IN PRAISE OF ILLEGIBLE LEARNING: Reasons for and Difficulties of Challenging Artificially-Ordered Schooling

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Abstract

The history of American k-12 schooling can be best understood as an attempt to make illegible processes legible - that is, a process of taking informal and often localized educational practices and reorganizing them in a more formalized way so that they can be standardized and understood by those not involved in those processes. Conversely, self-directed forms of education (such as unschooling and "free"/democratic schooling), are best seen as reactions against this trend toward legibility, as attempts to reintroduce illegibility into the learning process.

In this paper, I will draw on the works and terminology of anthropologist James C. Scott to argue that the various historical attempts to introduce legibility into American k-12 schools have not only been politically successful, but have perpetuated the idea that learning is by nature a legible and orderly process. This, I will argue, is particularly consequential for advocates of self-directed forms of learning (SDE) who now face the tough task of not only arguing that legibility measures in schools need to be changed (such as replacing one type of assessment with another), but that attempts to make learning legible are themselves obstacles to good learning.

This paper will proceed in four parts. First, I will give an overview of James Scott's conception of legibility: why are demands to impose legibility on illegible practices demanded,

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by whom, and what are the potential dangers of these demands? Next, I give a brief overview of various ways American k-12 education has been transformed by demands for increasing legibility. Third, I use arguments from two prominent advocates of SDE - John Holt and Daniel Greenberg - to show that one common, if not always explicit, theme of pro-SDE arguments is that demands for legibility in the learning process ultimately undermine the learning process, that legibility measure should not be reformed but removed. I conclude by arguing why I think this puts SDE advocacy in an unfortunate position, of having to convince those accustomed to learning as a legible process of a position (SDE) that eschews attempts to measure its outcomes by culturally dominant metrics of legibility.

What Legibility Is, Who Values It, and Why

In 1999, anthropologist James C. Scott published the book *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. What does it mean to see like a state, and why, in Scott's view, do those attempts often fail? To answer these questions, Scott introduced the idea that governments (whether states or other governing bodies) seek to impose legibility on previously illegible processes.

In brief, legibility is an attempt to take a social process that might be difficult for outside observers to understand and formalize it in a way that makes it readable (hence the term "legibility") to those outsiders. I might watch a couple cook together who has been cooking together long enough that they do not bother to write recipes down or explicitly plan to coordinate their movements. One might add spices based on what feels right, the other might take an item off of the stove when it looks done, and each party coordinates their movement with the other based on informal cues like body language or tacit experience in working with the

other. As an outside observer, it may be hard for me to make sense of precisely what is going on, because only the insiders - the couple - "know" how this order is being generated. Demanding legibility would mean demanding that they formalize or codify what they are doing in a way that is explainable to me and others.

Supervising bodies like states do this also. When governing a citizenry, states often have incentive to codify and standardize practices that might make sense to the citizenry in its uncodified, illegible form, but will not make sense to state actors.

> State simplifications such as maps, censuses, cadastral lists, and standard units of
> measurement represent techniques for grasping a large and complex reality; in
> order for officials to be able to comprehend aspects of the ensemble, that
> complex reality must be reduced to schematic categories. The only way to
> accomplish this is to reduce an infinite array of detail to a set of categories that
> will facilitate summary descriptions, comparisons, and aggregation. (Scott, 2008,
> p. 77)

Scott uses several examples to illustrate, from doomed attempts at state-planned "scientific forestry" to attempts at standardizing patrilineal surnaming and official state language practices. As one example, Scott (2008) recounts the transformation of cities from a continually ad hoc connection of streets "having developed without any overall design" (p. 53) to the modern grid system with "streets laid out in straight lines at intersecting right angles" (p. 55). Before governments began to introduce a legible (to them) design into cities, Scott takes care to stress that the seeming disorganization of the pre-modern city or burgh not only wouldn't have troubled inhabitants, but the layout "would have been perfectly familiar, perfectly legible. Its very alleys and lanes would have closely approximated the most common daily movements" (2008, p. 53).

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What mattered to state actors, however, was not that the pre-modern cities were legible to inhabitants, but that they were legible to outside governors.

During the Baroque period, inspired by Descartes' and other Enlightenment figures' "strong aesthetic that looked with enthusiasm on straight lines and visible order" (2008, p. 55), Italian and other Western European state planners endeavored to make the previously winding and organically developed cities legible by reconstructing them in patterns easier to understand to governing outsiders.

> A square, ordered, formulaic military camp on the order of the Roman castra has many advantages. Soldiers can easily learn the techniques of building it; the commander of the troops knows exactly in which disposition his subalterns and various troops lie; and any Roman messenger or officer who arrives at the camp will know where to find the officer he seeks. On a more speculative note, a far-flung, polyglot empire may find it symbolically useful to have its camps and towns laid out according to formula as a stamp of its order and authority. Other things being equal, the city laid out according to a simple, repetitive logic will be easiest to administer and to police. (Scott, 2008, p. 55)

.   Scott gives another example of a successful attempt to impose legibility that is more germane to the field of education: the move to establish national languages. In particular, Scott discusses the example of nineteenth century Napoleonic France, where, prior to the invention of a standard French national language, there were a variety of local languages, each a "bearer of a distinctive history, a cultural sensibility, a literature, a mythology, a musical past" (Scott, 2008, p. 72). As early as 1635, the national government founded the Académie Française in an attempt to create a more unified and legible French nation, where all state documents could be written

and signed in one unified French language. This urge to enforce linguistic standardization only intensified after the French Revolution, where "French was seen as a bearer of a national civilization: the purpose of imposing it was not merely to have provincials digests the Code Napoleon, but also to bring them Voltaire, racine, Parisian newspapers, and a national education" (2008, pp. 72–73).

For the purposes of this paper, there are a few things we should note. First, while Scott leaves aside the question of whether there is possible benefit to attempts to impose legibility, he worries that a large downside - the reason why he believes so many attempts fail - is that these attempts reduce what Scott calls *metis*. Scott defines *metis* as "a wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment" (Scott, 2008, p. 313).

We might think back to my hypothetical demand to impose legibility on the illegible routine of the veteran but informal chefs. While there may be good reasons to demand that spices be added only by the dictates of a formal recipe or that each of them play roles specifically written out in advance, it also limits the type of discretion each has to improvise and change their approach with changing situations. It means they must now rely on explicit knowledge of the codified rules and less, if at all, on their intuition and tacit knowledge. Language provides another example. As linguists have noted (Curzan, 2014; Greene, 2018), attempts to codify language rules and word definitions inevitably ignore the organic and decentralized evolution of language, where words and rules change over time to fit different conversational needs in ways speakers may be wholly unconscious of. Legibility formalizes the less formal into the more formal, effectually providing one explicit way to do what could be done many (often improvisational) ways.

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Secondly, attempts at legibility tend to be made for supervisory reasons, by those outside a process who rely on legibility to supervise the proccess from without. While attempts at legibility could be requested by insiders to a practice (as a way to assist in learning the practice), the examples Scott gives, and those I give in the section below, were all attempts at imposing legibility by outsiders for largely supervisory reasons.

Lastly, while Scott doesn't focus on this explicitly, legibility also changes how the supervised or governed people come to think about the practice that has been changed. Before the advent of the centrally designed city, cities were an evolving network of roads that didn't need a particular order as long as the roads got people where they wanted to go. Now, we don't tend to think of a place as a proper city unless it resembles something like the grid system and is carefully organized by city planners (Jacobs, 1961). Language is a more obvious case. When a national language is created and enforced, it creates "a hierarchy of cultures, relegating local languages and their regional cultures to, at best, a quaint provincialism" (Scott, 2008, p. 73). People come to think that there is a "correct" way to speak, generally mirroring the speech rules of the standard language (Curzan, 2014), deviation from which is the mark of dialectal inferiority (McWhorter, 2018). We often come to regard sharing a common standard language as itself a condition and an expression of common national identity (Greene, 2011).

Learning and Schooling: From Illegibility to Legibility

In order to see how advocacy and argument for SDE can be seen as a reaction to demands for legibility in k-12 schools, we need to get a sense of what these advocates are reacting to**.** What structures in our education system have resulted for demands for imposed legibility, and how did they succeed? I will provide an overview of several of those demands and how they have arguably impacted the dominant cultural assumptions about learning and its

possibilities. Because many books have been written about the events and trends I describe, this section will be cursory. However, readers only need to peruse the titles of these books to get a sense that the trend has been from less to more legible learning institutions - *One Best System* (Tyack, 1974), *Education and the Cult of Efficiency* (Callahan, 1964), *An Elusive Science* (Lagemann, 2009), *The Allure of Order* (Mehta, 2013).

In the early republic even until the early 1800's, children's education tended to be largely informal in several ways. First, there were a variety of educational forms that bore no inter-institutional standardization, from less formal "dame schools" to apprenticeships to more formal "academies." Yet, even more formal educational options were less ordered (by the standards of legibility) than anything US schools know today. For instance, in "common schools" (the progenitors or "public schools"), curriculum was largely determined by the teachers, based on what they believed students needed, what area families wanted, and what materials were available in the school or brought by students (Kaestle, 1983). Since most formal schools were one-room schoolhouses where student attendance was irregular and not legally mandated, there was no formal system of age-segregation (Chudacoff, 1992). Typically, students progressed from one lesson to the next on an individual basis as determined by the teacher's judgment upon hearing the student "recite" the lesson, as to whether the student was ready to advance. School performance was also evaluated informally, generally when the school held an exhibition where the community and government officials could witness displays of student work, such as samples of student handwriting and student recitation of poetry or math equations (Reese, 2013).

In the mid 1800's, much of this began to change as reformers introduced various measures of legibility into the process. Reformers in states like Massachusetts sought to take what looked to them as a "miscellaneous collection of village schools" and organize it into "a

more unified system" (Tyack, 1974, p. 33). This entailed mposing measure of legibility. As with

Scott's examples, reformers knew that in order to develop a system, one needs to create

systematic processes which allow those at the top of the system to supervise the system's parts.

The first standardized tests were introduced in the city of Boston in 1845. Reformers like

Horace Mann and Samuel Howe, who "regarded statistics as the superior means to evaluate

schools," hoped that statistics on tests given both to the city's common and private grammar

schools would demonstrate the superiority of the former's methods (Reese, 2013, p. 110). Writes

Reese:

> These time-tested activities coexisted with the new world that reformers
>
> popularized: a world of tables, ranked lists, and quantitative analyses of pupil
>
> achievement. The first major written examinations did not transform local schools
>
> overnight, but they represented a new way of thinking about education that would
>
> never disappear, even when challenged and overshadowed by traditional forms of
>
> assessment in different times and places (Reese, 2013, p. 155)

This shift in thinking also included other moves by reformers to standardize processes of

schooling that would make the process legible to reformers, school boards, and schools. Tyack

summarizes some of the ultimately successful attempts by reformers to:

> [d]ivide the cities into attendance districts; calibrate upgraded primary and
>
> grammar schools into district classes in which children were segregated according
>
> to their academic progress; provide adequate schoolhouses and equipment; train
>
> and certify teachers for specific tasks within these graded schools, design a
>
> sequential curriculum or program that would be uniform throughout the city;
>
> [and] devise examinations which would test the achievements of pupils and serve

as a basis for promotion (and offer a basis of evaluating the teacher as well).

(Tyack, 1974, pp. 43–44)

The progressive era of the late 1800s and early 1900's extended these trends toward increasing legibility, trends that arguably persist to the present day. By the turn of the twentieth century, school reformers were becoming quite taken with the idea of "scientific management," pioneered by an industrialist named Frederick Taylor. Taylor believed "that there was one best way of doing any job and this method could be determined only through the scientific study of that job by experts with proper implements, i.e., a stop watch and recording card" (Callahan, 1964, p. 25). This, of course, demanded legibility by way of developing and assessing data points, and based on the results of these, standardization and codification of processes. Whatever might have previously been done by aid of workers' *metis* was now to be done according to a legible script borne of and measured by quantitative scientific calculus.

This fixation on legibility gained by statistics and subsequent standardization did not just happen in the K-12 system; it also affected how Colleges of Education conduct(ed) research. Lagerman (2009) tells the story of how the scientific management movement and the burgeoning academic field of Psychology helped to put educational research on firm (read: scientific) footing. Like Boards of Education, Colleges of Education were also influenced by this "romance with quantification" (2009, p. xi). Following Edward Thorndike's dictum that "whatever exists exists in some amount," Colleges of Education professionalized largely by downplaying research of a qualitative or holistic nature - where results were arguably less objective and variables were harder to control for - and putting "an extreme emphasis on quantification in educational study" (2009, p. 235)

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These principles were applied over the twentieth century to everything from how school budgets are managed to how students and teachers are assessed to how curriculum is to be developed. In his book exploring the persistence of standards and standardized testing movements in US k-12 schools, Mehta summarizes the history of standardization thus:

> In the longer term, the success of the reformers in the Progressive Era resulted in a shift from one-room schoolhouses to urban school systems, in which schools were expected to follow the directives of a central manager in a district office. This effectively institutionalized teaching, not as a profession under the control of its frontline practitioners, but as an activity performed within a bureaucratically controlled hierarchy. Teachers and schools, at the bottom of an implementation chain, were responsible primarily for implementing the ideas of central office managers. (Mehta, 2013, p. 251)

Reformers have repeatedly sought to understand (and often to use that understanding to control or change) k-12 schooling. They've done this by imposing various measures to ensure legibility, standardizing and codifying a learning process. Whatever good can be said about these attempts, they arguably have the same downsides as Scott notes. Critics from Dewey (1921) to Meier (2003) have argued that teaching and learning are often organic activities, where teachers and learners must be free to respond as situations demand, often in ways that can't be codified into legible scripts. In Scott's term, teaching and learning involve an incredible amount of *metis*.

In their successes at imposing legibility onto the learning process, reformers and planners also succeeded in solidifying in the public mind what Tyack and Cuban call "the grammar of schooling," those features of school that we have come to accept as normal and natural (1996). Culturally, we have become used to such legible features as age segregation, testing regimes, and

a curriculum created by experts that is partitioned into discrete subjects taught to all at a uniform pace and order. These and similar features, Tyack and Cuban argue, have acquired a political and cultural capital that proves remarkably recalcitrant to reform efforts.

> Congruence with that cultural template has helped maintain the legitimacy of the institution in the minds of the public. But when schooling departed too much from the consensual model of a "real school," failed to match the grammar of schooling, trouble often ensued. (1996, p. 9)

Arguably, one reason for this is that when an institution like k-12 schooling is made legible, there are political and cultural reasons why stakeholders do not wish to undo features that afford legibility or tamper with them in a way that could possibly reduce the information legibility provides. Yet this is the type of thing advocates of SDE would have to convince a world used to legibility to do. It is to that case we now turn.

A Reason for Return to Illegibility

In 1964, John Holt published a book called *How Children Fail*. He would go on to advocate for SDE and coin the term "unschooling" (Stuart, Woodard, & Scott, 2015). *How Children Fail* was a collection of notes Holt wrote as a frustrated school teacher. Therein, Holt puzzled over why ostensibly bright students could exhibit such strange behavior in classrooms, like offering an answer to a question before, it seemed to Holt, they had time to formulate an answer, or make what seemed like careless mistakes over and over again.

The answer, it seemed, was largely to do with the structures of schooling itself, "that we, our classroom, our position as teachers, which is to say, givers of orders, judges, graders, were the source of these children's strategies" (Holt, 1995, p. 55). In that and subsequent books, Holt

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would write in opposition to fixed curricula, formal assessments, age segregation, and other reforms that made learning legible at the expense of allowing learning to happen organically.

The year before *How Children Fail* was published, Daniel Greenberg was helping to found the Sudbury Valley School, based on similar SDE principles as what Holt would go on to advocate. SVS would be a school that contained "no externally imposed curriculum, no arbitrary requirements dictating what they should do with themselves" and where "students' activities would have to be launched on their own initiative" (Greenberg & Sadofsky, 2013, p. 5).

While there have been many activists and authors who have written in favor of SDE, I will focus on these two largely because they have arguably best articulated a view arguing that attempts to make learning legible often diminish the process of genuine learning. One could say that Holt and Greenberg are arguing for a return to illegibility in learning, on the grounds that the very legibility measures we've imposed on learning has had a deleterious effect.

Both authors, for instance, write firmly against a curriculum imposed on learners, worrying that, as Greenberg puts it, they "run... against the natural tendency of the child to develop in his/her own way" (Greenberg, 2013a, p. 108). For Holt, teaching a child a thing before she has interest in learning it - necessary under a fixed curriculum - is a large reason why schools are ineffective. Much of his work argued against the idea of fixed curriculum out of a belief that "we learn best when we, not others, are deciding what we are going to try to learn, and when, and how, and for what reasons or purposes; when we, not others, are in the end choosing the people, materials, and experiences from which and with which we will be learning" (Holt, 1970, p. 95).

For similar reasons, both were also concerned with the idea that children grow academically according to the same rough schedule. For Greenberg, this "tyranny of

developmental milestones" is "a curse that modern pseudo-science has introduced into the theory of natural human development" that interferes with children's natural (and in his view, idiosyncratic) development (Greenberg, 2013a, p. 101). Holt similarly argues that, as children are idiosyncratic in their mental development and interests, forcing them into a paced curriculum treats children like they were railroad trains running on a schedule; "But children are not railroad trains. They don't learn at an even rate. They learn in spurts, and the more interested they are in what they are learning, the faster these spurts are likely to be" (Holt, 2017, p. 155).

Both authors were hostile to the idea that researchers could (or needed to) formulate a scientifically-informed theory about how all children learn and use it to improve instructional processes. One of Holt's conclusions in *How Children Fail* was that these attempts to measure and control the learning process themselves undermined organic learning. Three years later, he published *How Children Learn*, a book of sketches about how children Holt knew learned (everything from reading to swimming) outside of school. One purpose of this book, Holt wrote, was to show how differently learning can look when learners are free to control their learning outside of such formal structures. One mistake made in the field of education, he suggested, is in thinking that "from what we can learn about people in a very limited, unusual, and often very anxious situation [school] we can make reliable judgments about what they do in very different and more usual situations" (Holt, 2017, p. 8). Holt even warned that he was not attempting to create a theory of learning precisely because he doubts that human learning - when left free of artificially imposed constraints - is amenable to description by a single theory.

Greenberg is more overt in his suspicion that much of the imposed orders of schooling arise from a human desire to impose legibility on (what is in its natural state) an illegible process.

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If you understand, then, that there is a deep yearning on the part of social

scientists and psychologists to be "scientific" and along comes a person who

purports to give, on the basis of what looks to be a very nice scientific work, a

good linear theory of the mind, you can see why they [educators and

administrators] will jump at it. And it comes then as no surprise that people like

[psychologists Jean] Piaget or [B.F.] Skinner rapidly become widely accepted by

their colleagues, because they rescued the profession of psychology from the

oblivion of being an "art" and turned it into a scientific discipline. I think that this

idea is going to fall by the wayside eventually, but it's only going to happen when

the whole culture begins retracting from the technological worldview (Greenberg,

2013b, pp. 48–49).

Such a retraction, however, means retracting various measures of legibility that have been

successfully imposed on the k-12 school system, measures that have by in large become part of

the "grammar of schooling." For Holt, Greenberg, and many other advocates of SDE, it is these

very structures that create the ill-effects. Both Holt and Greenberg advocated for learning

environments that stripped away testing, grading, age segregation, subject divisions, and forced

let alone uniformly paced curriculum, that stripped away those attempts at legibility to return

learning back to its more organic and illegible form. This, however, leaves SDE advocates not

only advocating this position to a world largely used to legibility in the learning process. It also

introduces a quandary: if SDE relies on the idea that imposing legibility on the learning process

harms good learning, SDE undermines the very attempts at measuring its results that could help

demonstrate its effectiveness. It is to this issue that we now turn.

Advocating Illegible Learning in a Legible World

Legibility is the attempt to transform a practice previously unintelligible to outsiders by imposing an order that will make it so intelligible. I've argued that the history of American k-12 education consists largely in successful attempts to make the learning process more and more legible. Advocates of SDE have argued against these trends, offering reasons why those very attempts to impose legibility are not only unnecessary, but detrimental to good learning. I will now argue that this leads to two large concerns regarding the ability of SDE advocates to communicate their ideas and convince others within cultures that are used to legibility in the learning process.

The first difficulty comes from the idea in much argument for SDE that learning is by nature often an illegible process. Most obviously, this means having to convince a culture that is used to the type of legible learning produced by the existing grammar of schooling to forego the apparent benefits of legibility, like the ability it affords to apply the same legible processes on all learners and the ability to guide learning processes in predictable directions.

Yet, this demand for legibility in the learning process has also affected how research is conducted and how the academy (and larger culture) judges the legitimacy of different types of research. In an academy that still, as Lagerman (2009) argued, largely prizes quantitative methods, a good deal of existing literature on SDE and unschooling is qualitative, involving either observation of self-directed learners or recollections from learners or their parents about how learners in SDE environments learned (Ortiz, 2000; Riley, 2018; Thomas & Pattison, 2008) or surveys of how learners believe SDE did or didn't prepare them for future endeavors (Greenberg & Sadofsky, 1992; Riley & Gray, 2015).

These studies are useful both in detailing qualitatively how learners in SDE environments *can* learn particular things and giving an indication of how some of those

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learners experienced SDE. Yet, for the reasons Lagerman worries about, colleges of

education today are used to the more easily legible method of quantitative studies.

Arguably, and as generally acknowledged by researchers in these studies, such qualitative

studies have inherent limits, such as possible self- and researcher-selection bias, potential

bias in the subject or researcher's memory or reporting, and potential observer effects.

Moreover, SDE's illegible nature poses a related problem: if the learning that is

observed may often be illegible, it may well be illegible to researchers studying it, or

even to the learner. The *metis* SDE allows for - the ability to learners to act freely

according to their own needs and environmental factors - may enable learning no longer

confined to a legible order. But, for research purposes, this is a potential drawback.

Thomas and Pattison discuss SDE's reliance on informal learning, wherein "it is the

learner who must decide, *consciously or unconsciously*" various aspects of what and how

she will learn (2008, p. 14, my italics). Given the idiosyncrasy and often illegibility of

informal learning, specific instances of learning may either not be intelligible to

researchers or even to learners themselves.

For instance, in her survey of adult unschoolers' remembrance of learning to read,

Riley (2018) reported that 8 of 9 respondents (those who reported not being taught how

to read), could not remember with much if any detail how they learned. (One typical

response was: "I kinda remember trying to follow along while being read to, and I think

one day it just kind of clicked" (2018, p. 9). Riley speculates that this is likely a problem

of respondents' memory, but given SDE advocates' suggestion that learning needs not be

a deliberate activity, it is also possible that the learning's very informality and tacit nature

played a part in that lack of memory. In short, SDE's eschewal of constraining learning

by imposing legibility poses problems for researchers, by frustrating their ability to capture and explain how the learners they study learn.

Another problem for SDE research in a world used to legibility measures is SDE advocates' general aversion to pre-determined metrics for measuring learning outcomes. To the degree that SDE is not a systematic approach to how learners are to learn, it necessarily reduces (arguably drastically) the ways in which learning outcomes can be measured.

To illustrate, Daniel Greenberg has written many times about the difficulties of conveying the idea of the Sudbury Valley school to those used to the conventional grammar of schooling. For instance, he writes of "one fundamental objection that will probably stay with us [at Sudbury Valley] for the foreseeable future" (Greenberg, 2013b, p. 40). The objection, he reports, is impervious to just about every attempt to point out to the objector what kids are learning at Sudbury Valley, borne as it is on several assumptions Greenberg suggests we commonly make about conventional schools that simply don't apply to Sudbury Valley.

> In this culture, the meaning of the word "learning" is closely determined by four
> fundamental assumptions. The first assumption is that one knows what ought to
> be learned by people. The second assumption is that one knows when it ought to
> be learned. The third assumption is that one knows how it ought to be learned.
> And the fourth assumption is that one knows by whom each thing ought to be
> learned. These four assumptions in essence determine the meaning of the
> concept"learning" for this culture. (Greenberg, 2013b, p. 41)

To the extent that Sudbury Valley and other forms of SDE do not base their practices on these assumptions, there is now a dilemma. Embrace of (at least this type of) SDE means that one almost certainly has to forego the traditional measures of proof that

have become part of the conventional grammar of schooling. The advocate of SDE not only has to convince others that their method is a better way of achieving similar results as other methods (as one would if one was arguing for replacing curriculum *a* with curriculum *b*). They now must argue the deeper and larger point that the very metrics that might be requested to demonstrate SDE's success (by parents, education researchers, etc) are problematic.

The problem, in fact, gets even deeper when we think about both Greenberg's and Holt's suggestion that learning is idiosyncratic to each child, that the child needs freedom to develop in their own way on their own schedule. Given this elastic idea, it is hard to see how any outcome could be deemed a failure to which we can't imagine a retort about how the child grew up in their way and might have been worse off had they been forced to develop differently.

An SDE advocate could, of course, say that one can measure success by whether the child is, in a general sense, growing in their abilities. There are two related problems with that response. First, for those who distrust timetables for growth, any instance where it appears a child is not growing could be met with the response that the learner simply isn't growing to the observer's preferred schedule. Any attempt to suggest that the child may not be growing and might need intervention could be argued as an impermissible attempt to subject the child to the observer's preferred time schedule.

Secondly, "growth" is potentially an overly vague term until we specify with some sort of objectivity what we are looking for growth in and what the signs of that growth would be, which itself seems incompatible with SDE advocates general acceptance of letting the child grow in her own way sans interference. Nor is any

direction of growth specified, and such specification would be anathema to many defenses of SDE. Interlocutors may, for instance, want to find out whether learners in SDE environments learn such (they would argue) basics as math, reading, or a knowledge of history. Many SDE learners, of course, may well learn those things, but by SDE's very arguments about learning being organic, SDE advocates could not guarantee that all learners will learn those things. Instances of learners not learning them could be met with arguments - no matter how justifiable - that failing to learn, say, history is simply evidence that the learner has not encountered a need to learn history. Given our cultural comfort with a legible grammar of schooling where learners are guaranteed to (at least appear to) learn certain things at particular ages, arguing against those legibility demands is a tall order. It also makes it difficult to use any conventional markers (that we could use to measure learning effectiveness in conventionally legible schools) to demonstrate the efficacy of SDE.

Finally, SDE is arguably in a double bind when it comes to persuading others of its methods, especially if research is called for. A large part of Holt's and Greenberg's message (which I imagine finds sympathy with other SDE advocates) is not just that legibility measures are unnecessary, but that their existence negatively affects the learning process. As Holt (1970) puts it, "we cannot be in the business of education and at the same time in the business of testing, grading, labeling, sorting, deciding who goes where and who gets what," in part because "when we are being judged we think only of the judge and how to give him what he wants" (p. 38).

We might say this is an educational application of Goodhardt's (or Campbell's) law, the principle that measures (ex: tests to gauge learning) that become targets (tests

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that students prepare specifically for) thereby lose their force as measures (Muller, 2019).

Tests or grades can measure progress, but when they become the thing students shoot for

- as they arguably will once students find out they exist - those tests or grades lose their

force as true measures (so long as there are ways to do well on the test or gain good

grades that are in any way separable from truly learning the material).

If this is right, SDE advocates face a vexing dilemma in trying to convince others

of SDE's efficacy. In addition to its reticence to impose external standards to gauge

learner success, the new dilemma is that attempting to impose those standards to measure

outcomes disqualifies the learning from being SDE. Hence SDE cannot be measured, at

least with any study whereby the learner knows in advance what metrics she will be

subject to.

This is not necessarily a problem for all SDE, as some SDE advocates argue that

the idea is elastic enough to permit learners engaging with formal institutions and

structures of learning so long as the engagement is voluntary (Ricci, 2012). It will pose a

problem insofar as Holt and others argue that attempts to measure learning will affect

arguably superior organic processes of learning. That is, we can imagine a study where

researchers (or state officials thinking about how to regulate or monitor homeschoolers)

seek to assess how well learners in SDE environments acquire mathematical skills at

various ages. Aside from objections SDE advocates might have to the idea that all

learners need to acquire particular math skills at particular ages (or at all), these

researchers might face another problem. Per Goodhardt's/Campbell's law, it can be

argued that attempts to measure specific skills might, so long as the tests are known in

advance to participants, change the very nature of the math learning from an organic to a

more "schoolish" process of learning for a test. The very existence of the test, moreover, could change how the learner learns math by demanding that the learner convert math that was learned in a form very different from "school math" into a legible form that will be understood on a test (Lave, 2003). SDE advocates like John Holt and Daniel Greenberg have done well to articulate the paradox raised by Goodhardt's/Campbell's law: the very act of measuring something like learning can often problematically change the nature of what is being measured by turning the measure into a target. The difficulty such a recognition poses, however, is that it becomes more challenging (if not impossible) to find metrics for measurement that might be used in convincing others of one's position. This is especially true if those others exist in a culture that has long been used to relying on the very metrics one is criticizing.

Conclusion

For better, worse, or some of each, the history of American k-12 public education is a history of taking less legible approaches to learning and making them more legible. This has made - or as SDE advocates might argue, created the illusion that learning could be - learning into a process that is easier for outsiders to make sense of, supervise, and control. We regularly use formal, standardized tests to assess learning, subject learners to increasingly standardized curriculum, divide learning into discrete subjects that all learners are expected to pick up, segregate students by age or ability (according to tests), etc. SDE advocates have argued that such imposed legibility is at best unnecessary and at worst deleterious to good learning. These advocates argue that these impositions of legibility be entirely removed so that learners (and teachers) be able to use their own *metis* to guide learning. This advocacy is ambitious and I have offered several reasons

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why such arguments for converting a legible process into an illegible one might risk

undermining many tools such advocates might need to convince others of SDE's

efficacy. I see this less as a cause for pessimism than I do as a challenge SDE advocates

must face if they are to convince any sizable number of people that SDE is a legitimate

take on learning.

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