals, is a major determinant in reaching one's highest potential. It should be noted that by "highest potential" I am not necessarily referring to graduating from college or attaining prestigious employment, but rather being one's "True Self" and developing competency around what one is intrinsically motivated to do.

As economist and philosopher Amartya Sen pointed out in his Tanner Lectures on the standard of living, there is much legitimacy in the assertion that this self-efficacy motivation is

[16] Miller, p6.

an essential part of the conditions of life. One's standard of living is more than socioeconomic status and the sum of physical resources one possesses. It also includes the capabilities one has to believe that she can be what she wishes to be. As Sen asserts, "the capability approach, broadly defined, is not concerned only with checking what set of bundles of functionings one could choose from, but also with seeing the functionings themselves in a suitable rich way to reflect the relevant aspects of freedom."[17] In other words, freedom is not just knowing what one could be, but includes knowing what one wants and believing one can achieve it.

Taking an example from my own experience, my first fulltime job out of college was working as employment specialist for a nonprofit organization that operated Hennepin County's welfare-to-work program. My job primarily consisted of writing resumes for individuals on welfare and helping them to find employment. What became clear to me very quickly after starting that job was that most welfare clients did not have the skills necessary to obtain or maintain employment in today's economy. In addition, they did not know what they could be or how they could possibly achieve any goal they set.

It's not just that my welfare clients lacked education or credentials. Even the least educated welfare clients had completed 10 or so years of public education. While true that most came from disadvantaged backgrounds, it was stunning how many operated under a "False Self" façade. Their past and present was virtually absent of mastering tasks that involved their interests and thus, many lacked self-efficacy.

[17] Sen, p50.

Self-efficacy results from developing competencies around one's interests that produce results. In the context of the four sources identified by Psychologist Albert Bandura[18] that affect self-efficacy, it becomes clear that interest, competencies and results must be involved to develop self-efficacy:

1. Experience – By developing competency in an activity one is interested in and experiencing success (i.e. producing results), one raises self-efficacy. The opposites, mastering an activity one is uninterested in or experiencing failure that does not lead to success, lowers self-efficacy.
2. Modeling – By seeing someone develop a competency that the observer is interested in, the observer increases her own self-efficacy.
3. Social Persuasions – By receiving encouragements in one's area of interest, one raises self-efficacy. By receiving discouragements (or even receiving encouragements exclusively in areas unrelated to one's interest), one lowers self-efficacy.
4. Physiological factors – By perceiving one's response to stress as normal, as opposed to an indication of inability, one raises self-efficacy.

As one can see, the relationships and environments presented in Distinctions #1 and #2 heavily determine each of the four sources of self-efficacy. Notice how fundamentally the gift of giving to another is involved in the four steps above. In many ways, respecting a child's "True Self" is a requirement to nurturing their self-efficacy. By supporting their interests and helping them

[18] Bandura.

develop competencies that produce results, adults give children the gift of freedom. This freedom is the knowledge that they have the capability to achieve their highest potential.

Distinction #4: Infants teach us the importance of education as competency building around interests

The first three distinctions examine how early relationships and environments affect human development. The fourth distinction explores the learning style of infants to show that infants are perhaps the most sophisticated learners and can teach adults a lot about the purposes of thinking.

Consider eleven-month-old Elliot and his learning style. The amount he learns on a daily basis is extraordinary when compared to formal schooling. No one is teaching Elliot how to learn. Rather, he explores by nature, trying out what he sees his parents doing. As long as my wife and I provide a loving, trusting environment where we respond to his needs, Elliot learns because he is making connections in the real world as he tries, fails, and finally succeeds achieving his goals. As economist Stephen Hoenack notes,

> If you look, you'll see that until the infant starts school his or her learning is incomparably more sophisticated than school learning; it's much more like practice-based professional education or learning on-the-job. …[Little kids] rethink situations as they are mastering competencies they'll use all their lives.

> On the way they often fail, but they persist at rethinking situations until they make the right connections. They are truly learning how to think.[19]

Hoenack's final point here about "learning how to think" is extremely relevant to any learning system that aims to help its learners develop self-efficacy and an ability to overcome frustration.

In an influential essay entitled "A Theory of Thinking," pioneering psychoanalyst W. R. Bion examined how "inability to tolerate frustration can obstruct the development of thought and a capacity to think."[20] By learning to control frustration, learners are able to solve complex problems by determining the causal forces at play and then determining ways to influence these forces through action. For Bion, this is the entire purpose of thinking. It is about exercising competency when confronted with real-world changing conditions.

Watching Elliot on a daily basis, it seems obvious that he is learning to overcome frustration at not being able to do what he sees others doing. By overcoming his frustration, Elliot is able to think about how he can achieve his goals. In the end, Hoenack and Bion's points show us that the learning methods used by infants are the same methods that society should use to tackle humanity's greatest challenges.

Certain teaching methods have been developed that harness an infant's inherent desire to learn while at the same time adapting to each learner's unique style. In the following example, note the similarity between the "good enough mother" nurturing the infant's "True Self" and what the teaching method is intended to accomplish. One successful approach is that developed by behavioral science researchers Betty Hart and Todd Risley to teach children

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[19] Hoenack, 2007, p2-3.
[20] Bion. p181.

language. In recent years, the approach has been increasingly popular as an innovative teaching method for children with autism.[21] However, the three main components of incidental teaching can enhance learning for all ages. The three aspects of incidental teaching are "the student's initiation, its consequences, and the teacher's request for elaboration."[22]

Perhaps the best way to describe how incidental teaching can be used is to relay a simplified story of how Hart and Risley taught preschool children the names of colors.[23] While studying preschoolers, they found that children learning colors in small groups rarely used color names during free play session. In order to make the names of colors functional, Hart and Risley arranged the free play environment so that children were required to describe the color of a toy before using it. By controlling the environment, the study revealed that "color naming increased dramatically in the free play situation" and "children continued to use them after the experimental procedures were discontinued.[24] Though elemental, this story illustrates how incidental teaching controls the environment in order to make learning functional. The key for incidental learning teacher is to consistently take time to ask the learner exactly what she means and then respond by evidencing understanding of the learner's point. The importance of this approach is that the teacher is responding to the learner's needs, which makes the learner feel understood and valued. Again, notice the striking similarity between the incidental learning approach and how the "good enough mother" respond to an infant's needs in Distinction #1.

When using the incidental learning approach, the learner must initiate the process (just as infants direct their own learning). What is important is that the learner initiates the

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[21] Reference McGee, G. G., Krantz, P. J., & McClannahan, L. E. and similar research.
[22] Hart and Risley, p413.
[23] Story adapted from Hart and Risley, p408-409.
[24] Hart and Risley, p411.

interaction, not the question per se. The consequences of initiation are what will determine whether the learner increases or decreases his/her number of future initiations (just as infants adapt to their early environment). Thus, the teacher's response to the learner's initiation is paramount. As Hart and Risley write, "initiations and consequences are inextricably linked; they are the foundations of the process."[25]

Distinction #5: Education as competency building around interests is much more important than education as fragments

The fourth distinction contrasts the learning style of infants presented in Distinction #4 with teaching approaches in schools. Schools often utilize a one-size-fits-all approach that provides myriad incentives for "False Self"-driven behavior and rewards. Returning to my experience working with welfare clients, it is astonishing to consider the extent to which the public school system has failed – literally and figuratively – many of my welfare clients. Schools have failed students in many ways, but perhaps one of the foundational issues is a teaching approach that is focused on incentives of educational attainment to the exclusion of competency building around interests.

American educational psychologist Joseph Rezulli asserts that every theory of teaching, learning and instruction can be categorized into one of two general models: the deductive model and the inductive model.[26] The deductive model uses "prescribed, presented lessons with predetermined pathways for arriving at what students typically perceive as being the right

[25] Hart and Risley, p413.
[26] Renzulli, p8.

answer."[27] This is the standard classroom in the United States, from preschool through college. There is nothing inherently wrong with this method of instruction. However, as the first four distinctions have shown us, advances in human development are derived from nurturing the individual's "True Self" in a supportive environment that fosters self-efficacy. This approach is the essence of supporting human development.

Deductive models as used in schools in the United States do not present the optimal environment because the student's "True Self" is not respected, and thus students are not allowed, much less encouraged, to develop competencies around their areas of interest. For example, consider the environment of the average elementary or high school classroom. Better yet, think back to your own personal experience in the classroom. A teacher lectures you and a group of peers in a subject pre-determined by curriculum. Whether or not the subject is interesting to you is of no concern to the teacher or school system. The concern is primarily about educational attainment: the measurement of your academic performance in the form of test scores. The recent No Child Left Behind Act emphasizes this approach, judging the success or failure of schools based on achievement in test scores. Needless to say, you may remember being "educated" but not developing competencies in your areas of interest in school.

Following a curriculum that ignores each student's "True Self" and interests is education that is fragmented. Its focus is not about supporting human development but rather about demanding educational achievement. To the student's whose "True Self" is ignored, there is no rhyme or reason to their educational pathway – it is a puzzle whose pieces don't add up to anything tangible. Just like the narcissistic mother described by Alice Miller who demands the

[27] Renzulli, p8.

child play a "False Self" role, curriculum of the deductive approach reinforces the requirement that approval comes from serving the needs of others (including educational institutions).

One scientific study[28] by a group of cognitive-behavioral psychologists illuminates the importance of how young learners are engaged, even those that are performing well in traditional schools. This study was particularly redeeming to me as I had always done well in school yet felt limited by its classroom and group learning approach. Mihaly Csikzentmilhalyi, Kevin Rathunde, and Samuel Whalen studied the experience of high school students in a variety of situations. At various times during the school day, researchers used a beeper to contact the students and ask what tasks they were doing and how they felt about it. Students could classify tasks as "obligatory class work," "voluntary class work" and "extracurricular activities." It is no surprise that the researchers found that when engaged in obligatory class work, which largely featured lectures, students felt unmotivated, unsuccessful and dissatisfied. As the authors state,

> Obligatory classes appear to pose challenges that outstrip and depress a student's well-being. Faced with such experiences, it is no mystery that teenagers typically do not want to be in class, even teenagers whose academic success might lead us to expect otherwise.[29]

Conversely, when engaged with extracurricular and volunteer activities, students reported feeling successful and satisfied with meeting their expectations. These activities were often

[28] Csikzentmilhalyi, Rathunde, and Whalen, p50.
[29] Csikzentmilhalyi, Rathunde, and Whalen, p180.

competency-building and led the students to have positive feelings over an extended period of time.

The results of a one-size-fits-all educational system based on fragments are devastating. Again we can use the Heckman data (Figure 1), this time to highlight that formal schooling does little to affect abilities that are already present in children at age 5, regardless their socioeconomic background. Notice that the lines in Figure 1 are remarkably horizontal, telling us much about the impact of schooling between ages 5 and 18. As Miller's work on early adaptation showed, test scores high or low don't necessarily tell us the whole story. High socioeconomic status may be an indicator more about an environment (i.e. parents) that is supportive of educational achievement rather than an environment that supports the "True Self." Even students doing extremely well in school, as some of those referenced in the study by Csikzentmilhalyi, Rathunde, and Whalen, reveal that education ignoring the "True Self" results in students feeling unmotivated, unsuccessful and dissatisfied. Thus, any alternative to the current education model predominantly used in the United States must engage learners of all abilities and all socioeconomic levels based on their interests. It must draw out the gift in educators in giving the gift, supporting each child's agency development with fascinating environments that build self-efficacy.

The opposite of the deductive model is the inductive, which occurs in real-world settings where there aren't "right answers." In the inductive model, Renzulli explains, learning occurs in within a more natural chain of events, such as in a research laboratory, business office, or film studio:

> The goal in these situations is to produce a product or service. All resources, information, schedules, and sequences of events are directed toward this goal, and evaluation (rather than grading) is a function of the quality of the product or service as viewed through the eyes of a client or consumer. Everything that results in learning in a research laboratory, for example, is for present use; therefore, looking up new information, conducting an experiment, analyzing results, or preparing a report is focused primarily on product delivery rather than some amorphous future situation. Even the amount of time devoted to a particular project cannot be determined in advance because the nature of the problem and the unknown obstacles that might be encountered as the problem unfolds prevent us from prescribing rigid schedules.[30]

Renzulli's description of the inductive learning model shows how to provide options for developing competencies around a variety of interests that produce results. This is the way to beat the odds with every individual, regardless their socioeconomic status. It provides a means for individuals to reach their highest potential through the development of expertise.

As psychologist and psychometrician Robert Sternberg points out, intelligence can be viewed as developing expertise.[31] "The main constraint in achieving expertise," Sternberg writes, "is not some fixed prior level of capacity, but purposeful engagement involving direct instruction, active participation, role modeling, and reward."[32] Recent studies back up this assertion with findings that expert performance, or what some call genius, is not the result of

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[30] Renzulli. p8.
[31] Sternberg, 1999, p359.
[32] Sternberg, 2003, p. 71.

inherent or developed IQ, but rather the result of hard work and consistent practice. Dr. K Anders Ericsson, professor of psychology at Florida State University, comments on the studies by saying, "A lot of people think highly talented people can become good at anything rapidly, but what this study says is that nobody has been able to rise without having practiced for 10 years."[33]

Forcing children and adolescents to sit in classrooms and engage in rote learning exercises, an approach that is in many ways not compatible with their needs or the realities of the skills-based economy, doesn't work. It does not engage learners for who they are. Purposeful engagement requires acknowledging the "True Self" and providing options for developing competencies around a variety of interests that produce results. This is the way to activate intrinsic motivation that will not only close socioeconomic gaps, but also open the way for everyone, including those already performing well in terms of educational achievement, to make vast advances in human development.

Distinction #6: Humans, unlike other animals, control their environment

Distinction #6 takes the first four distinctions and investigates the ways in which humans can control their environment to enhance human development. In the spring of 2008, I was introduced to the idea that humans, unlike other animals, have the ability to control their environment. In one Humphrey Institute class, my professor Dr. Stephen Hoenack, referred to a profound quote by British mathematician and biologist Jacob Bronowski:

[33] Weinstein.

> Among the multitude of animals which scamper, fly, burrow and swim around us, man is the only one who is not locked into his environment. His imagination, his reason, his emotional subtlety and toughness, make it possible for him not to accept the environment but to change it. And that series of inventions, by which man from age to age has remade his environment, is a different kind of evolution – not biological, but cultural evolution.[34]

At the time I began appreciating Bronowski's profound assertion about human agency, I was working for the state of Minnesota as a workforce development policy analyst and had been thinking about workforce development strategies in the typical way policy makers are apt to do, focusing on various components of our education and training systems such as credit requirements, credentials, remedial training programs, and financial aid. Despite reading hundreds of policy papers from across the country, attending workforce development conferences and facilitating stakeholder meetings, I had rarely come across any approach that focused on the environment in which workforce development occurs. Attention was paid to the skills workers needed and the classes that promised those skills, but the actual learning environment that would be experienced by learners was ignored.

Bronowski's distinction highlights two points. First, how integral environment is to learning and second, how humans can change their environments to meet their needs. Consider environment as it relates to the first five distinctions presented in this paper. Distinctions #1 and #2 revealed the overwhelming importance of early relationships and environments, especially for children under age five. Distinction #3 described how early

[34] Bronowski, p19.

environments determine an individual's self-efficacy. Distinction #4 emphasized how an environment that responds to a learner's interests harnesses the infant's unique learning style and activates intrinsic motivation. Distinction #5 presented the failing environment of schools and pointed to the importance of competency building around interests that produce results.

The second point, how humans can change their environment to meet their needs, is perhaps the more important point. The next several distinctions explore humans' needs in the context of the modern economy and identify how humans can meet them by making creatively adapting the environment to enhance and harness continual human development.

Distinction #7: The nature of work has changed and will continue changing

In rich countries, distribution of wages and earnings have widened over the last three decades, with wages of high income workers increasing much more quickly than that of low and middle income workers. Research indicates that much of this disparity is a result of a shift in the demand for labor.[35] As economist Timothy F. Bresnahan writes, "employers' demand has shifted from low- and middle-wage occupations and skills toward highly-rewarded jobs and tasks, those requiring exceptional talent, training, autonomy, or management ability."[36] In many ways, this has been brought on by the rapid adoption of the computer, which has changed the tasks demanded of workers.[37]

Based on an analysis of occupational job requirements from 1960 to 1998, economists Autor, Levy and Murnane found that "shifts in job content away from routine tasks and toward

[35] Autor, Katz, and Krueger.
[36] Bresnahan, p1.
[37] Autor, Levy and Murnane. p1280.

nonroutine cognitive tasks are a pervasive feature of the data and are concentrated in industries and occupations that adopted computer technology most rapidly."[38] Nonroutine cognitive tasks were identified as tasks that involved flexibility, creativity, generalized problem solving capabilities and complex communications. In addition to replacing workers completing limited and well-defined routine tasks, computers have complemented the productivity of workers carrying out complex and/or problem solving tasks.[39] In addition to computers, changes international trade and the lessening role of unions have changed the workplace and the skills worker need to succeed.[40]

What do changes in the nature of work have to do with human development and theories of learning? Largely, the changes imply that value in the modern economy is derived from humans making the right distinctions. The next section, Distinction #8, clarifies this point.

Distinction #8: Value in the modern economy is derived from the ability to see distinctions

The data on the changing nature of work in Distinction #7 points to a very important point: distinctions, or the ability to see differences where others see uniformity, are where workers provide the most value in the modern economy. Just as Bronowski's astute distinction about human's cultural evolution shaped my thinking about workforce development, distinctions allow individuals in business to make innovations and discoveries. Hence, distinctions can be understood to be drivers of sustainable growth in an economy.

To better understand how distinctions drive sustainable growth, we turn to the three universal principles of development that Jane Jacobs presents in *The Nature of Economics*: (1)

[38] Autor, Levy and Murnane. p1315.
[39] Autor, Levy and Murnane. p1280.
[40] Kirsch, Braun, Yamamoto and Sum. p3.

differentiation emerging from generality; (2) differentiations becoming generalities from which further differentiations emerge; and (3) development depends on co-developments.[41] While these principles apply to all types of development, from evolution to astronomy, consider the following example of human development that Jacobs presents to exemplify the progression through the three principles:

> Possibly the very oldest economic generality is the practices of sharing…[Not] random or inadvertent sharing but calculated, intended sharing as an institutionalized social practice. …As far as economic life is concerned, the major differentiation that emerged from sharing was the practice of trading."[42]

Since the time when trading differentiated from the generality of sharing, the practice of trading has depended heavily on co-developments, including developments such as telephones, printing and transportation.

As it relates to modern work, it is apparent that many professions (and their related responsibilities) have differentiated from generalities into specialties. For example, consider the multitude of health care fields that have emerged from the general practice doctor. Each sub-field began when someone made a distinction where there hadn't been one before. With the new distinction and the use of important co-developments, entire new fields developed. For example, the specialty field of somatic psychotherapy developed from the web of connections made between physical therapy, psychotherapy, dance, and natural medicine.

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[41] Jacobs, p16-19.
[42] Jacobs, p27.

In the skills-based economy, differentiations are constantly evolving. Many of today's jobs will not exist a decade from now. Similarly, economists forecast that many of tomorrow's jobs do not exist in today's economy.

As the economy develops, new jobs (and their corresponding responsibilities) replace old jobs. Under the current education and workforce development system, the creation of new jobs effectively mean workforce shortages until workers are able to gain the skills and competencies to successfully complete new tasks. In other words, each new development and discovery results in workforce disequilibria. This is the creative destruction that economist and political scientist Joseph Schumpeter asserted is the "essential fact about capitalism."[43] It is an incessant revolution of the economic order, with new professions effectively destroying older ones.

As economist Theodore W. Schultz points out, people reallocate their resources to in response to disequilibria:

> People who supply labor services for hire or who are self-employed are reallocating their services in response to changes in the value of the work they do. So are housewives in devoting their time in combination with purchased goods and services in household production. Students likewise are reallocating their own time along with the educational services they purchase as they respond to changes in expected earnings along with changes in the value of the personal satisfactions they expect to derive from their education.[44]

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[43] Schumpeter, p83.
[44] Schultz, p827.

Schultz shows us that there are economic incentives to reallocate resources and humans respond to these incentives to the best of their ability.

In today's economy, incentives revolve around a worker's skills. Businesses pay a premium to workers able to complete new, non-routine tasks that involve creativity and problem solving because of the high value they bring to the firm by making important distinctions. In *The Innovator's Solution: Creating and Sustaining Growth*, Clayton Christensen and Michael Raynor show that innovation is not, as many mangers believe, unpredictable and random. Rather, Christensen and Raynor reveal that the processes that lead to innovation are clear and predictable. For example, managers frequently make decisions based on a set of theories from their past experiences, yet these experiences do not necessarily lead to new growth. The essential problem is akin to Plato's "Allegory of the Cave," with managers in a cave of past experiences trying to direct innovative work outside the cave. To avoid indeterminate situations such as these, Christensen and Raynor transform the inderterminate into practically useful problematic situations. Their description of the three steps of theory construction highlights the role distinctions play in problematic situations:

1. "Describ[e] the phenomenon that we wish to understand"[45]
2. "Classify the phenomenon into categories …in order to highlight the most meaningful differences in the complex array of phenomena"
3. "Articulate a theory that asserts what causes the phenomenon to occur and why. The theory must also show whether and why the same causal mechanism might result in different outcomes, depending on the category or situation"

[45] Christensen and Raynor, p12-13.

Step 2, essentially the act of making important distinctions, is perhaps the most practically important. As Christensen and Raynor emphasize,

> We can trust a theory only when its statement of what actions will lead to success describe how this will vary as a company's circumstances vary. …Shoddy categorization has led to one-size-fits all recommendations that in turn have led to the wrong results in many circumstances. It is the ability to begin thinking and acting in a circumstance-contingent way that brings predictability to our lives.[46]

By thinking and acting in circumstance-contingent ways, workers can distinguish meaningful differences that lead to innovation.

Thus, in an economy where new ideas and innovations are constantly upgrading knowledge and skill requirements, firms have a huge interest and need for a society – both children (future workers) and adults (current workers) – that knows how to learn new competencies quickly, and in the process make important distinctions.

Distinction #9: Continuous learning is a necessary requirement for economic success in the modern economy

Distinction #7 and #8 lead us to the realization that continuous learning is a requirement for success (for individuals and firms) in the modern economy. The old system in which businesses need to wait for new workers to be formally taught in schools how to successfully complete newly discovered tasks is outdated, unproductive, and unprofitable. However, some

[46] Christensen and Raynor, p16-17.

companies have been able to address what economist and philosopher Freidrich Hayek called the essential problem of humanity: "the unavoidable imperfection of man's knowledge and the consequent need for a process by which knowledge is constantly communicated and acquired."[47]

Two real-world examples provide the rationale for why continual learning in work environments is necessary and profitable.[48] The first example is General Motors. In the early 1970s, the company was the largest and most profitable company in the world. Committed to retaining its successful formula, the company remained loyal to high-volume execution and centralized control. Yet, in the decades following, the company has consistently faltered even as it has continued to hone its historical formula for success. In some ways, Amy C. Edmondson points out, General Motors focused on execution to the exclusion of learning. "Great execution is difficult to sustain," she writes, "not because people get tired of working hard, but because the managerial mind-set that enables efficient execution inhibits employees' ability to learn and innovate."[49] General Motors did not built learning into their business as usual. Indeed, at the time of this thesis' publication, GM was believed to have weeks rather than months left before it ran out of cash without federal aid.[50]

The second example is General Electric, a company that built an expectation that learning will continuously occur into its standard business practices. Unlike General Motors, which posted a $38.7 billion loss in 2007 and had an unknown future at the end of 2008, GE

[47] Hayek, p530.
[48] Edmondson, p60-62.
[49] Edmondson, p62.
[50] Ramsey and Miles.

reinvented itself through innovation in multiple fields and posted a $22.5 billion profit in 2007. Edmondson calls this approach "execution-as-learning."

If business as learning is about creating an environment in which learning continuously occurs, learning for innovation is about cultivating an environment in which new ideas can grow, even if those ideas sometimes lead to failure. For this reason, an increasing number of leading companies including 3M and Lockheed are encouraging their employees to spend time pursuing new ideas that may (or may not) lead to success. Companies do this, Franz Humer, CEO and chairman of Roche, explains, because "competitive advantage lies in the ability to create an economy driven not by cost efficiencies but by ideas and intellectual know-how."[51]

Take for example Google's entrepreneurial approach to innovation. Employees are encouraged to take up to one day a week working on their own start-up ideas. These are called Googlettes. The social networking site Orkut is just one example of a project that developed out of employee pet projects. Other companies might look at this type of employee freedom as a risky or unprofitable, but Google co-founder Larry Page insists that this type of risk pays off with innovation:

> In our first founders' letter in 2004, we talked about the risk profile with respect to doing new innovations. We said we would do some things that would have only a 10% chance of making $1 billion over the long term. But we don't put many people on those things; 90% work on everything else. So that's not a big

[51] Goffee and Jones, p72.

> risk. And if you look at where many of our new features come from, it's from these riskier investments.[52]

In other words, Page is insisting that giving workers the opportunity to be continuous learners will deliver return on investment and profit. Continuous learning is the means to discovering the distinctions that are valuable in the modern economy (Distinction #8). This rationale strongly supports what Thomas Friedman asserts in *The World is Flat* should be the new social contract between employers and employees in the flattening world: "You give me your labor, and I will guarantee that as long as you work here, I will give you every opportunity – through either career advancement or training – to become more employable, more versatile."[53]

Distinction #10: Decentralized knowledge is what facilitates continuous learning in a system

If Distinction #9 reveals that continuous learning is necessary, Distinction #10 reveals the solution to facilitating continuous learning is a system that decentralizes knowledge. Two contrasting examples, one concerning a work environment and the other a learning environment, highlight how decentralizing knowledge empowers individuals to be continuous learners.

The first example occurred in Japan after World War II, a county with millions of casualties, crippled industries, and destroyed infrastructure. The country's future seemed hopeless. Though the United States government played a key role in Japan's initial recovery, many, including the chairman and former President of Toyota, point to W. Edwards Deming as a

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[52] Serwer.
[53] Friedman, p375.

leading factor in Japan's unprecedented success in the decades following the war. As part of a plan to rebuild Japan's economy, Deming developed methods of management and statistical quality control and taught these methods to some of Japan's top management and engineers. His system approach, which encouraged cooperation of interdependent components and directed knowledge in order to reach one main objective, dramatically improved product quality. The approach, which is still widely used today, led companies such as Toyota to become market leaders around the world because they sought continuous improvement and innovation. Deming's approach started with top management and influential shareholders and getting them on board with a systems approach.

As it relates to controlling the environment, Deming's system approach provides a process for continuous learning by supplying information to individuals on the goal of the system, how the system works, and how her work fits into the work of others. In other words, information is decentralized so that every individual is able to contribute her knowledge on how well the system is working to accomplish its goal. It is an environment that empowers every employee. As Deming wrote in the Preface to his book *The New Economics*, which introduces his systems thinking and the transformation he calls Profound Knowledge, "The aim of this book is to start the reader on the road to knowledge, and to create a yearning for more knowledge."[54]

Consider how the environment Deming worked to create plays out on the assembly line floor: if for one reason or another the system isn't working well, any one employee can pull a rope called an andon cord and stop the entire assembly line until the problem is solved. Perhaps most important, workers feel trusted to speak up about problems because their

[54] Deming, p xi.

knowledge is sought after and utilized. Workers know that top management actually cares about what they have to say.

The second example comes from research on how children learn language in a preschool classroom. Using the incidental teaching approached mentioned in Distinction #4, Hart and Risley found that children were able to learn and develop their language skills more quickly and effectively than when taught using traditional classroom instruction. The key to the incidental teaching approach and its success was that teacher took the time to ask the child exactly what she meant and then responded by evidencing her understanding of the child's point. The importance of this approach is that it responds to the child's needs. The child is able to trust that her voice will be heard and learning can occur on the basis of her interest and initiation.

Although the preschool classroom is strikingly different from the factories of Japan, the preschool example similarly respects the individual and her contributions to the continuous learning process. For this reason, everyone must be a teacher and a learner at the same time for continuous learning to truly occur. Learners become the teachers, for example, by driving the continuous improvement process in the factories of Japan. Experts become the students, with preschool teachers listening and learning from the interests and actions of preschoolers.

In both examples, systems are employed to decentralize knowledge. Well-designed systems enable each participant to contribute their knowledge to the task at hand. As a result of this sharing, each participant in the system benefits from every other person's knowledge. In this way, each person is able to contribute to the system's end goal. Distiction #8 and

Distinction #9 show us that a business system's goal in the modern economy must be to promote continuous learning, because this is the way to distinctions and profit.

Amazingly, continuous learning is exactly what reaching one's highest potential all is about. This is where Distinctions #1 through #5 connect with Distinctions #6 through #9. Distinctions #1 through #5 were largely about enhancing human development by drawing out the gift of giving between individuals. Distinctions #6 through #9 were primarily about continuous learning as the means to discovering distinctions and thus, sustaining profit. To be clear about the connection, the parenting tasks of responding to an infant's needs and the business goals of promoting continuous learning share the same goal: helping individuals reach their highest potential. In addition, the means to achieve the goal is the same: seeing people for who they really are and deferring one's own goals in order to support the development of another. We can do this by supporting competency development around one's interests that produce results. Mothers of infants and businesses with workers can encourage and support this development by providing interesting environments that draw out the gift between individuals.

Distinction #11: Learning is a gift that is based on trust

Note the importance of trust – between individuals and between individuals and systems – in the ten distinctions above. This final distinction highlights two deeper, fundamental issues about human development: first, cultivation of the "True Self" and subsequent human development can only occur successfully when trust is present between individuals. Second, when trust is present, education can be a gift between individuals. The gift cannot be bought or sold, but only drawn out between mother and child, learner and teacher,

when one sees and respects another for who they really are. Just as you can't force a mother to see her child for who he really is, you can't force someone to give the gift to someone else. You can't force someone to take focus off their own needs in order to focus on the development of someone else. But, you can attempt to draw out the "art of loving" through systems that are designed to draw out the gift between individuals.

Despite the changing nature of work and subsequently, the increasing economic demand for workers able to complete complex and non-routine tasks, current educational institutions (including training operations at businesses) do not operate as a system that draw out the gift of learning between individuals. Though it would be to the benefit of individuals, businesses, and society as a whole, education in the United States does not operate with the overarching goal of giving individuals the capacity to reach their highest potential. As was related earlier, schools are designed to prepare children for more schooling, teaching them to be students rather than empowering them to develop competence in areas of interest that produce results.

Learning divorced from real-world settings, just like employment devoid of learning opportunities, hinders people from attaining their own highest potential and prevents people from giving their talents to others, especially those in need. This point highlights the need for trust in real-world endeavors between individuals and between individuals and systems. To develop her full potential, one must be able to trust that her needs will be met, her voice will be heard, and her actions matter. It is impossible not to note the similarity between this last statement and the relationship between mother and child in Distinction #1. In a fascinating essay entitled "The Economics of Mistrust," John O. Whitney, Professor of Management and

Executive Director of the Deming Center for Quality Management at Columbia Business School, makes a keen insight about business seeing and treating employees for who they really are:

> Until the obvious becomes profound, that businesses are people, reward schemes [for employees] will continue to miss the mark. A more effective approach should acknowledge that the whole person comes to work. People cannot check "home" at the door when they come to work any more than they can check "business" at the door when they arrive home. Individuals are whole human beings in both places. …It is our human baggage that moves us forward. We are all enriched when our anger, discontent, yearnings, need to excel, and our need for change is transmitted into action; new products and services and social and economic systems are created. These are the forces that transform our lives.[55]

Environments that see people for who they really are and respond to their needs build trust. These environments draw out the gift between individuals and drawing out the gift between individuals is the means to developing the capacity to overcome frustration at the unfamiliar and thus reach our highest potential.

One kind of environment that would do this is Learning and Working Communities (LWC) as conceived by Stephen Hoenack. LWCs "provide adult-mediated stimulating environments for children to become a part of while building language and other cognitive skills."[56] LWCs are located at businesses so that children and youth have access to adults who can act as mentors, coaches, and role models. Business environments, as opposed to schools,

[55] Whitney, p7.
[56] Hoenack and Anderson, p11.

are able to provide learners with cutting-edge technologies, innovations, and most importantly, role models who are consistently learning and applying knowledge. However, LWCs are not just for the benefit of children and youth. In LWCs, adults also act as continuous learners, constantly developing their skills and sharing knowledge. In many ways, children in LWCs are the teachers, inspiring and teaching others with their insatiable appetite for learning and overcoming frustration.

Two brief examples may serve as a guide to thinking about how the pursuit of knowledge (learning) could be integrated with the application of knowledge (working) so that children and adults are able to learn together in real-world settings. The first is that of medical students in their first year of residency. On a daily basis, student residents are thrust into real-world settings, facing new situations with every patient they see. They are faced with the chaos of the unknown under the supervision of a fully licensed physician. Needless to say, the learning curve is steep because learning is hands-on. By seeing student residents for who they really are, mentoring physicians can instruct each student in a way that best supports her development into a doctor. The student feels free to take charge of situations and do what they think is right because they know that the physician is right behind them if unexpected obstacles arise or mistakes are made.

The second example is that of any high school football team or marching band. Before the school year starts in the fall, high school fields full of young people practicing under the hot sun and supervision of coaches. Coaches know that the players themselves will be the ones performing on the field, so they try to get the kids practicing as soon as possible. Similar to medical school residencies, learning is hands-on and applied. Practice is frequent and under the

supervision of a coach who can make sure that the practice is actually preparing the learner for real-world performance. The results are tangible; at the end of the day, the offensive line is able to work as a team to score touchdowns and the marching band is able to perform its halftime routine.

Who and what makes the student resident a doctor, the trombone player a marcher, the worker an innovator, the infant an adult who himself supports the agency of others? Competency-building around interests that produce results with supportive caretakers and coaches. With that environment of support and trust, with that gift from those who defer their goals in favor of the development of another, we learn, we succeed, we love. We can be our "True Self" and support another's "True Self."

Implementing LWCs

While the eleven distinctions point us toward a theory of human agency, the question of how to build and implement learning environments, such as LWCs, in education, labor markets, and businesses remains. This section addresses an approach that could be taken in Minnesota by the Department of Employment and Economic Development (DEED). The approach is just the tip of the iceberg in terms of transforming DEED's focus to supporting all stages of human development. However, even incremental changes may point to additional policy and system improvements based on the eleven distinctions.

As Autor, Levy and Murnane showed earlier in the paper, an increasing number of jobs in the economy require that workers are able to complete nonroutine cognitive tasks. Overall, analysis of occupations, including entry-level positions, shows that the majority of jobs require

nonroutine analytic and interactive skills.[57] In addition, Bresnahan reminds us that demand is increasing for workers, in both highly paid and lesser-paid occupations, with "people skills."[58] A good working definition of people skills, taken from David Morand, Associate Professor of Management in the School of Business Administration at Penn State, is "the ability to get along with, to develop trusting relationships with, and communicate effectively with others."[59]

In the context of these economic messages about the demand for future workers, one of DEED's main responsibilities is to increase the supply of workers that are able to meet the demand businesses have for creative workers with "people skills" who able to solve complex problems. In order to meet this responsibility, this paper recommends that DEED should push for the creation of LWCs in the most productive and innovative industry clusters.

Clusters are "geographically proximate group[s] of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities."[60] As Michael Porter explains, viewing economic and workforce development through the lens of clusters is valuable because

> Clusters, broader than industries, capture important linkages, complementarities, and spillovers of technology, skills, information, marketing, and customer needs that cut across firms and industries. …Such connections

[57] Autor, Levy, and Murnane, p 1298.
[58] Bresnahan, p.395.
[59] Morand, p21.
[60] Porter, p199.

> are fundamental to competition, to productivity, an especially, to the direction and pace of new business formation and innovation.[61]

Firms in the most productive and innovative clusters already supply environments of continuous learning and employ workers that are able to make important distinctions.

Creating LWCs in highly productive clusters makes sense because LWCs focus on harnessing business environments of continuous learning to the benefit of learning participants, incumbent employees, and firms themselves. By inviting learning participants of all ages into dynamic business environments, LWCs promise a way to dramatically increase the supply of workers able to solve complex tasks. The following principles serve as a guide for thinking about how learners interact with business environments and incumbent wokers.

Principles of LWCs[62]

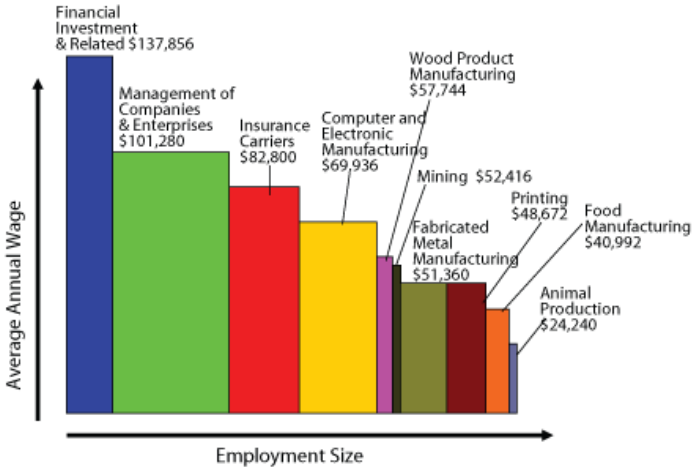
- Match learners to LWCs on the basis of interests
- Make real-world accomplishments the basis of learning
- Ensure that learning occurs in the presence of highly-competent performers
- Guarantee that all participants have responsibilities that matter to the work of the firm
- Infuse the habit of supporting others within all tasks
- Encourage cooperation to ensure that participants are able to meet their goals
- Enable every participant to be coached and also a coach to others

[61] Porter, p205.
[62] These principles are based on Part VI of Hoenack, 2002.

With these starting principles, learners in business environments are able to build competencies around interests that produce results. As such, we can see that LWCs are in the interest of firms that need an increasing number of highly-skilled workers.

By analyzing industry clusters in Minnesota, DEED identified the clusters that employ the most people and pay the highest wages (see Figure 3[63]). As an example, this paper focuses on the financial services cluster because it is one of the largest in Minnesota and also demonstrates the highest average wage. As highlighted in a recent article by Mary Schmidt in DEED's *Minnesota Economic Trends*, the industry has the types of jobs highlighted by Autor, Levy, and Murnane, relying on productivity-enhancing technology, innovation, and highly-skilled workers[64]. Further, as Schmidt reports, the industry grew faster in Minnesota in the last decade than the nation as a whole, indicating long-term growth and future viability.

Figure 3: Employment and Average Annual Wage for Selected Industry Clusters – Minnesota, 2007



The latest news from the evolving financial crisis shows us that financial services firms need not just smart people, but good thinkers who are also good people who act with highest integrity and respect. For this reason, LWCs offer a high value-add opportunity for financial services firms. LWCs build competence around interests in addition to fostering high levels of respect and integrity that nurture an individual's "True Self." Developing the "True Self" is

[63] Uphoff, p2. Source: DEED, QCEW.
[64] Schmidt, p7.

important because we can see that the responsibility born by investment bankers is as great as the airline pilot and brain surgeon. It is easy to see how the actions of a pilot or surgeon immediately affect their clients' lives. Yet, it is no less true of good bankers who support the lives of thousands of people with loans, investments, and insurance. Bankers have to care about other people in order to do truly effective risk management. It is not possible to separate competency from professional integrity. They are one in the same and both depend on the highest standards of human development.

LWCs in the financial services cluster can provide the type of environment that supports high standards of human development for all participants. Though not guaranteed that firms will support LWCs within company walls, firms will no doubt follow their self-interest. Therefore, it should be DEED's strategy to show firms that LWCs will increase the supply of highly-competent workers. If that argument is convincingly made, firms will enthusiastically support LWCs will all their resources.

Conclusion

The eleven distinctions above develop our thinking about how society can ensure that every individual is given the capacity to reach her highest potential. Each of the distinctions is important in its own right and must be considered when thinking about how to achieve every individual's highest potential. No learning system or profit-seeking organization can afford to ignore any one of the eleven distinctions. For example, the mother-child relationship (Distinction #1) determines so much in each person's development that society (including businesses) would reap huge benefits by not only supporting it in every way possible, but by using it as a model. Similarly, the overwhelming impact of early environments (Distinction #2)

and self-efficacy development (Distinction #3) should be recognized for their importance and cultivated. Many school policy and workforce development reforms, no matter how well-intentioned, have not and will not be able to overcome these three important distinctions without realizing the how to draw out the gift between individuals.

Society must learn from infants how to think and learn (Distinction #4). Their tenacious ability to overcome frustration – even when failing repeatedly – is nothing short of awe inspiring. Schools should be designed to harness this ingenuity, not restrict it (Distinction #5).

In the end, humans must grapple with the fact that they control their environments (Distinction #6) and that these environments control our fate. The nature of work is changing (Distinction #7), just as the world is constantly changing, and the only successful response is continual learning (Distinction #9). Indeed, only as continuous learners will humans be able to sustainably identify, benefit and profit from distinctions (Distinction #8). When systems are designed to share knowledge with and collect knowledge from all participants (Distinction #10), trust develops and goals can be achieved. In that type of environment, we can give of ourselves to others (Distinction #11) – there is no greater gift. By realizing that fact, every individual's highest potential is within reach.

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