

Henrekson, Magnus; Wennström, Johan

Working Paper

The view of knowledge: An institutional theory of differences in educational quality

IFN Working Paper, No. 1432

Provided in Cooperation with:

Research Institute of Industrial Economics (IFN), Stockholm

Suggested Citation: Henrekson, Magnus; Wennström, Johan (2022) : The view of knowledge: An institutional theory of differences in educational quality, IFN Working Paper, No. 1432, Research Institute of Industrial Economics (IFN), Stockholm

This Version is available at:

<https://hdl.handle.net/10419/269186>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

IFN Working Paper No. 1432, 2022

The View of Knowledge: An Institutional Theory of Differences in Educational Quality

Magnus Henrekson and Johan Wennström

The View of Knowledge: An Institutional Theory of Differences in Educational Quality^{#†}

Magnus Henrekson^{*} and Johan Wennström^{**}

August 31, 2022

Abstract: This essay argues that the most crucial institution of any school system is the embraced view of knowledge—from which virtually all other aspects of a school are derived: the content of its curricula, its pedagogical practices, and the incentives that motivate its members. To make this case, we outline the two main conflicting views of knowledge, the classical view and the postmodern social constructivist view. According to the classical view, the purpose of schooling is to give students objective knowledge and skills that they cannot acquire in any way other than through hierarchical instruction in well-defined disciplines. The postmodern social constructivist view rejects the existence of objective knowledge. This rejection translates to a preference for student-directed pedagogy, the mixing of instructional fields, and an emphasis on developing general critical thinking skills rather than on acquiring domain-specific knowledge. Using the history of education in Sweden as an example, our analysis suggests that the recent decline in educational quality in the Western democracies can be remedied by a paradigm shift in the governing view of knowledge toward the classical view.

Keywords: Communal knowledge, institutions, postmodernism, social constructivism, thought style, views of knowledge.

JEL Codes: H42, H44, H75, I22, I28, L88.

[#] This is a preprint version of a paper accepted for publication in [The Independent Review](#).

[†] This essay draws on the authors' book, [Dumbing Down: The Crisis of Quality and Equity in a Once-Great School System—and How to Reverse the Trend](#) (2022, open access). We are grateful for useful comments and suggestions from Johan Tralau, Mark S. Weiner, Robert Whaples, and two anonymous referees. We gratefully acknowledge financial support from the Catarina and Sven Hagströmer Foundation and the Jan Wallander and Tom Hedelius Foundation.

^{*} Email: magnus.henrekson@ifn.se. Address: Research Institute of Industrial Economics (IFN), P.O. Box 55665, SE-102 15 Stockholm, Sweden.

^{**} Corresponding author. Email: johan.wennstrom@ifn.se. Address: Research Institute of Industrial Economics (IFN), Box 55665, SE-102 15 Stockholm, Sweden.

About the authors: Magnus Henrekson is a professor of economics and senior research fellow at the Research Institute of Industrial Economics (IFN) in Stockholm. Johan Wennström, Ph.D. in political science, is a research fellow at IFN.

In all developed countries, children are required to attend school until they have reached the age of about fifteen. This requirement is justified because basic schooling is beneficial not only to the individual, but also to societal development. Indeed, an educated population is a necessary condition for a wide range of key modern values and institutions that benefit people at large, including democracy, human rights, technological innovation, and economic growth.¹ Hence, education may be seen as a public good, comparable to an orderly judicial system, mass transportation, and a robust national defense. Yet it is not simply the number of years that children spend in a school system that produces the many benefits associated with education. Naturally, students may spend many years in school without contributing to the common good. The crucial factor is rather the quality of the education they receive—or, put in other terms, the ability of a school system to impart knowledge and skills.²

If a quality education is a cornerstone of the good society, however—especially a democratic society—then democracy has recently been presented with many troubling signs. As of 2018, for instance, China ranked first in the PISA global assessment of reading ability and mathematics and science proficiency, and the so-called benign dictatorship of Singapore ranked second. The United States, meanwhile, ranked only twenty-fifth. Several other Western countries have also experienced deteriorating educational performance, as measured by PISA scores and comparable international tests, in recent years. This apparent decline in educational quality raises the specter that democratic societies may stagnate while China and similar dictatorial, or quasi-dictatorial, states build on their educational prowess to advance their social vision.

What accounts for the shortcomings of education in Western democracies? In this essay, we argue that the single most important institution for the functioning and development of any school system is the embraced view of knowledge.³ We define “view of knowledge” in terms of the Polish philosopher Ludwik Fleck’s (1979 [1935]) concept of “thought style,” which inspired the U.S. historian of science Thomas Kuhn’s (1962) concept of “paradigm.” Thought styles are manners of thinking that link the members of a particular social unit—a “thought collective,” in Fleck’s terminology—and determine how they interpret phenomena relevant to their interests. We regard views of knowledge as thought styles that shape how individuals who belong to different thought collectives within the field of education—scholars, pedagogues, and policymakers—understand what knowledge is and what formal schooling can and should do to help students acquire it.

The view of knowledge, whether stipulated or merely implicit, is the fundamental institution of the educational system, and this is where scholars and policymakers

¹ See McMahon (2010) for an exhaustive list of the benefits of education.

² For evidence, see Ch. 3 in Henrekson and Wennström (2022) and the references therein.

³ Laws, regulations, norms, and other formal and informal institutions affect and incentivize individual behavior and human interaction (Acemoglu, Robinson, and Johnson 2005, Schotter 2008). Thus, to understand how and why a particular outcome has come about in an area of study, one must identify the most relevant institutions and how they affect agents’ incentives. This is no less true for education.

should look to understand the success or failure of schools, rather than to indirect and ultimately less significant factors, such as the attractiveness of the teaching profession.

In the first two sections of this essay, we outline the two main conflicting views of knowledge in terms of the Weberian concept of “ideal types.” Max Weber, the German sociologist, wrote (Shils and Finch 1949, 90): “An ideal type is formed by the one-sided *accentuation* of one or more points of view and by the synthesis of a great many diffuse, discrete, more or less present and occasionally absent *concrete individual* phenomena, which are arranged according to those one-sidedly emphasized viewpoints into a unified *analytical* construct...” In other words, the views of knowledge described here should be understood as the ends of a dichotomy.

During the period of educational modernization in the West and in Japan from the mid-1800s and onwards it was taken as a given that objective knowledge specific to various fields exists, that it is accessible through systematic study directed by competent teachers, and that it serves as a precondition for the development of important skills. We call this the “classical” view of knowledge, though it is consistent with modern scientific research. It is still predominantly accepted in Asian societies. Many school systems in the West have come to embrace another view, which considers knowledge claims to be subjective and ultimately nontransferable from teacher to student. The emphasis is, therefore, on self-directed learning of content that students themselves deem relevant to their schooling and training in critical thinking, a skill that is assumed to be generic in nature and divorced from the acquisition of domain-specific knowledge.⁴ We call this the postmodern social constructivist view of knowledge.

For us, it is clearly the classical view of knowledge that gives rise to favorable outcomes in the school system, while the postmodern social constructivist view of knowledge leads to educational failure. A scope condition for this theory is that our criticism of usage of the postmodern social constructivist view of knowledge is limited to elementary education; in other contexts, including higher levels of education, postmodern and social constructivist thought may bring valuable perspectives.

In the third section of the essay, we take the decline of Sweden’s school system as a primary example of how a move from one view of knowledge to another affects the chances of producing high-quality education. The final section considers the implications of our argument for the future of Western education.

The Classical View of Knowledge

Our species, *Homo sapiens*, would not have been able to dominate Earth if our innate ability for learning had not been extraordinary (Henrich 2016). However, if we have such natural talent for learning, why do we make people spend so much of their youth in classrooms? According to adherents of the classical view of knowledge, there is a straightforward reason, although it was intuited for a long time rather than clearly formulated and empirically tested, as is so often the case with human innovation:

⁴ Knowledge exclusive to different subject domains. See, e.g., Tricot and Sweller (2014).

Formal education is a technology developed and applied to compensate for what the human mind is innately able to do only poorly.

One does not need to attend school to learn how to walk, run, play, recognize the objects and the people one depends on, speak well enough to function within the family and among close neighbors, or immediately tell how many items there are in a set of up to four (Henrich 2016). Learning and perfecting such skills is typically done seemingly effortlessly and found enjoyable by children because they are *biologically primary* tasks. In other words, the human brain is designed to spontaneously learn to perform these tasks. However, learning to master knowledge and skills such as reading and writing, arithmetic, and science is a very different matter (Pinker 2002). Those kinds of knowledge and skills are *biologically secondary* in nature since they are not normally applied in the everyday life of a child and in any case were discovered only recently in the history of our species. As a result, an innate talent to acquire them in the same effortless way has not yet evolved—if it ever will (Geary 2007, 2011).

Attaining biologically secondary knowledge and skills requires deliberate practice, and since it does not come naturally to human beings, the learning process is not always pleasurable.⁵ On the contrary, we learn, for example, a mathematical skill only with great effort, and we must repeat and repeat this new skill before it can become automatic and second nature. We can then use it to learn a more advanced skill in the same area, and so on. In the classical view, the purpose of schools is to provide an arena for the acquisition of such hard-won, biologically secondary knowledge and skills. As the Australian educational psychologist John Sweller (2016a, 293) writes, “We invented schools in order to teach biologically secondary knowledge because, unlike primary knowledge, it is unlikely to be acquired without the functions and procedures found in educational establishments.”

Particularly important in this context, according to the classical view, is the teacher’s explicit instruction in the attainment of biologically secondary knowledge and skills, and his or her encouragement of students to practice with diligence and perseverance.⁶ The reason is that humans “have evolved to learn [biologically secondary information] from others” (Sweller 2016a, 300). Since our ability to do so is a biologically primary skill that is lacking in most other animals, explicit instruction is considered by far the most natural and efficient teaching method.⁷ *Cognitive load theory*, conceived by Sweller, suggests that the alternative model for learning, in which novice students are expected to find and rehearse biologically secondary information themselves, leads to the working memory quickly becoming overloaded (Sweller, Ayres, and Kalyuga 2011).⁸ As a result, one summary explains, “focus is lost, the mind wanders, and the task is abandoned” (Dehn 2014, 497). Disturbance of the working

⁵ See, e.g., Jürgees and Schneider (2010) for evidence that there exists a tradeoff between learning and happiness.

⁶ See, e.g., Heckman and Rubenstein (2001) for a discussion of how such noncognitive skills facilitate the attainment of knowledge.

⁷ See further, e.g., Hattie (2009); Jerrim, Oliver, and Sims (2019); Kirschner, Sweller, and Clark (2006); Mayer (2004).

⁸ For a history of cognitive load theory and a discussion of its impact, see Sweller (2016b).

memory can also arise from perceived threats to safety (Ingvar 2017, Lee, Lee, and Kim 2017), which is why the classical view of knowledge emphasizes the importance of structure and peace in the classroom for achieving successful learning outcomes, with the teacher as a social leader and norm-setter.

The terms knowledge and skills are deliberately combined in this account because, in the classical view, they are tightly interwoven. This belief is supported by research showing that skills, in fact, are dependent on domain-specific knowledge. As the U.S. educationalist E.D. Hirsch (2016, 13), an emblematic exponent of the classical view of knowledge, notes, “The domain specificity of skills is one of the firmest and most important determinations of current cognitive science.” Even as basic a skill as reading comprehension requires domain knowledge, as has been demonstrated by studies showing that students who are considered “poor readers” on the basis of scores on reading tests outperform “good readers” in cases where the former happen to have more knowledge about the subject matter (Recht and Leslie 1988). Interestingly from an equity point of view, this remains true also when IQ is taken into account (Schneider, Körkel, and Weinert 1989). The evidence thus suggests that anyone’s reading comprehension will quickly degenerate when a topic is unfamiliar, regardless of the text’s complexity (Arya, Hiebert, and Pearson 2011). Consequently, it is logical that other, more advanced skills, such as problem solving and critical thinking, have also proven to require large amounts of domain-specific knowledge or even expertise in an area.⁹

Against this background, adherents of the classical view of knowledge reason that the key to developing cross-topic reading comprehension and other vital skills is having, in Hirsch’s (2016, 81) words, a “well-stocked mind.” Hence, schools should offer students a broad curriculum. According to the classical view, such a curriculum should be organized around traditional subject areas. Moreover, it should be detailed and sequenced in a cumulative manner to ensure that students learn the foundations of a subject before proceeding to subsequent levels. The design of the curriculum is thus considered a critical success factor, and research corroborates this notion. A well-thought-out curriculum and high-quality teaching materials, can, in fact, be even more important to student learning than teacher quality (Whitehurst 2009, Chingos and Whitehurst 2012).

What underlies the importance given to the curriculum in the classical view of knowledge is the idea that humanity through scientific inquiry has discovered and developed a body of knowledge about how the world is constituted and how it works that young students need to master, or at least have some basic understanding of, if they are to successfully live in that world. Such knowledge, for example, the rudimentary principles of physics and biology, is held to be objectively true, given the strength of the evidence in its favor that scientists have collected by observation and

⁹ For studies about problem solving, see, e.g., Larkin et al. (1980); Simon and Chase (1973). For a discussion about critical thinking, see, e.g., Willingham (2010).

experimentation, and by formulating and testing different hypotheses.¹⁰ By virtue of it being true, in this sense, that body of knowledge has spread to the point that it has become shared or, in Hirsch's (2016) term, "communal." It is, in other words, taken for granted that everyone has possession of it. Thus, to be ignorant of communal knowledge is to be an outsider unable to comprehend, build on, or challenge what others know. Therefore, schools must, according to the classical view, teach it to every student.

The German-born political philosopher Hannah Arendt (2006, 193) crystallized this point in her 1954 essay "Crisis in Education" when she stated, "[Education] is where we decide whether we love our children enough not to expel them from our world and leave them to their own devices, nor to strike from their hands their chance of undertaking something new, something unforeseen by us, but to prepare them in advance for the task of renewing a common world." The same principle applies not just to the verifiable facts of the hard sciences and the tools invented to make use of them (for instance, mathematical methods), but also for communal knowledge that is enabling for the individual within the national context and essential to cultural identity, such as language grammar and other culturally shared concepts as well as literature, history, and geography. Even ethical concepts that the individual can rely on to make normative judgements are part of this communal knowledge. Without it, adherents of the classical view argue, students will not be able to fully take part in, and help renew, the society that they have been born into. As Arendt (2006, 191) observed, "because [the world] continuously changes its inhabitants, it runs the risk of becoming as mortal as they. To preserve the world against the mortality of its creators and inhabitants it must be constantly set right anew." To fulfill this task, every new generation must be introduced into the knowledge of the old world.

A completely contradictory view of the nature of knowledge, pedagogy, and curricular principles has in recent years, however, become much more influential in Western educational circles. This is the postmodern social constructivist view of knowledge, to which we turn our attention in the next section.

The Postmodern Social Constructivist View of Knowledge

Postmodernism as a philosophical movement can be understood as "a reaction to and rejection of modernity," meaning, not least, its foundation in Enlightenment ideals such as reason and science (Pluckrose and Lindsay 2020, 22). Postmodern theorists have, from the late 1960s onwards, claimed that these ideals are not as reliable, valid, and unbiased as they may seem. On the contrary, they should be regarded as inevitably partial and highly subjective "metanarratives" (Lyotard [1979] 1986), which in their (by postmodernism's perceived) attempt to sweepingly explain the world are comparable to normative "grand theories" such as Christianity or Marxism. The "knowledge" and "truths" that the purportedly scientific narratives have produced are, therefore, not truths at all but rather "dominant discourses" or "regimes of truth"

¹⁰ See Okasha (2002) for a discussion about the philosophical concept of probability and the "logical interpretation of probability," which is congruent with the view of truth presented here.

(Foucault [1970] 2002). In other words, they are nothing but hegemonic ways of speaking about things.

As the use of such terms suggest, postmodernism believes that what is regarded as known and true by modern, conventional standards is inextricably linked to power. Indeed, one of the most significant contributors to postmodern thought, the French philosopher Michel Foucault (1980), explicitly preferred to refer to knowledge as “power-knowledge.” The power in this context is perceived to be held and wielded by what postmodernism considers privileged cultures and groups, principally Western culture and white, heterosexual men (Lundberg 2020, Pluckrose and Lindsay 2020). However, these groups’ exercise of power is not done straightforwardly and visibly from above, postmodernism argues, but quite subtly and insidiously through language—through assertions of knowledge or through “expectations of civility and reasoned discourse, appeals to objective evidence, and even rules of grammar and syntax” (Pluckrose and Lindsay 2020, 36).

Because of the indirect and nebulous character of this system of oppression, postmodern theorists claim that we are all unconsciously participating in and perpetuating it through our habits of speaking and thinking. Hence, according to postmodernists, the only way to escape and dismantle the system is to scrutinize and resist the language that is widely accepted as normal, and challenge or, in the French philosopher Jacques Derrida’s (1976) term, “deconstruct” favored discourses. A key aspect of this proposed “hermeneutics of suspicion” (Wällgren 2017) is also the rejection of all established and generally acknowledged boundaries, categories, and hierarchies, which postmodernism regard, not only as arbitrary and thus illegitimate, but as operating in the service of power (Hassan 1987, Pluckrose and Lindsay 2020).

The epistemological basis for these beliefs is social constructivism. There are, we should stress, different varieties of social constructivism. Indeed, as noted in a seminal article by the U.S. philosopher of education D.C. Phillips (1995), social constructivism has “many faces.” Yet, for the sake of clarity, it is useful to distinguish broadly between two main versions: *mild* and *radical social constructivism*. The mild version holds, for instance, that many expressions of human thinking and behavior, such as language, gestures, and interpretations of different objects and phenomena, are collectively constructed and influenced by non-universal cultural factors (Berger and Luckmann 1966, Linell 2006). Radical social constructivism, on the other hand, goes so far as to deny our ability to reach objective truth, and it is this strand that informs—indeed, has merged with—postmodern theory (Berger 1992, Elder-Vass 2012).

In contrast to both its milder cousin and the classical view of knowledge, radical social constructivism does not believe that we can come to know how the world is, or most likely is, constituted through rational reasoning and the empirical, evidence-based scientific method. The reason is that radical social constructivism, at the very least, holds that truth claims cannot be measured against an objective reality because such a reality will always be unknowable due to our inherently partial perspectives. As one account of this radical epistemology explains, “The scientific method, in particular, is not seen as a better way of producing and legitimizing knowledge than any other, but as one cultural approach among many, as corrupted by biased reasoning as any other”

(Pluckrose and Lindsay 2020, 32). However, other interpretations suggest that radical social constructivism is even more uncompromising than that, positing that objects and phenomena can, in fact, change depending on the ways in which we think and talk about them and how we choose to determine knowledge and truth (Linell 2006, Elder-Vass 2012). The conclusion is nevertheless the same, namely, that there are no real truths.

The reliance on radical social constructivist epistemology is what enables postmodernists to claim, as we have discussed, that the quest to establish knowledge is nothing more than an attempt to further the power of dominant groups. It also explains why postmodernists argue that we should question the shared language and concepts of society, and subvert traditionally understood boundaries, such as the boundary between the objective and the subjective. Moreover, this radically social constructivist epistemological underpinning leads postmodernists to have very specific opinions on teaching and education.

Perhaps their most elementary and important pedagogical principle is that the students themselves—not the teacher—should direct the learning process in the classroom. The reasoning is that because there are no objectively existing facts, there is no knowledge that can be legitimately transferred from teacher to student. Any attempt by a teacher to do so would, in effect, be an act of indoctrination and unwarranted social control,¹¹ as would any effort to correct children's mistakes or maintain a structured classroom environment conducive to learning in the classical sense (Carnell 2000, Herr 2005). Similarly, because there is no way to objectively measure what students know, traditional assessment and grading practices are considered to be inherently judgmental and ideological (Kelly 2004).

Instead, the postmodern social constructivist view of knowledge holds, students must be free to determine their own knowledge and reality, building on personal life experiences rather than culturally prescribed truths, and find their own ways of studying as well as monitoring their progress. Students should, in this view, also be encouraged to independently deconstruct and pick apart dominant discourses in different fields—science, history, art, etc.—through collaborative verbal discussions and the development of critical thinking. In contrast to the classical view, critical thinking is here regarded as a general skill that can be acquired, and indeed exercised, without possessing domain-specific knowledge, for instance through comparing diverse sources of information, evaluating arguments, and exposing hidden agendas (Wikforss 2019).

It follows that the postmodern social constructivist view of knowledge does not recognize the necessity of a detailed curriculum organized around traditional subject areas that every student is expected to learn in a particular order. On the contrary, all such curricula are considered biased and oppressive (Kelly 2004, Kincheloe 2008). Instead, students should be allowed to work with content that is personally meaningful

¹¹ For instance, a popular postmodern textbook featured on many university education departments' reading lists according to Christodoulou (2014), *The Curriculum: Theory and Practice* (Kelly 2004, 32), states that "one must see the imposition of any one version of knowledge as a form of social control and as a threat to all of the major freedoms identified as essential constituents of a free and democratic society."

and interesting to them. In other words, this view has little time for Hirsch's and Arendt's concept of "communal knowledge"; its focus is, perhaps not solely but primarily, on what the individual subjectively values. To the extent that the postmodern social constructivist view of knowledge does allow for a curriculum to be used, it should not be organized along subject lines and in a hierarchical, cumulative way. In line with postmodernism's emphasis on blurring boundaries, it should instead aim to transgress and undermine the conventional demarcations between subjects and break up their internal structures.¹²

In summary, the postmodern social constructivist view of knowledge is a complete negation of the classical view. (In *Table 1* we summarize the most important aspects of the two opposing views of knowledge and their implications for pedagogical practice.) In the next section, we will discuss how the postmodern social constructivist view of knowledge became the dominant thought style of the Swedish school system and what that has meant for educational quality.

[Table 1 about here]

The Case of Sweden

"By the late 1860s, at the latest," writes the economic historian Lars G. Sandberg (1979, 230), "Sweden had a system of universal elementary education, and the supporting structure of teacher-training institutions, in full operation." It had by this time advanced from its more primitive roots and become influenced by the pedagogy of the German 19th-century philosopher Johann Friedrich Herbart, who believed that every child had an inner potential that could be realized through intellectual self-improvement and that the key to such realization was a structured and teacher-led education focused on imparting knowledge (Heller-Sahlgren and Sanandaji 2019).

Herbart wanted students not to mechanically follow the teachers' prescriptions, but rather to internalize knowledge and learn to apply it by repetition and practice under the teacher's instruction and supervision. His teaching ideal closely—and remarkably, given its 19th-century context—resembled modern pedagogical notions about the importance of the teacher, not as an agent of control or a mere "facilitator of learning," but as someone who leads the work in the classroom by virtue of his or her knowledge (Biesta 2017). Such an education, Herbart believed, would "protect the child from a game of chance—in other words, from random environmental influences—and develop his or her ability to choose the "beautiful and good" over the "tasteless and unethical."¹³

Herbart's pedagogy won wide recognition when the German educator Tuiskon Ziller wrote about it in an influential work (Ziller 1865) and, together with his disciple Wilhelm Rein, developed it in even more practical and tangible ways. Ziller added the notion that education must be adapted to the individual student's level of maturity and refined Herbart's thoughts about the planning of lessons. Herbart-Zillerism, as this

¹² Doll's (1993) concept of a chaotic, "dancing" curriculum is arguably one of the more pronounced expressions of this idea.

¹³ Qtd in Siljander (2012, 96).

educational philosophy came to be known, thus proposed five formal stages associated with teaching: (1) *preparation*—a process of arousing students' interest in a topic; (2) *presentation*—presenting new material in a concrete manner and rehearsing it with students; (3) *association*—through comparison and contrast with previously acquired knowledge; (4) *generalization*—a procedure especially important to the instruction of older students and designed to permit more abstract comprehension; and (5) *application*—using acquired knowledge so that it becomes part of the functional mind. “In this manner,” Rein wrote, “a child’s acquired idea may be so developed, so welded together in firm, systematic, comprehensive association, that all his knowledge becomes a reliable, personal possession.”¹⁴

Herbart-Zillerism was keenly embraced in countries that in the years leading up to World War I would become the scientifically and technologically most advanced societies, including Germany, (then-feudal) Japan, the United Kingdom, and the United States.¹⁵ In another such ascendant country, 1860s Sweden, the adoption of Herbart-Zillerism led to an expectation on teachers to explain and demonstrate what was taught rather than to have their students merely repeat information without necessarily understanding it, which had often been the case in preceding decades. According to a vast number of preserved recollections by former students, this was also how teachers behaved in practice. Indeed, what is common to most students’ accounts of schooling is that their teachers engaged them with an authoritative and demanding yet vivid and lively approach from which the students learned knowledge and skills for a lifetime (Hall 1941). Considerable value was also placed on the inculcation of noncognitive skills such as attentiveness, conscientiousness, honesty, reliability, and perseverance (Andersson 1986).

Still in the last decades of the 1800s and even after the turn of the century, Herbart-Zillerism exerted significant influence over Swedish education. One example of this continued influence is that Wilhelm Rein was invited to Stockholm in 1895 to give a series of pedagogical lectures to the Swedish educational establishment. The first truly national curriculum, which was enacted in 1919 and, remarkably, remained in effect until 1955, also clearly reflected the Herbart-Zillerist approach by emphasizing genuine content mastery through teacher-led presentation, repetition, and practice, and by matching the sequence of topics to the student’s maturity and prior knowledge. The whole structure of the curriculum was in keeping with Rein’s point, made in one of his lectures in Stockholm, that “[t]he new thought material must be anticipated by the old, and the previously imparted knowledge must be retained in order to be able to receive the new.”¹⁶ According to the curriculum (Swedish National Board of Education 1920, 50), the goal of such an instruction- and repetition-based educational process was to make “the children’s progress apparent to themselves and instill a joy of work.”

¹⁴ Qtd in Da Garmo (1895, 137).

¹⁵ For a description of how this type of pedagogy was implemented in the United States, see, e.g., Dunkel (1969a, 1969b). Herbart’s influence on the development of Japanese education is discussed in Duke (2009).

¹⁶ Qtd in Kaleen (1979, 70).

It is thus no exaggeration to say that the classical view of knowledge characterized the Swedish educational system for close to one hundred years. A major force in its gradual demise was the repudiation of the legitimacy of teacher-led, instructive pedagogy by public intellectuals and the governing Social Democrats after World War II, emanating from a gross misinterpretation of the educational policies of National Socialist Germany. The propaganda of National Socialism suggested that German schools were based on discipline and obedience to the teacher; in reality, however, schools were chaotic and disorderly, dominated by Hitler Jugend students who were encouraged by the regime to rebel against their teachers.

This was not understood in post-war Sweden. Instead, Nazi education was perceived as a kind of continuation of the old German educational order, which in the 19th century had informed the creation of the Swedish school system (Heller-Sahlgren and Wennström 2022). A radically new school system was therefore deemed necessary and when it eventually came into existence in the early 1960s, it pushed the old aim of systematic and rigorous learning of communal knowledge under the guidance of teachers into the background. The 1946 Schools Commission, whose final report (SOU 1948:27, 5) laid the foundation for the reformed educational system, instead wanted to “promote students’ independence and critical thinking, their will to work and to work independently, their sociality and capacity to co-operate,” and allow “students to develop activities and initiatives themselves.” Moreover, the Schools Commission (SOU 1948:27, 148) called for a curriculum that was grounded in students’ everyday experiences, arguing that it was “increasingly obvious how seldom acquired knowledge can be considered fixed.”

In line with these recommendations, the first national curriculum for the new school system, enacted in 1962, stressed that schools “should work from norms that the students accept and rules that they help to develop” (Swedish National Board of Education 1962, 13). The second curriculum, enacted in 1969, even more explicitly emphasized that teacher-led instruction was less important than stimulating students’ active role in the learning process. Additionally, it called for a breakup of the structure and hierarchy of the traditional subject disciplines, suggesting that any subject “could for some students be given a more concrete and practical content, while other students could study the subject on a more theoretical level” (Swedish National Board of Education 1969, 44). All types of knowledge measurement were moreover discouraged.

These policies, which are usually (and correctly in a historical sense) ascribed to a “progressive” philosophy of education,¹⁷ were the first antecedents of the postmodern social constructivist view of knowledge. The third curriculum, enacted by a center-right government in 1980, made a further advance in the postmodern direction. The government bill that proposed the curriculum harshly criticized the existing differentiation between subjects, arguing that the natural sciences and technical subjects “cannot be isolated from the social sciences” and that “traditionally structured content”

¹⁷ Progressive, student-centered pedagogy predates the emergence of the postmodern social constructivist view of knowledge. Yet the ideational continuity is so strong that we treat it as one thought style in the Fleckian sense.

in physics and chemistry should be abandoned (Government Bill 1978/79:180, 76). It also stated that “the well-structured mass of knowledge that has accumulated within different traditional subjects can never be a starting point for schoolwork.” Instead, the bill called for schoolwork to reflect “the students’ view of reality,” which it claimed is inherently different from adults’ perception of reality and build on their curiosity and their questions” (Government Bill 1978/79:180, 80). The curriculum itself stated that both the content of education and the teaching methods used should be adapted to each student based on his or her interests since there is “no way of studying that is best for all students” (Swedish National Board of Education 1980, 52).

The new proposed orientation of Sweden’s school system caused significant dissatisfaction within the teaching community. As early as the start of the 1970s, many teachers—including 49 percent of those in the upper grades of elementary school—wanted to leave the profession (Wennström 2014). Swedish teachers were motivated by a professional ethos built around imparting classical knowledge to new generations (Sjöberg 2006); now they were told that teachers were no longer necessary in their long-standing function as persons knowledgeable in their subject matter. Nevertheless, a sufficient number of teachers of the old tradition remained in the educational system so that the methods used in Swedish classrooms changed only marginally during the first decades of the new school system (Rothstein 2010 [1986], Heller-Sahlgren and Sanandaji 2019).

Because teachers determine the congruence between curriculum and practice, the real transition moment was, in effect, the early 1990s when almost all older teachers retired and were replaced by a new generation of teachers,¹⁸ educated at modern teacher-training institutions where the practices of their predecessors were explicitly criticized and no concrete training in how to instruct students was given (Linderöth 2016). In other words, as incumbent teachers did not swiftly comply with the formal change to the postmodern social constructivist view of knowledge, a gap had opened up between the *de jure* and *de facto* institutions, which was now closed. “Student influence” was for the first time also enshrined in law (Government Bill 1990/91:115). Moreover, a new center-right government enacted a fourth curriculum in 1994, the radical nature of which demonstrated that the postmodern view of knowledge had now come to full maturity in the Swedish educational system.

A committee comprised mostly of pedagogues and staff from the Ministry of Education who drafted the curriculum stated that “what is knowledge in one place is not necessarily knowledge in other places” and that “there are no ‘pure’ facts,” only facts that take on meaning from what we can see or detect (SOU 1994:94, 63–65). In line with these arguments, the committee suggested that “the selection of facts can vary locally” and that “not all students everywhere need to work with the same facts to reach a common understanding” (SOU 1994:94, 77). This proposal was realized in the curriculum (Swedish National Agency for Education 1994). It did not come to include a prescribed content to be covered in the form of detailed course syllabi; it merely

¹⁸ According to an analysis in the newspaper *Dagens Nyheter* (2015, 6), the “displacement of teachers trained before the 1970s should have peaked around 1990.”

established a number of vague goals and objectives. One set of goals consisted of general aims that “schools should strive for,” for instance, promoting the development of critical thinking in students. Another set of goals concerned the individual student’s academic progress but were limited to “master basic mathematical thinking and can apply it in everyday life,” or “has deepened knowledge within a few subject areas of his/her choosing” (Swedish National Agency for Education 1994, 9–10).

There was no suggestion that teachers were expected to help with the second set of goals by imparting domain-specific knowledge to students. On the contrary, the teacher’s official responsibilities were all concerned in one way or another with supporting self-directed learning, and he or she was expected to “assume that students are able and want to take personal responsibility for their learning and their schoolwork” (Swedish National Agency for Education 1994, 14). At the same time, the training of students in diligence, perseverance, and other noncognitive skills, which are necessary to have any chance of working successfully without instruction, was abandoned (Hörnqvist 2012).

In contrast to what had happened when new national curricula had been introduced in previous decades, the teaching methods used in Swedish schools gradually changed. A 2003 survey asking 9th graders how often they worked individually without instruction in school found that 50 percent did so several times a day, up from 25 percent in the early 1990s (Swedish National Agency for Education 2004). In mathematics, 79 percent of students reported doing so during every or almost every lesson. What emerged from these findings, according to the Swedish National Agency for Education (2004, 47), was an “image of an increasingly isolated and individualized education, in which students are working in isolation from both the teacher and the other schoolchildren.”

The previous educational system had contributed to a high general level of education in the population at large and Sweden’s remarkable economic takeoff and prolonged period of growth during the second half of the 1800s until the mid-1900s (Sandberg 1979). Since older generations of teachers still adhered to the classical view of knowledge, the quality of Swedish education continued to be relatively good for a long time after that school system was dismantled in the 1960s. In fact, when large-scale comparative international testing of students’ knowledge began in 1995 with the first worldwide TIMSS assessment in mathematics and science, Swedish students performed far above the international average. Notably, they outperformed U.S. students across the performance distribution. In the first cycle of PISA in 2000, Swedish students also performed above the international average.¹⁹

But then Sweden’s ranking began to decline. For instance, in the TIMSS study, Swedish average results fell by 56 points between 1995 and 2011, which was the largest drop among all participating countries. Swedish PISA results also progressively deteriorated until a low point was reached in the 2012 survey. In each area of PISA, i.e., reading, mathematics, and science, only three OECD countries performed worse.

¹⁹ For a further discussion of Sweden’s performance in international assessments, including the most recent cycles of TIMSS and PISA, see Ch. 3 in Henrekson and Wennström (2022).

The decline in science and reading was greater for students at the low end of the distribution.

Thus, something had happened that significantly and negatively affected educational quality. We suggest that it was the fading of the long legacy of the traditional educational culture and the consolidation of the postmodern social constructivist view of knowledge.

Conclusion

This essay has argued that the most important, yet often the most neglected, institution of any school system is its view of knowledge. The embraced view of knowledge has ripple effects on the content of curricula and pedagogical practice, as well as on the incentives of the various agents involved in the educational system, including students, parents, teachers, school principals, school owners, the central government, and the concerned government agencies.

We juxtaposed two very different views of knowledge, with different implications for formal education. According to the classical view, true and objective knowledge exists, and it has, by virtue of this fact, become shared or “communal”; to be ignorant of it therefore is to be an outsider, inept to adequately participate in and contribute to the development of one’s own society. Several important skills, such as reading and problem-solving ability, also hinge on the possession of communal knowledge. As it is unlikely that new generations will simply discover the knowledge that is relevant to participating in society on their own and spontaneously develop the skills that are necessary to flourish, the classical view holds that schools should provide teacher-led education based on a carefully constructed curriculum.

The postmodern, social constructivist view, on the other hand, discards the idea that scientific enquiry has produced knowledge that is true and that students need to master. It maintains that truth claims are often manifestations of group interests and power calculations, which should be deconstructed and revealed. In the context of schooling, this translates into a rejection of the primacy of the teacher in the learning process and a preference for student-directed pedagogy, the mixing or breaking up of perceived arbitrary disciplines in curricula, and an emphasis on developing skills, critical thinking in particular, which are seen as generic and largely decoupled from domain-specific knowledge.

Depending on which view of knowledge becomes institutionalized in a country’s educational system, the system will either produce high-quality education or highly problematic learning conditions. The Swedish case is a prime example. Between roughly 1860 and 1960, Sweden had a school system based on the classical view of knowledge, which laid the foundation for the country’s economic success and put students on a track for future positions as leading scientists, technicians, and entrepreneurs. The transition to the postmodern social constructivist view of knowledge progressed in several stages in the following decades but was in practice not completed until the early 1990s, when the teachers who had been trained under the paradigm of the classical view of knowledge were displaced through retirement—illustrating the lingering effects of institutions long after the demise of their formal foundations. The

impact of this development on the quality of Swedish education was profoundly felt in the years ahead. Students' levels of knowledge declined substantially across the ability distribution but more so among low-performing students, suggesting that the postmodern social constructivist view of knowledge and the ensuing pedagogical practice are particularly harmful to weak students and students whose parents are less educated or are recent immigrants.²⁰

As we have argued at length elsewhere (Henrekson and Wennström 2019, 2022), the adoption of the postmodern social constructivist view of knowledge also undermined any chance of Sweden's far-reaching experiment with school vouchers and for-profit providers in the school system being successful. In brief, there is no effective measure to ensure that schools compete in terms of educational quality and not in other dimensions, for example grading, when the state refuses to define the knowledge schools should be teaching and on which their students should be graded.

Against this background, it is disquieting that the educational systems of many other Western countries have become increasingly dominated by the postmodern social constructivist view of knowledge.²¹ High-quality education is an indispensable tool for leaving behind magical thinking—the *modus operandi* of our species for most of its evolutionary history—and replacing it with rational strategies for navigating our lives and societies so that we can achieve our goals in accordance with our values. Many Western nations appear to be forgetting this point, while China and likeminded countries exploit the classical view of knowledge to achieve their goals.

The implication of our theoretical framework, however, is that problems concerning educational quality in the West are not intractable. A shift in the stipulated view of knowledge, primarily by revising national or subnational curricula, has the potential to yield radical improvement over time. Correcting the problems in this way is not even costly. In fact, investing in the most critical institution of the school system is a free lunch,²² if ever there was one.

²⁰ See further, e.g., Andersen and Andersen (2017).

²¹ Consider the United States, where the subject of mathematics has recently become the target of accusations of being a manifestation of structural racism, and where “social justice curricula” are being experimented with. Or consider Finland, previously a star in the educational realm, which has experienced a substantial decline in student performance after advancing toward the postmodern social constructivist view of knowledge (Heller Sahlgren 2015). Indeed, average Finnish scores in both mathematics and science fell the most in PISA among Western countries from 2006 to 2018. Other examples of similar reforms that impacted negatively students' knowledge include a 1989 postmodern social constructivist curriculum reform in the French school system (Hirsch 2016) and a transition to a postmodern social constructivist teaching approach in the Canadian province of Québec in the early 2000s (Haeck, Lefebvre, and Merrigan (2014).

²² A popular adage, often attributed to U.S. economist Milton Friedman, suggests that “there ain't no such thing as a free lunch,” meaning that there are costs associated with every choice.

References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2005. "Institutions as a Fundamental Cause of Long-Run Growth." In *Handbook of Economic Growth*, Volume 1A, edited by Philippe Aghion and Steven Durlauf, 386–472. Amsterdam: North-Holland.
- Andersson, Inger. 1986. *Läsning och skrivning: en analys av texter för den allmänna läs- och skrivundervisningen 1842–1982*. Umeå: Umeå universitet.
- Arendt, Hannah. 2006. *Between Past and Future: Eight Exercises in Political Thought*. London: Penguin.
- Arya, Diana Jaleh, Elfrieda H. Hiebert, and P. David Pearson. 2011. The Effects of Syntactic and Lexical Complexity on the Comprehension of Elementary Science Texts. *International Electronic Journal of Elementary Education* 4, no. 1: 107–125.
- Berger, Peter L. 1992. Reflections on the Twenty-Fifth Anniversary of The Social Construction of Reality. *Perspectives* (The Theory Section Newsletter of the American Sociological Association) 15, no. 2: 1–4.
- , and Thomas Luckmann. 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. London: Penguin.
- Biesta, G. J. J. 2017. *The Rediscovery of Teaching*. London: Routledge.
- Carnell, Eileen. 2000. Dialogue, Discussion and Feedback – Views of Secondary School Students on How Others Help Their Learning. In *Feedback for Learning*, edited by Susan Askew, 56–69. New York, NY: Routledge.
- Chingos, Matthew M., and Grover R. Whitehurst. 2012. *Choosing Blindly: Instructional Materials, Teacher Effectiveness and the Common Core*. Washington, DC: Brookings.
- Christodoulou, Daisy. 2014. *Seven Myths About Education*. London: Routledge.
- De Garmo, Charles. 1895. *Herbart and the Herbartians*. New York, NY: Charles Scribner's Sons.
- Dagens Nyheter. 2015. Skolan var bättre förr. November 29, 6. Accessed September 10, 2018. <https://www.dn.se/arkiv/ledare/skolan-var-battre-forr/>.
- Dehn, Milton J. 2014. Supporting and Strengthening Working Memory in the Classroom to Enhance Executive Functioning. In *Handbook of Executive Functioning*, edited by Sam Goldstein and Jack A. Naglieri, 495–507. New York: Springer.
- Derrida, Jacques. 1976. *Of Grammatology*. Baltimore, MD: Johns Hopkins University Press.
- Doll, William E. 1993. *A Post-Modern Perspective on Curriculum*. New York, NY: Teachers College Press.
- Duke, Benjamin. 2009. *The History of Modern Japanese Education: Constructing the National School System, 1872–1890*. New Brunswick, NJ: Rutgers University Press.
- Dunkel, Harold B. 1969a. Herbartianism Comes to America: Part I. *History of Education Quarterly* 9, no. 2: 202–233.
- Dunkel, Harold B. 1969b. Herbartianism Comes to America: Part II. *History of Education Quarterly* 9, no. 3: 376–390.
- Elder-Vass, Dave. 2012. *The Reality of Social Construction*. Cambridge: Cambridge University Press.
- Fleck, Ludwig. 1979 [1935]. *Genesis and Development of a Scientific Fact*. Chicago, IL: University of Chicago Press.

- Foucault, Michel. 1980. *Power/Knowledge: Selected Interviews and Other Writings, 1972–1977*. New York, NY: Pantheon Books.
- . [1970] 2002. *The Order of Things*. London: Routledge.
- Geary, David C. 2007. *Educating the Evolved Mind – Conceptual Foundations for an Evolutionary Educational Psychology*. Greenwich, CT: Information Age.
- . 2011. Primal Brain in the Modern Classroom. *Scientific American Mind*. September/October: 44–49.
- Government Bill. 1978/79:180. Om läroplan för grundskolan m.m. Stockholm: Swedish Parliament.
- Government Bill. 1990/91:115. Om vissa skollagsfrågor m m. Stockholm: Swedish Parliament.
- Andersen, Ida Gran, and Simon Calmar Andersen. 2017. Student-Centered Instruction and Academic Achievement: Linking Mechanisms of Educational Inequality to Schools' Instructional Strategy. *British Journal of Sociology of Education* 38, no. 4: 533–550.
- Hall, Bror Rudolf. 1941. Goda lärare: minnesbilder av f.d. lärjungar o.a. In *Uppteckningar om folkupplysningen på 1800-talet: dagboksblad, minnen och referat*, edited by Bror Rudolf Hall, 3–312. Stockholm: Föreningen för svensk undervisningshistoria.
- Hassan, Ihab Habib. 1987. *The Postmodern Turn: Essays in Postmodern Theory and Culture*. Columbus, OH: Ohio State University Press.
- Hattie, John. 2009. *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. New York, NY: Routledge.
- Heckman, James J., and Yona Rubenstein. 2001. The Importance of Noncognitive Skills: Lessons from the GED Testing Program. *American Economic Review* 91, no. 2: 145–149.
- Heller Sahlgren, Gabriel. 2015. *Real Finnish Lessons: The True Story of an Education Superpower*. London: Centre for Policy Studies.
- , and Nima Sanandaji. 2019. *Glädjeparadoxen: historien om skolans uppgång, fall och möjliga upprättelse*. Stockholm: Dialogos.
- , and Johan Wennström. 2022. The Fatal Conceit: Swedish Education after Nazism. *Journal of Controversial Ideas* 2, no. 1: 1–9.
- Henrekson, Magnus, and Johan Wennström. 2019. “Post-Truth” Schooling and Marketized Education: Explaining the Decline in Sweden’s School Quality. *Journal of Institutional Economics* 15, no. 5: 897–914.
- Henrekson, Magnus, and Johan Wennström. 2022. *Dumbing Down: The Crisis of Quality and Equity in a Once-Great School System—and How to Reverse the Trend*. Cham, CH: Palgrave Macmillan.
- Henrich, Joseph. 2016. *The Secret of Our Success: How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smarter*. Princeton, NJ: Princeton University Press.
- Herr, Kathryn. 2005. Reconsidering Problem Students. In *Classroom Teaching*, edited by Joe Kincheloe, 207–218. New York, NY: Peter Lang.
- Hirsch, Eric D. 2016. *Why Knowledge Matters: Rescuing Our Children from Failed Educational Theories*. Cambridge, MA: Harvard Education Press.
- Hörnqvist, Berit. 2012. *Läroplaner och icke-kognitiva kompetenser – en granskning*. Stockholm: Swedish National Agency for Education.
- Ingvar, Martin. 2017. Inte anpassad för hjärnan. In *Kunskapssynen och pedagogiken: varför skolan slutade leverera och hur det kan åtgärdas*, edited by Magnus Henrekson, 115–149. Stockholm: Dialogos.

- Jerrim, John, Mary Oliver, and Sam Sims. 2019. The Relationship between Inquiry-Based Teaching and Students' Achievement. New Evidence from a Longitudinal PISA Study in England. *Learning and Instruction* 61 (June): 35–44.
- Jürges, Hendrik, and Kerstin Schneider. 2010. Central Exit Examinations Increase Performance. But Take the Fun Out of Mathematics. *Journal of Population Economics* 23, no. 2: 497–517.
- Kaleen, G. 1979. *Fackundervisningen vid våra folkskoleseminarier*. Stockholm: Föreningen för svensk undervisningshistoria.
- Kelly, A. Vic. 2004. *The Curriculum: Theory and Practice*. 5th ed. London: Sage.
- Kincheloe, Joe L. 2008. *Critical Pedagogy Primer*. 2nd ed. New York, NY: Peter Lang.
- Kirschner, Paul A., John Sweller, and Richard E. Clark. 2006. Why Minimal Guidance During Instruction Does Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential, and Inquiry-Based Teaching. *Educational Psychologist* 41, no. 2: 75–86.
- Kuhn, Thomas S. 1962. *The Structure of Scientific Revolutions*. Chicago, IL: University of Chicago Press.
- Larkin, Jill, John McDermott, Dorothea P. Simon, and Herbert A. Simon. 1980. Expert and Novice Performance in Solving Physics Problems. *Science* 208, no. 4450: 1335–1342.
- Lee, Joo Han, Seung Lee, and Joung-Hun Kim. 2017. Amygdala Circuits for Fear Memory: A Key Role for Dopamine Regulation. *Neuroscientist* 23, no. 5: 542–553.
- Linderöth, Jonas. 2016. *Lärarens återkomst: från förvirring till upprättelse*. Stockholm: Natur & Kultur.
- Linell, Per. 2006. Bara prat? Om socialkonstruktivismen som vanställande och vanställd. In *Det vanställda ordet: om den svåra konsten att värna sin integritet*, edited by Martin Kylhammar and Jean-François Battail, 152–193. Stockholm: Carlssons.
- Lundberg, Johan. 2020. *När postmodernismen kom till Sverige*. Stockholm: Timbro.
- Liotard, Jean-François. [1979] 1986. *The Postmodern Condition: A Report on Knowledge*. Manchester: Manchester University Press.
- Mayer, Richard E. 2004. Should There Be a Three-Strikes Rule against Pure Discovery Learning? The Case for Guided Methods of Instruction. *American Psychologist* 59, no. 1: 14–19.
- McMahon, Walter W. 2010. The External Benefits of Education. In *International Encyclopedia of Education*, edited by Penelope Peterson, Eva Baker and Barry McGraw, 260–271. Oxford: Elsevier.
- Okasha, Samir. 2002. *Philosophy of Science: A Very Short Introduction*. Oxford: Oxford University Press.
- Phillips, D. C. 1995. The Good, the Bad, and the Ugly: The Many Faces of Constructivism. *Educational Researcher* 24, no. 7: 5–12.
- Pinker, Steven. 2002. *The Blank Slate: The Modern Denial of Human Nature*. New York, NY: Viking Press.
- Pluckrose, Helen, and James Lindsay. 2020. *Cynical Theories: How Activist Scholarship Made Everything about Race, Gender, and Identity – and Why This Harms Everybody*. Durham, NC: Pitchstone Publishing.

- Recht, Donna R., and Lauren Leslie. 1988. Effect of Prior Knowledge on Good and Poor Readers' Memory of Text. *Journal of Educational Psychology* 80, no. 1: 16–20.
- Rothstein, Bo 2010 [1986]. *Den socialdemokratiska staten: reformer och förvaltning inom svensk arbetsmarknads- och skolpolitik*. Lund: Arkiv förlag.
- Sandberg, Lars G. 1979. The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth before World War I. *Journal of Economic History* 39, no. 1: 225–241.
- Schneider, Wolfgang, Joachim Körkel, and Frans Emanuel Weinert. 1989. Domain-Specific Knowledge and Memory Performance: A Comparison of High- and Low-Aptitude Children. *Journal of Educational Psychology* 81, no. 3: 306–312.
- Schotter, Andrew. 2008. *The Economic Theory of Social Institutions*. Cambridge: Cambridge University Press.
- Shils, Edward A., and Henry A. Finch, eds. 1949. *Max Weber on the Methodology of the Social Sciences*. Glencoe, IL: Free Press.
- Siljander, Pauli. 2012. Educability and Bildung in Herbart's Theory of Education. In *Theories of Bildung and Growth: Connections and Controversies Between Continental Educational Thinking and American Pragmatism*, edited by Pauli Siljander, Ari Kivelä and Ari Sutinen, 87–105. Rotterdam: Sense Publishers.
- Simon, Herbert A., and William G. Chase. 1973. Skill in Chess. *American Scientist* 61, no. 4: 394–403.
- Sjöberg, Mats. 2006. Den gode folkskolläraren: självbild och identitet inom den manliga folkskollärarkåren 1930–1960. In *"Goda lärare": läraridentiteter och lärararbete i förändring*, edited by Mats Sjöberg, 163–191. Linköping: Skapande Vetande.
- SOU 1948:27. 1946 års skolkommissions betänkande med förslag till riktlinjer för det svenska skolväsendets utveckling. Stockholm: Ecklesiastikdepartementet.
- SOU 1994:94. *Skola för bildning. Betänkande av läroplanskommittén*. Stockholm: Allmänna Förlaget.
- Swedish National Agency for Education. 1994. *Läroplan för det obligatoriska skolväsendet, förekoleklassen och fritidshemmet Lpo 94*. Stockholm: Skolverket.
- . 2004. *Nationella utvärderingen av grundskolan 2003 – sammanfattande huvudrapport*. Stockholm: Skolverket.
- Swedish National Board of Education. 1920. *Undervisningsplan för rikets folkskolor den 31 oktober 1919*. Stockholm: Norstedts.
- . 1962. *Läroplan för grundskolan*. Stockholm: Skolöverstyrelsen.
- . 1969. *Läroplan för grundskolan: Lgr 69*. Stockholm: Utbildningsförlaget.
- . 1980. *Läroplan för grundskolan: Lgr 80*. Stockholm: Liber/Utbildningsförlaget.
- Sweller, John. 2016a. Cognitive Load Theory, Evolutionary Educational Psychology, and Instructional Design. In *Evolutionary Perspectives on Child Development and Education*, edited by David C. Geary and Daniel B. Berch, 291–306. New York: Springer.
- . 2016b. Story of a Research Program. *Education Review* 23: 1–19.
- , Paul L. Ayres, and Slava Kalyuga. 2011. *Cognitive Load Theory*. New York: Springer.

- Tricot, André, and John Sweller. 2014. Domain-Specific Knowledge and Why Teaching Generic Skills Does Not Work. *Educational Psychology Review* 26, no. 2: 265–283.
- Wennström, Johan. 2014. *Lärare utan frihet: när vänstern och högern kidnappade lärarprofessionen*. Stockholm: Samhällsförlaget.
- Whitehurst, Grover J. 2009. *Don't Forget Curriculum*, *Brown Center Letters on Education*. Washington, DC: Brookings.
- Wikforss, Åsa. 2019. Critical Thinking in the Post-Truth Era. In *Misinformation and Fake News in Education*, edited by Panayiota Kendeou, Daniel H. Robinson and Matthew T. McCrudden, 279–304. Charlotte, NC: Information Age Publishing.
- Willingham, Daniel T. 2010. Critical Thinking: Why Is It So Hard to Teach? *Arts Education Policy Review* 109, no. 4: 21–32.
- Wållgren, Ingrid. 2017. "Den postmodernistiska kunskapssynen och den svenska skolan." In *Kunskapssynen och pedagogiken: varför skolan slutade leverera och hur det kan åtgärdas*, edited by Magnus Henrekson, 65–93. Stockholm: Dialogos.
- Ziller, Tuiskon. 1865. *Grundlegung zur Lehre vom erziehenden Unterricht*. Leipzig: Heinrich Matthes Verlag.

Table 1 Contrasting the two views of knowledge and their implications for pedagogical practice.

The classical view	The postmodern social constructivist view
Knowledge is most efficiently acquired through direct instruction from a knowledgeable teacher with a fundamental subject understanding.	Knowledge cannot be transferred from teacher to student.
The teacher instructs and teaches.	The teacher's role is primarily that of a coach and advisor.
The teacher expects the student to do well and motivates the student to aspire to reach his or her inherent potential.	The student sets his or her own goals based on his or her own motivations, interests, and aspirations.
The learning objectives are defined by the course material.	The student is personally responsible for his or her knowledge acquisition.
Teacher-centered direct instruction is a core element.	A high share of work is student-directed or in the form of group assignments.
The purpose of education is to attain a goal such as mastering a specific subject or topic or acquiring a certain skill.	Education is a process in which the main focus is participation, and the teacher is merely one of the participants.
There are continual formative assessments related to existing knowledge goals.	There is no clear distinction between formative and summative assessments.
Studies are primarily organized within disciplinary boundaries.	Studies are often cross-disciplinary and thematic.
Subject studies are cumulative and successive steps that expand on previous steps.	Courses are separate and noncumulative.
Textbooks and other structured teaching material are the primary means for acquiring knowledge and understanding.	Knowledge is to a great extent acquired through the students' own searching through various sources.
Each subject is considered to have a core of knowledge that students should learn.	Knowledge is considered largely subjective and linked to each pupil's experience and motivations.
Grading based on tests measuring knowledge attainment is feasible as the syllabus consists of clearly defined content to be mastered.	The view of knowledge is incompatible with grading based on tests to measure the level of knowledge attainment.
Objective grading with high external validity is possible, as the content of the syllabus is well defined in terms of knowledge and skills.	Grading is based on numerous and differing criteria.
The specific character of each subject is respected.	All subjects contain elements of civics.
Emphasis on the acquisition of corroborated knowledge deemed to be of great relevance; a greater focus on reading as a learning method.	An emphasis on discussion and students' personal views.
Subject studies are cumulative; the final grade measures the knowledge level attained at the point when the study of the subject concludes.	As the learning process per se is primary, each course must be graded separately.
Student imparted with the knowledge and skills that give the ability as an adult to make independent assessments and life choices.	Student should be educated to become a citizen who holds certain values.

The classical view	The postmodern social constructivist view
The view is well-suited for exit exams; it does not matter how the knowledge is acquired.	Exit exams are not compatible with the view.
The principal is a trained teacher with good knowledge in his or her subjects and has proven his or her excellence as a teacher.	The school principal does not need to be a trained teacher or have deep knowledge in any particular subject.