JIS Journal of Interdisciplinary Sciences
Volume 10, Issue 2; 1-27
November, 2026. © The Author(s)
ISSN: 2594-3405

The Architectonic Society: Robots, Pedagogy and the Roots of Digital Platform Governance

Jeremy Dennis
Liberal Arts Division, St. Louis Community College
JDennis@stlcc.edu

Abstract: *Architectural metaphors are often used to illuminate the ways in which digital platforms serve as governance tools for social control, particularly in education. To illustrate this point, this conceptual study examines the ways Basil Bernstein's appreciation of pedagogic governance is increasingly used to help scholars and educators contextualize and understand the politics, proliferation, and influence of digital platforms as technologies of control supported by surveillance, personal data, and data centers. However, this study challenges the Bernsteinian approach by revealing how architectonics, or the general science of understanding parts in relation to the whole, serves as an alternative conceptual framework and metaphor for investigating digital platforms and modern robots as their anthropomorphic extensions or nodes. With architectonics as an interdisciplinary paradigm and potential model for understanding control and communication in the digital age, the findings suggest that it is possible to recontextualize and reassess digital platform governance and modern robots as a continuous and technological expression of pedagogic governance. This expression originated in ancient Greece but still resonates in social relations today, a time in which humans are not the main agents or purveyors of teaching, learning, and governance.*

Keywords: Aristotle; digital platforms; pedagogic governance; Rastus Robot; slavery

Introduction

This study uses *architectonics*, or the general science of understanding parts in relation to the whole, to challenge the ways in which architectural metaphors are used in the academic literature to contemplate and investigate crises in education. For some scholars, such crises are increasingly inspired by digital platforms and their use as governance tools for social control (Decuypere et al., 2021; DeNardis, & Hackl, 2015; Nichols & Dixon-Román, 2024; Williamson et al., 2022). To illustrate this point, I examine the ways in which the conceptualization of pedagogic governance by the sociologist of education Basil Bernstein is increasingly applied to investigate how digital platforms, as technological architectures, encourage what he called the *totally pedagogised society*. More specifically, I contend that the Bernsteinian (2001a, 2001b) approach overvalues the teacher–student relation as the social basis and foundational model for comprehending the exercise of power in other socio-technical

This work is licensed under a Creative Commons Attribution 4.0 International License

relations, including employee–employer and state–citizen interactions. I argue that this emphasis has motivated and sustained a lack of interest in and underappreciation for the ways in which the master–slave relation set the stage for the emergence of the teacher–student relation and the origin of pedagogic governance in ancient Greece. To help us recognize the ways in which this recontextualization challenges Bernstein's advancement of pedagogic governance, I turn to Aristotle's (ca. 350 B.C.E./2000) contemplations on slavery and automata or robots in *Politics*. This work is not only provocative, but it is also significant because it reveals how the rule of the master over the slave serves as a starting point for understanding other forms of authority and governance, including the teacher–student relation that Bernstein (1990, 2000) privileged. Many modern educators might be surprised to learn that our modern understanding of the word *pedagogy* is informed by an authoritarian approach toward the governance of slaves in ancient Greece. For example, Givens (2021) wrote, "Our modern word pedagogy derives from an ancient term for a slave who was tasked with teaching" (pp. 229–230). The term is most recognizable to contemporary educators as the art of teaching that is inseparable from social processes and practices. However, as a chaperone, trainer, or supervisor of children in ancient Greece, the slave pedagogue often made learning possible by teaching their charges or pupils fundamental skills or simply escorting them to school and other activities. Therefore, it should come as no surprise that some slaves in antiquity served as *paedogoi* or child minders and respected educators in ancient civilizations such as Greece (Rolls, 2022; Salvatori, 1996; Wrenhaven, 2015).

This historical evidence suggests that, although slaves were considered property and human tools in ancient Greece, they operated across different parts of society as essential workers. In turn, I argue that Aristotle (ca. 350 B.C.E./2000) provided one of the earliest instances of technology, particularly in the form of automata or robots, being considered as replacements for some essential workers in the division of labor and as governance tools that helped mitigate social crises that undermined the idea of democracy. According to Sparrow (2019), the idea of robots as mechanical proxies for human slaves has been present from the inception of the term. Derived from the Czech word *robota*, meaning drudgery, servitude, or slavery, robots provide added historical contexts and insights for understanding nonhuman entities such as computerized machines and how they reshape human labor and social relations for the benefit of others (Gunkel, 2023; Wiener, 1988). According to Devecka (2013), "Greeks living in Athens had a model through which they could understand what robots might do; this model was the slave" (p. 53). With this context in mind, I suggest that our modern understanding of pedagogy as the art of teaching results from its origination as an expression of governance shaped by the prerogatives of masters of slaves, the state, and the socioeconomic institutions they regulated in ancient Greece and beyond (Forsdyke, 2021; Salvatori, 1996; Wrenhaven, 2015). If this is the case, then Bernstein's appreciation of pedagogic governance may need to be reconsidered as a conceptual framework for helping scholars and practitioners in education engage with the politics of platformisation or "the spread and influence of digital platforms as technologies of control into virtually every aspect of contemporary life" (Sefton-Green, 2022, p. 899). For example, Bernstein (2001a) identified the pedagogic relation as one that normalizes the intimacies of desire, conduct, and its practices and how they shape social macrostructures. In further theorizations of pedagogic governance, he characterized pedagogy

This work is licensed under a Creative Commons Attribution 4.0 International License

as a form of power that extends far beyond conceptualizations that relate more narrowly to the relationships and practices between teachers and students, which reflect relations of power between employer and employee and the state and citizens (Sefton-Green, 2022; Singh, 2017). These social macrostructures and dynamic interactions register as architectonic forms that signal how the Bernsteinian approach decontextualizes pedagogy's emergence as an extension of governance in the slave societies of ancient Greece (Landrum, 2015; Salvatori, 1996; Wrenhaven, 2015).

Because the master–slave relation is often unconsidered by Bernstein (2000, 2001a) and many of those who advocate and advance his work, this underappreciation is noticeable when juxtaposed with the characterization of slaves and automata or robots in the writings of Aristotle and others (Ball, 2009; Kwok, 2021; Martins & Mainardes, 2026; Moore et al., 2006; Singh, 2017; Tyler, 2004). Therefore, I contend that the master–slave relation is the social basis and foundational model that resonates—fundamentally, but not completely—in other techno-social relations today, including parent–child, teacher–student, employee–employer, and state–citizen relations. Unsurprisingly, the exercise of power in these social relations is seldom equal or democratic even though they serve as cornerstones in *(neo)liberal democracies* throughout the West. The term (neo)liberal democracy characterizes a system of governance that emphasizes individual civil liberties yet supports (neo)liberal approaches in which the influence of free-market capitalism and technology increasingly undermines these features (Dean, 2002; Lepore, 2026). Although paradoxical, this assessment helps explain why the core institutions and organizations in democratic societies in the West tend to function autocratically and hierarchically. These include families, schools, hospitals, religious institutions, corporations, and the armed forces. Notably, these relations appear to be underplayed and undervalued as direct and indirect extensions of the master–slave binary in the writings of Bernstein (1990, 2001a) and in the writings of those who have advanced or critiqued his work to illuminate the exercise of power through discourse, identity, and social relations in (neo)liberal environments underscored by digital technology (Ball & Collet-Sabé, 2025; Martins & Mainardes, 2026; Sefton-Green, 2022; Singh, 2017; Tyler, 2004).

This underappreciation in the scholarship of Bernstein (2000, 2001b) is significant because it also points to a troubling paradox that seems fundamental to the emergence of democracy and education in ancient Greece and its ramifications in the digital age. The paradox is that many democratic societies propagate freedom; but slavery, circumscription, and surveillance have often functioned as the actual basis for that freedom. In other words, the art of governance in the past and present ensures freedom by using authoritative tools and practices to maintain democracy in the West and beyond (Dean, 2002; Foucault, 2000; Patterson, 2018). For example, scholars such as Katznelson (1995) have often used the term *architectural syncretism* to refer to the ways in which disparate and sometimes contradictory norms, practices, and organizational structures are blended and built into a single conceptual framework to explain democratic governance. His appreciation explores why, in response to crises, leaders and other authority figures often prefer to integrate new ideas, outlooks, and approaches with old worldviews and practices instead of developing entirely new systems to respond to changes or disruptions in the social order. For Katznelson (1995), the administration and organization of

This work is licensed under a Creative Commons Attribution 4.0 International License

interests in social systems such as the United States are "far too skewed and limited to make democracy substantive and robust for all citizens" (p. 199). However, with the social changes inspired by digital technology and artificial intelligence, I use the term architectonics in this study to characterize the simultaneity of differences that encapsulates this paradox and others at the core of (neo)liberal democracy in the West. In other words, architectonics recognizes the ways contradictory logics, parts, and processes contribute to our understanding of (dis)order as an inherently social and pedagogical practice designed and constructed for the governance and control of the ruled by their rulers. More important, it substantiates the use of triadic relations to help us model and understand the operation of control and communication in social and pedagogical relations constructed and mediated by data, digital platforms, and other socio-technological elements (Holquist, 2015; Lepore, 2026; Peirce, 1955; Simmel, 1908/2009).

Therefore, I advance architectonics as an interdisciplinary paradigm that helps us contemplate how consonant and conflicting observations, components, and processes come together to explain how things get produced, constructed, and controlled by human and nonhuman agents in all aspects of life and learning (Holquist, 1990, 2015). This explains why Turner (2014) framed architectonics as an expression of the art of governance and control. He claimed, "What I am calling the *architectonics* of control is a kind of sub-set of a much broader analytics of technologies of power; it designates an analysis of contemporary prescriptive discourses of control … analyzed from the perspective of the present" (p. 41). Architectonics, then, is simply a way of understanding how structures, strategies, and practices transform an open field of possibilities into a closed or circumscribed space of potentialities (Holquist, 1990; Turner, 2014). As a result, the paradoxical logic and simultaneity inherent in an architectonic understanding of (neo)liberal governance often require the use of the full range and resources of the state, its supporting institutions, and their vast capacities. These include the development and instrumentalization of proprietary and public technologies such as the Internet as authoritarian tools for maintaining control in the name of democracy (Lepore, 2026; Levine, 2018; Wolin, 2008). Paradoxically, the art of governance often demands a variety of architectonic approaches and autocratic techniques to sustain (neo)liberal democracy through the management and control of human and nonhuman interactions. Pedagogy is a key resource in this dynamic. Notably, its history and contributions to paradoxical governance tend to be an underexplored aspect in the scholarship of those who study pedagogy more generally (Bernstein, 2000; Finkel & Arney, 1995; Givens, 2021; Malott, 2021; Salvatori, 1996; Wrenhaven, 2015). However, as Rolls (2022) evidenced in her study, the history and sociology of pedagogy and education in the West are entangled in the horrors and protocols of slavery as well as the paradox of democracy in ancient Greece and Rome.

To advance architectonics as an alternative metaphor and conceptual framework for understanding crises and challenges inspired by digital platforms, this study recalibrates pedagogic governance, privileging its emergence in the slave societies of ancient Greece to help us understand and investigate the arrival of digital platforms as a governance tool for social control. Governance is the term that many of us associate with the rules, practices, and programs that states, institutions, and organizations use to manage and regulate people, processes, and decision-making on a local, national, or global level (Dean, 2002; Lemke,

This work is licensed under a Creative Commons Attribution 4.0 International License

2009). With a recontextualization of pedagogic governance in place, it is possible to recognize and treat digital platform governance as a continuous and technological expression of pedagogic governance as it emerged from the master–slave relation in ancient Greece. This approach is supported by the ways the technological associations between slaves and robots in ancient Greece have anticipated contemporary concerns about socioeconomic crises instigated by the increasing use of automation and robots as *agents of replacement* in the labor force and the use of artificial intelligence, digital platforms, and architectural robotics as technologies for the exercise of power and social control (Acemoglu & Johnson, 2023; Gray et al., 2025; Green, 2016). For example, Sparrow (2019) argued, "The complex interaction between design, function, and history in determining the politics of robots makes them a productive site to investigate questions about the politics of technology more generally." He added, "The fact that humanoid robots refer to, and represent, human beings means that their design as machines intended to serve refers to the idea of human slaves" (p. 13). By some estimates, there were about 1.7 million robots working in the industrial sector in some capacity and over 2.7 million robots fulfilling roles in professional and personal services. In the future, millions of workers could be replaced by robots, including restaurant servers, factory workers, soldiers, and some educators (Gellers, 2021; Gray et al., 2025). In this study, I suggest that Sparrow's (2019) insights and these estimations connect the past and present, revealing how pedagogic governance, as it originated in ancient Greece, is rearticulated—fundamentally, but not completely—in the design and construction of digital platform governance today. This assessment might explain why scholars such as Chisnall (2020) have identified continuities among the extraction and exploitation of labor and data in slave societies of the past and the digital societies of today (Benjamin, 2019; Demichelis, 2022; Fuchs, 2017; McNally, 2025; Mejias & Couldry, 2024; Parenti, 2003; Wiener, 1988). For example, when data are acquired by "governments or corporations, legally or illegally, through obscure and lengthy contract, trickery, manipulation or just plain theft, the body-subject is enslaved in an ownership sense" (Chisnall, 2020, p. 492). This rearticulation of slavery is more pedagogical and technological than traditional forms because citizens are incentivized to use smart devices and digital platforms to substantiate appreciations of themselves as free and self-directed agents while simultaneously participating in their own exploitation and subjugation (Chisnall, 2020; Gorwa, 2024; Parenti, 2003; Srnicek, 2017). This raises a significant question: How might architectonics as an alternative conceptual framework and metaphor provide scholars and educators with the kind of philosophical and historical context they need to understand why digital slavery persists as a discourse in the academic literature, yet it is seldom recognized or applied when we use architectural metaphors to examine digital platforms as governance tools for social control?

Purpose Statement

In the remainder of this conceptual study, I address this question by illustrating how the architectural metaphors that we use to explore the challenges associated with digital platform governance have proliferated. More specifically, I focus on why scholars increasingly turn to conceptual frameworks provided by Bernstein (2000, 2001a) to explore how his theory of the pedagogisation of everyday life also functions as a lens for analyzing the architecture of digital

This work is licensed under a Creative Commons Attribution 4.0 International License

platforms as governance tools for social control. As a result, I explain why scholars such as Patterson (2018) and Dean (2002) might agree that the context provided by architectonics and Aristotle (ca. 350 B.C.E./2000) makes it more challenging for us to ignore the contradictory ways in which (neo)liberal governments and corporations use authoritarian measures and digital technology as essential components in the governance and control of people and property (Levine, 2018). Inspired by Karatani's (1995) critique of the will to architecture as a response to ideological and social control (see below), I distinguish between architectural metaphors and architectonic metaphors. Then I explain why architectonics functions as a powerful alternative framework and metaphor for understanding the connections among pedagogy in ancient Greece, digital platform governance today, and how both transform our understanding of human (persons) and nonhuman (things) relations. I also consider the multifarious social formations and interactions architectonics permits us to understand in a society in which robots increasingly function as pedagogical tools and agents of replacement in the labor force and everyday life.

Ultimately, the purpose of this study is to introduce and advance architectonics as an alternative conceptual framework and metaphor that we can use to reorient our worldviews and encourage interdisciplinary research that examines how crises and challenges associated with technologies in the past often anticipate those that we encounter in the digital age. Architectonic theory or simply architectonics represents the paradigm that we need to contextualize and investigate many of the complexities and contradictions introduced by digital platform governance and its data extraction protocols. In ancient Greek, the term architectonics or *arkhitektonikos* is derived from a combination of the words *archē* (origin, beginning, or first principle) and *téktōn* (creator, builder, or craftsmen). Most of us associate these elements with the term architecture. In its conventional usage in architectural theory, architectonics relates to characteristics, qualities, and metaphors intrinsic to a building, including its principles, design, and structure (Drewniak, 2009; Holquist, 2015; Landrum, 2015). However, Pula and Perna (2023) noted that architecture and architectural theory, more than any other disciplinary areas, have consistently been used to frame and relate politics and the exercise of power. They noted, "Architecture was always used by the state as the most efficient agent of communicating its political power and its vision for the society" (p. 2). Since Vitruvius, an architect in ancient Rome, scholars across disciplines have conflated architectural metaphors with the body and the constructivist character of technology (Bühlmann, 2018; Drewniak, 2009; Hovestadt, 2009). In his study on architectural robotics, or the automation of living environments to augment the lives of humans, Green (2016) claimed that the discipline of architecture has mostly disregarded the flux and disorder prevalent in everyday life, maintaining the impression that few things change substantially in our infrastructures and social environments.

Holquist (2015) claimed that architectonics is like architecture insofar as it is about building wholes through the manipulation of and interrelation among parts. However, the key difference is that architecture is considered one instantiation of architectonics distinguished by its value as a literal and figurative depiction of static structures that reflects order and stability. In contrast, architectonics is theoretical and performative in the sense that it is always in process, revealing how contingency and the simultaneity of differences are the means through which

This work is licensed under a Creative Commons Attribution 4.0 International License

different elements come together to create order and disorder for the ends of others. Based on the work of Mikhail Bakhtin, Holquist (2015) claimed that architectonics is the science of how something is created or produced, particularly through language, discourse, and signification. For example, Holquist (1990) characterized the triadic dimensions of architectonics in terms of dialogue and its semiology. He noted that dialogue is a manifold phenomenon and model that can be encapsulated by a minimum of three elements with a triadic construction that mirrors that of the linguistic sign. In other words, a dialogue behaves like a sign system, specifically composed of an utterance, a reply, and the relation between the two. This triadic dynamic is also reflected in the composition of the self. For Holquist (1990), the self may be conceived and modeled as a multifaceted and multidimensional phenomenon of essentially three elements. It is a triad with "a center, a not-center, and the relation between them" (p. 29).

As a term with deep roots in the philosophical tradition, architectonics is also used to describe a formal or informal system or overriding logic around which the competing and constituting parts of ideas, artifacts, and bodies of knowledge or sciences can be organized and operationalized (Atkins, 2014; Duddy, 2018; Johnson, 2015; Peirce, 1955). As a result, the term is inherently interdisciplinary and often appreciated as a conceptual tool for exploring constructivist pedagogy (Hawkins, 1994; Manchester, 2003), discursive structures and the simultaneity in dialogic practices (Holquist, 1990; Khaghani, 2019), digital and information technology (Bühlmann, 2018; Hovestadt, 2009), and the relations between governance and control (Holquist, 1990; Turner, 2014). However, Lahiji (2024) identified an area of architectonic theory that is seldom considered by scholars in these areas and is particularly rare in education, *the will to architecture*. The conceptualization of the will to architecture was first introduced by Karatani (1995, 2005) and later advanced by Lahiji (2024) and others. As a philosopher and literary critic, Karatani argued that, in the face of different kinds of crises in society, we often construct foundational systems of knowledge, design paradigms, and discourses that offer us a sense of stability in the face of social disruption and precarity. According to Karatani, the will to architecture describes this desire to develop and build stable systems and structures to combat the anxiety, heterogeneity, and unpredictability associated with crises and the complexities of disorder. Karatani (1995) insisted that the pursuit of systematicity and order is a feature and not an anomaly in the West and many of its supporting social institutions. In Western philosophical thought, he claimed, what is pertinent is not the edifice or structure of knowledge itself. It is the will to architecture that is "renewed with every crisis—a will that is nothing but an irrational choice to establish order and structure within a chaotic and manifold becoming, a will that is only one choice among many" (p. 18). Karatani attributed the proliferation and ubiquity of architectural metaphors in academic scholarship and elsewhere to their origins in ancient Greek philosophy and the problems he associated with the will to architecture in modern Western society. In Western philosophy and education, we find that discourse and thinking in scholarship are often framed using architectural metaphors and phrases such as *building theories* and *scaffolding ideas*. These are some examples of the kinds of architectural images and discourses that we often manifest in our projects and practices.

However, Karatani (1995) warned that the will to architecture and the practices that it operationalizes often fail to prevent the reoccurrence of the kinds of crises for which they are

This work is licensed under a Creative Commons Attribution 4.0 International License

introduced to illuminate, resolve, or govern. In fact, there are very few metaphors, systems, or practices available to combat the plurality, syncretism, and unpredictability of external realities, whether they occur in real, virtual, or digital spaces. As a result, scholars suggest that architectonics as a worldview and metaphor is essential to the critique of architecture as a metaphor in the West (Karatani, 1995, 2005; Lahiji, 2024). To comprehend why architectonics operates so effectively in this role for illuminating the relationships among ancient pedagogues, automata or robots, and digital platform governance, we must understand how architectonics emerged in ancient Greece along with some of our earliest understandings of the word technology or *techné*. However, before I revisit architectonics and techné as they were conceptualized in the ancient world, I must first illustrate how architectural metaphors proliferate in the academic literature on digital platforms and digital platform governance, thus echoing the will to architecture and anticipating architectonics. Using architectonics as a paradigm, I reassess Bernstein's (2000) conceptualization of pedagogic governance and reveal why architectonics serves as an alternative conceptual framework and metaphor for contextualizing and evaluating digital platform governance.

Contextualizing the Problem

As mentioned earlier, architectural metaphors are increasingly used to contextualize crises in education inspired by digital platform governance, particularly in education (Decuypere et al., 2021; DeNardis, & Hackl, 2015; Nichols & Dixon-Román, 2024; Williamson et al., 2022). Although the definition of the term digital platform governance lacks consensus, it generally refers to the digital ecosystems, content and infrastructural mediations, and processes of control used by technology companies such as Google and Amazon to command and rearticulate the habits and interactions of human (people) and nonhuman (things) entities. This is accomplished by extracting, collecting, and managing their data and data proxies across space and time using Internet-based hardware and software systems that connect providers and users (Gorwa, 2024; Srnicek, 2017; Williamson et al., 2022). What is increasingly viewed as an emerging crisis by many scholars is the unregulated power that technology companies exercise in their procurement, assetization, and governance of data under the rubric of (neo)liberalism and the automation of administrative and pedagogical practices by actors outside the field of education (Kerssens & van Dijck, 2022; Nichols & Dixon-Román, 2024; Williamson, 2016). In fact, technology companies such as Amazon increasingly position themselves as the underpinning architecture that enables the governance of education systems and practices on a global scale. According to Dammann et al. (2022), digital platform governance is replacing (neo)liberal forms of governing. In neoliberal approaches to governance, subjects are viewed as rational human actors who are incentivized by their individual agency, particularly in a competitive economy. However, the transformative power of digital platforms increasingly disrupts humanism by substantiating posthumanism, a term often used to describe spaces in which the borders among humans, animals, and machines suddenly blur and reconstitute human (people) and nonhuman (things) social relations (Chandler, 2015; Gunkel, 2023).

In other words, digital platforms excite criticism and crises because they introduce fundamental changes or disruptions in the production and management of human subjectivity and

This work is licensed under a Creative Commons Attribution 4.0 International License

knowledge through their command and commodification of behavioral data about us. Additionally, digital platforms produce our data proxies or nonhuman counterparts, which can be commanded by others to construct new ways to organize and control social relations and cognitive labor (Chandler, 2015; Dammann et al., 2022; Srnicek, 2017). Consequently, Lepore (2026) noted that nearly every aspect of democratic life is susceptible to subversion through digital manipulation, automation, and what she called the trussing of government by corporate-owned digital architectures. In this instance, governance can be enacted without the presence or consent of humans who are increasingly supplanted by artificial intelligence, data proxies, robots, and other technological devices that manipulate and control human desires and decisions. This social dynamic is at odds with the individual agency that we associate with liberal democracy, which necessitates the consent of the governed (Lepore, 2026). This assessment might explain why scholars in education continue to raise concerns about how Amazon uses its global connective architecture to create new forms of governance based on the social, economic, and technical interactions that underpin digital platforms and the Internet-based software systems that connect providers and users. Digital platforms do this through the capture, datafication, and monetization of information about our behavioral patterns and social interactions (Kerssens & van Dijck, 2022; Williamson, 2016; Williamson et al., 2022). According to Nichols & Dixon-Román (2024), digital platforms use their technical architectures to expand administration, instruction, and learning in education, generating a vast network of data from students and teachers that can be aggregated and cultivated for pattern analytics and decision-making. "Not only does platformisation cede tremendous influence over the everyday activities of public education systems to private technology companies," they wrote, "but it also tethers institutional decision-making to the governing logics of the code, algorithms, and data processes that underwrite platform technologies" (pp. 309–310).

This assessment might explain why Carbonell et al. (2016) observed that the metaphors associated with emerging technologies sometimes exhibit an ontological character and treat abstract concepts such as data as if they were materials and interrelated components. Carbonell et al. also identified metaphors—or the conceptual tools we use for understanding one phenomenon in relation to another—as a promising line of inquiry for appreciating the commonality of using structural relations to investigate the evolution of technologies and their impact on society. For example, Decuypere et al. (2021) described digital platforms as digital architectures that act as spatiotemporal constellations in which certain user activities unfold and transactional data are produced and circulated. To further contextualize their conceptualization of digital architectures, Decuypere et al. explained how digital platforms build on one another. Therefore, we must view them as layered stacks of modules that combine and integrate in different ways. As a result, digital platforms make different activities possible through these structures and their interfaces, thus making specific content and interactions possible and permissible regardless of context.

In fact, platforms function as digital intermediaries that define and structure different forms of discursive exchanges and specific forms of governance. In this sense, digital platforms—as digital architectures—make different social identities, formations, and interactions possible. They also generate alternative educational experiences for students and new forms of

This work is licensed under a Creative Commons Attribution 4.0 International License

educational expertise for faculty and administrative personnel. However, these architectures are also renowned for their surveillance protocols and capacities, which turn our identities, experiences, and interactions into transactional data for the ends of others. This characterization of digital platforms helps explain why Decuypere et al. (2021) advanced digital architecture as a metaphor and invitation to explore how digital platforms function as theoretical spaces and pedagogical tools for disciplining, configuring, and regulating human and nonhuman entities.

However, few studies in education challenge or consider the ways in which architectural metaphors—as exemplified by Decuypere et al. (2021) and others—are appropriated and advanced to shape our worldviews and approaches for understanding digital platforms. Nor do many studies explore how nonhuman agents such as robots unsettle our contemporary understanding of the relationship between pedagogy and governance, particularly as they emerge together in slave societies such as ancient Greece (Chandler, 2015; Devecka, 2013; Inmon & Linstedt, 2014; Sparrow, 2019). Most educators have limited their description of pedagogy to the art of teaching and seldom consider its disciplinary function or articulation as a form of governance (Foucault, 2000; Sefton-Green, 2022). Schick and Timperley (2022) have called for a more expansive understanding of the purpose and role of pedagogy in society and our academic institutions. Our current conceptions of pedagogy are underpinned by the Cartesian mind–body binary that often treats these components as separate entities. Scholars would agree that this dyadic approach forecloses the range of alternative ways of knowing and being often transformed by the global connective architectures associated with digital platforms as ubiquitous tools for governance (Gorwa, 2024; Hughes, 2017; Schick & Timperley, 2022; Williamson et al., 2022). As an alternative, scholars such as Pykett (2012) appeared to advance a conceptualization of pedagogy that illuminates how human and nonhuman agents are enrolled in an architecture of governance beyond the sphere and influence of formal education. She argued, "Pedagogy also denotes a sense of the 'science' or 'arts of teaching', which prompts us to contemplate indirect and apparently contradictory modes of governing" (p. 1). Governing through pedagogy is architectural in the sense that it plays out in different structures, forms, and spaces using complementary and sometimes conflicting mechanisms, strategies, and discursive positions. Notably, in this case, the use of architectural metaphors to examine the exercise of power through pedagogy is characterized by competing agents and assemblages that permit both domination and resistance, thus allowing us to investigate the governability of liberal citizens and the agency that inspires them to react and co-construct governance as a social practice in the digital age (Lemke, 2009; Pykett, 2012).
For some scholars, these ideas reflect aspects of Bernstein's (2001a, 2001b) understanding of pedagogic governance. However, there are cases that suggest that pedagogic governance, as imagined by Bernstein, may enable structures and forms of (mis)governance that decontextualize many of the challenges associated with digital platforms and the ways they advance new forms of social control (Dammann et al., 2022; Kwok, 2021; Moore et al., 2006; Tyler, 2004). Therefore, our application of Bernsteinian appreciations of pedagogic governance may be disadvantaged in terms of helping educators illuminate and contextualize digital platform governance and the crises it inspires in education and beyond. If this is the case, then scholars such as Lemke (2009) may be correct in advocating an alternative understanding of governance that offers us the kind of philosophical and historical context that

This work is licensed under a Creative Commons Attribution 4.0 International License

is often absent in Bernstein's (2001a, 2001b) conceptualization and the academic literature that explains the rise of digital platform governance in education and beyond. As a result, aspects of Bernstein's pedagogic governance may need to be reconsidered and exceeded with an alternative paradigm.

Reconsidering Bernstein

One criticism of Bernstein's extensive oeuvre is that it supports structuralist and poststructuralist interpretations of power, pedagogy, and governance, which can result in early accounts and applications of his theories competing with later articulations (Best, 2007; Singh, 2017; Tyler, 2004). However, advocates value his theorization of pedagogic governance as a useful onto-epistemological framework for exploring the relationships among sociology, education, and technology (Martins & Mainardes, 2026; Moore et al., 2006; Singh, 2017; Tyler, 2004). More specifically, Bernstein (2001a, 2001b) treated pedagogic governance as a form of social theory exercised through a regime of learning. As a result, techno-social relations between teacher and student mirror those between employer and employee and governor and governed. Singh (2017) observed, "The 'state–citizen relation' is 'essentially pedagogical', engaged in governing conduct through developing competencies in all aspects of life rather than 'directly instructing citizens or interfering in their otherwise free lives'" (p. 146). The relationship between teachers and students serves as the social basis and foundational model for comprehending other social relations and their various discourses, contingencies, and agencies. Additionally, Bernstein (2001a) introduced the idea of the totally pedagogised society to refer to the state-driven condition in which pedagogy begins to penetrate all aspects of life and not just schools, reflecting neoliberal demands for the constant learning and trainability of individuals. The term also encapsulates how social crises and risks are translated into forms of lifelong learning that make workers constantly adaptable and pliable in a rapidly changing information economy (Ball, 2009; Bernstein, 2001a). As digital technology inspires new social and economic modes of expression and production, Bernstein (2001a) noted that the survival of humans as social agents increasingly depends on their ability to be taught and their ability to respond effectively to different expressions of pedagogy. In this instance, social agency is located in the human body and institutions outside the control of individuals. Bernstein described these institutions in terms of the roles they perform in different areas of the division of labor, which affects the construction of the consciousness of human agents and agency (Best, 2007). For Bernstein (2001b), agents and agencies are important because they regulate identity and social relations through pedagogic discourse and the division of labor. Thus, human agents—those imbued or inspired with the capacity to act—often function as acquirers whose agency situates them within the social division of class and labor.

This view of human agency might explain why Bernstein (2001b) insisted that the division of labor is also a division of specialized discourses, agencies, and agents. In some respects, this insight also informs Sefton-Green's (2022) appreciation for and application of Bernstein's work in his study on the emergence of digital platforms as technologies of control. For example, Sefton-Green claimed that pedagogy can help us engage digital platforms as technologies of power that permeate nearly every aspect of social and economic life in the

This work is licensed under a Creative Commons Attribution 4.0 International License

digital age. More specifically, he claimed that a "theory of pedagogy, derived from Bernstein's ideas about pedagogic devices, facilitates insight into how platforms exert power and how users are schooled into compliance" (p. 904). For him, pedagogic relations are mediated by the technological architectures and surveillance protocols of digital platforms. He stated that the principles of pedagogy—as they are supported by Bernsteinian theory—suggest that "subjects, forms of knowledge, forms of communication, other forms of nonhuman actors and tools, all combine with forms of discipline derived from schooling to contribute to a pedagogical regime through which various kinds of power are sustained and enacted" (p. 903). Digital platforms transform pedagogical practices into digital acts. They also translate human and nonhuman activities into data susceptible to extraction, commodification, and colonization. As a result, the pedagogisation of digital platforms captures a more nuanced account of human agency within the larger socioeconomic processes of political control and governance. Yet Sefton-Green (2022) and others might agree that the ubiquity of digital platforms and their ability to enforce authoritarian regimes are often taken for granted in critical studies that draw attention to socioeconomic inequalities that digital platforms often exacerbate in education and society. He claimed that schooling across populations is inevitably related to the emergence of digital platforms as a dominant mode of economic, social, and political control. Therefore, scholars and educators are increasingly turning to the work of Bernstein as a way to illuminate pedagogic relations as a dominant mode of social control and a way to think about the role of pedagogic power in what some Bernstein scholars have viewed as an increasingly globalized, networked society permeated by digital technology (Sefton-Green, 2022; Singh, 2017; Tyler, 2004). However, as corporate-owned digital architectures continue to undermine elements of public and democratic life and reimagine constitutionality in the name of government by machine, one might be left questioning how viable the Bernsteinian approach to pedagogic governance can be in this context and why an architectonic approach warrants consideration in an age in which advanced technologies are ubiquitous, constructivist, and often disruptive (Ball & Collet-Sabé, 2025; Lepore, 2026).

In their assessment of neoliberalism, Ball and Collet-Sabé (2025) were critical of Bernstein's social approach to reform in education. They claimed that such approaches and models have been unsuccessful because they have resulted in the further colonization of education by outside influences. Too often, sociologists of education such as Bernstein preoccupy themselves with subjectivities and relations of power, even when changing technological realities demand alternative rationalities and paradigms (Ball & Collet-Sabé, 2025; Martins & Mainardes, 2026). This point is compounded by concerns that Bernstein's reading of a society constituted by pedagogic processes lacks the kind of socio-semiotic framework needed for the information age, in which pedagogic relations are conditioned by indeterminacy and capaciousness (Taylor, 2004). These are the kinds of descriptions Ball and Collet-Sabé (2025) associated with the social and economic instabilities caused by (neo)liberalism and advanced technologies such as digital platforms. To clarify, the term *liberalism* is generally regarded as a philosophy and an approach to governance in which democratic principles and practices support a commitment to individual liberty and the limited interference of the state in one's sovereignty, agency, and pursuits in civil society (Dean, 2002; Lepore, 2026). This view is also reflected in the state's approach to the economy and markets as self-regulating spaces. For

This work is licensed under a Creative Commons Attribution 4.0 International License

many thinkers, neoliberalism extends many of the principles and practices associated with liberalism, particularly regarding the economy and markets. In a neoliberal approach to governance, the state plays a key role in constructing, managing, and optimizing these areas, particularly through privatization (Ball & Collet-Sabé, 2025). More significantly, neoliberalism highlights the ways in which the art of governance can be used to manage and control states, corporations, schools, and individuals using a capitalist logic that promotes self-interest, competition, and the accumulation of power and wealth. Ball and Collet-Sabé (2025) claimed that neoliberalism has brought volatility, insecurity, and recurring crises into many aspects of personal and socioeconomic life in ways that reproduce inequality. To encapsulate this phenomenon, they used the term *poly-crisis* to describe the impact of neoliberal approaches and practices in the digital age, in which the self is regarded as a form of capital, property, and data made governable through artificial intelligence, algorithms, and digital platforms. They noted that neoliberal sensibilities value humans as entities that need to be made controllable and exploitable for the ends of others. In the past and in the present, technology has often been used in the service of this objective rather than for the expansion of liberal democracy. By exploring social and pedagogical relations in ancient Greece, particularly as they are characterized by Aristotle, we can illustrate this point and its significance in helping us understand architectonics as a substantive paradigm in an age of emergent and advanced technologies (Acemoglu & Johnson, 2023; Drewniak, 2009; Forsdyke, 2021; Landrum, 2015; Schatzberg, 2018).

Architectonics as Paradigm

In ancient Greek, the word techné is often associated with the term art as well as others, including skill, craft, and one's practical ability to do things or work (Landrum, 2015; Ramić, 2024). Schatzberg (2018) noted that the concept of techné is difficult to translate, yet it is related to our modern term technology. When we define technology as the science of technique or the principles or processes of the useful arts, we come closer to a conceptualization of techné as it is generally associated with architectonics. In this respect, architectonics served as the guiding conceptual tool that many ancient Greek thinkers used to explain the structure, hierarchy, and ends of knowledge as exhibited in Aristotle's tripartite division of knowledge, which organizes these categories and their associated criteria, activities, and relations. For example, most scholars recognize Aristotle's tripartite division of knowledge as his way of meditating on the basic categories of intellectual inquiry and the accompanying worldviews and activities that advance them for a stable *polis* or city-state (Johnson, 2015; Ramić, 2024). The tripartite order of knowledge includes the theoretical arts, the practical arts, and the productive arts. According to scholars, Aristotle considered the art of politics to be architectonic and significant because it was the science that helped one control and govern society, including the economy and the military. Landrum (2015) claimed Aristotle identified politics as the most architectonic art and positioned the political philosopher as the architect of the common good, which should be the aim of politics and citizen-leaders in the polis. However, in *Politics*, Aristotle (ca. 350 B.C.E./2000) presented some of his most revealing comments on the relation between slavery and governance, particularly in Greek households in which slaves often played a significant role as laborers. Unsurprisingly, Landrum (2015)

This work is licensed under a Creative Commons Attribution 4.0 International License

claimed that Aristotle used the example of the architect to characterize the significance of masters as household managers. She noted that Aristotle's use of the metaphor was to help him assess and comprehend the different types of leadership and management skills necessary for governing the polis, the household, and the duties of the slave.

For example, masters who had large households to manage often required the help of several slaves. Slaves were considered chattel or property and human tools. The business of acquiring them was necessary for a functional household and for freeing the master and other family members for participation in government, education—particularly arts such as philosophy and politics—and leisure activities. In Aristotle's (ca. 350 B.C.E./2000) slave commentary, he noted that, from the hour of birth, some humans will be marked as slaves and others will be marked as rulers. He demonstrated how architectonics informed his thinking on the topic of governance when he explained how distinctions between rulers and those who are ruled come to light in all things that form a composite whole assembled by the relations of its parts (Drewniak, 2009; Johnson, 2015; Landrum, 2015). The ruler–ruled binary is not only a necessity, according to Aristotle; it is also an expedient for the maintenance of chattel slavery in the ancient world and a stable polis (Forsdyke, 2021; Schatzberg, 2018). Generally, slaves were sometimes considered members of the household as well as tools for action rather than tools for production. For Aristotle, their most important duty was to assist in the maintenance and support of life in the household and not simply make and do things (Landrum, 2015; Ramić, 2024). Therefore, in the household and in ancient Greek society, the slave was an animate tool governed by others. The governance of a household usually involved three interrelated parts, according to Aristotle (ca. 350 B.C.E./2000). These parts typically included the rule of the master over the slave, the husband over the wife, and the father over his child or children. Aristotle reasoned that every member of the family in the household is governed by the master, just as every family and household is part of and governed by the city-state. As a result, children had to be trained and supported for life in the city-state.

In ancient Greece, slaves played significant roles in the training and education of children, particularly in wealthy households. As mentioned earlier, slaves who functioned as stewards, chaperones, and moral instructors were often called pedagogues. Our modern spelling of the term derived from the Latin word *paedagogus*, which describes a leader or conductor of children (Salvatori, 1996; Wrenhaven, 2015). The prevalence of slaves in these roles highlights the emphasis often placed on conduct and discipline for pedagogues and their pupils. A well-educated slave could work as a formal teacher or pedantic tutor in a wealthy and prestigious household or a child-minder or steward in households with little to no wealth or status. Therefore, slaves had different roles, privileges, and socioeconomic statuses in different types of households (Forsdyke, 2021; Wrenhaven, 2015). In fact, any (in)formal instruction or vocational training a slave might receive usually advantaged the masters and pupils who owned and commanded *them*. In some cases, pupils were deferential and subservient to their pedagogues, particularly those known for being excellent teachers or civil servants. A pedagogue might even be a trusted attaché, advisor, and teacher for the master and the master's children. Wrenhaven (2015) stated, "This is just one of the many paradoxes intrinsic to slavery,

This work is licensed under a Creative Commons Attribution 4.0 International License

namely, that free children in antiquity were cared for and given moral instruction from arguably the most detested figure of all: the slave" (p. 465).

However, this perspective competes with the ways that Foucault (2000) linked the governance of children to the great problematic of pedagogy that developed during the sixteenth century. Foucault's assessment is at odds with what one might call the great paradox of pedagogy as it first emerged in slavery in ancient Greece (Dahl, 2006; Givens, 2021; Rolls, 2022; Salvatori, 1996; Wrenhaven, 2015). In fact, Forsdyke (2021) noted that several politicians, educators, and enslavers turned to Greek philosophers such as Aristotle to legitimate and advance slavery as a form of imperial governance, a management paradigm, and a capitalist enterprise. She reported that slaveholders, including those in the antebellum South in the United States, frequently turned to Aristotle's arguments and insights defending slavery. Notably, historians of slavery often omit or underplay the fact that Aristotle also imagined the ways technology, specifically automata or robots, might be used to replace slaves in the labor force and alleviate many of the horrors and contradictions associated with the maintenance of slavery in ancient Greek society. However, the paradox of slavery in ancient Greece seems to be accepted as the natural order of society in other areas of Aristotle's writings (ca. 350 B.C.E./2000). For example, he considered slaves to be living tools whose actions were commanded and governed by their masters. Using Aristotle's musings on slaves and robots, we discover that his early speculation about the transformative nature and future of technology anticipates many of the anxieties and challenges associated with the impact of advanced technology on social life today (Devecka, 2013; Gray et al., 2025). Therefore, it is not uncommon to find imaginary automata or robots appearing in Greek philosophy and mythology. For example, Hephaestus, the Greek god of artisans, carpenters, and craftsmen, is noted for his invention of automated tripods or moving furniture and mechanical handmaidens. After all, it is in mythology and the thought experiments of philosophers such as Aristotle that we begin to see significant considerations of the ways in which robots might have supplanted slaves in the division of labor in ancient Greek society.

In fact, mythological automata or robots served as a metaphor and imaginary technology for some thinkers in ancient Greece, helping them to contemplate many of the conflicts implicit in a slave-based economy conditioned and regulated by many of the same philosophical, sociopolitical, and legal precepts that underpinned the idea of democratic governance. Using an architectural metaphor to make his point, Aristotle (ca. 350 B.C.E./2000) stated that, if every instrument could accomplish its own work of its own accord, like Hephaestus's tripods, then there would be no need for assistants for architects (sometimes translated as craftsmen) or slaves for masters. In this instance, Devecka (2013) argued that Aristotle imagined technology as a potential escape from slavery and the forms of subjugation and violence that often proliferated in the slave-based economy essential to the maintenance of the Greek way of life. However, the easy availability of slave labor did not orient "technological development along such lines. In fact, the interest of a slave-based economy in its own preservation simply dictated that technologies as expensive and craft-intensive as automation were not going to be used in a revolutionary way" (Devecka, 2013, p. 66). This point reveals how ancient and modern socioeconomic systems seldom endorsed or cultivated forms of technology that potentially

This work is licensed under a Creative Commons Attribution 4.0 International License

undermined them or encouraged their collapse. Robots would become one of many standard elements and options for rule by those in power, which is why critics have tended to argue that technological development often magnifies and reproduces the status quo and the inequalities inherent in most economies. In this instance, an economy based on slavery in places such as ancient Greece inspires a reconsideration of the ways automation and technology impact social relations and democratic governance in modern times (Devecka, 2013).

A similar reasoning is evident in Levine's (2018) study on the development of the Internet as the infrastructure that made the rise of digital platforms and digital platform governance possible. He argued that the Internet and the networked technology on which it subsists do not transcend the human world. For better or worse, the Internet is "an expression of this world and was invented and is used in ways that reflect the political, economic, and cultural forces and values that dominate society" (p. 274). With this in mind, it becomes more challenging to accept that the introduction of the Internet, digital platforms, and other advanced technologies is the quintessential expression of freedom and democracy as many technology optimists advocate (Benjamin, 2019; Levine, 2018; Wolin, 2008). Advanced technologies encourage us to believe that we are artists and architects capable of remaking the world, yet they increasingly lead us toward what Demichelis (2022) called *totalitarian enslavement* to technology and its posthuman conditions and consequences. He argued that technology increasingly produces new forms of being that align with the neoliberal leanings of a market-technical society. Beginning at the end of the twentieth century, our understanding of liberal democracy was being supplanted by a return to authoritarianism and the emergence of *automatocracy* or what Lepore (2026) associated with rule by automation and government by machine-driven computation and analytics. The growth in governance based on artificial intelligence and algorithms is already evident in the automation of services in education, industry, policing, and the military (Hughes, 2017). This systematization of governance through artificial intelligence and algorithms using digital platforms has manifested a nation-state in which capaciousness, precarity, and artificiality are key features of a digital society that is multifarious, posthuman, and fundamentally architectonic (Hughes, 2017; Lepore, 2026).

For some scholars, the circumscription and authoritarianism enabled by the systematization of governance using advanced technologies have hastened a rearticulation of slavery for the digital age (Benjamin, 2019; Fuchs, 2017). The growing sophistication and capabilities of artificial intelligence allied with the increasing control and manipulation of personal data have curtailed liberty and democracy and enabled the emergence of new forms of enslavement through digital technology. In describing digital slavery, Chisnall (2020) claimed that the unfettered use of digital technology by "governments to drive administrative efficiencies and regulatory compliance can easily induce a form of infantile dependence in the citizen prosumer, eliminating questioning resistance and surreptitiously undermining civil liberties" (p. 502). In fact, the use of digital surveillance and personal data often functions as technologies of control with the potential to manifest totalitarianism. Not only is this process inherently pedagogical, according to Demichelis (2022), but it also invites us to reconsider the ways architecture as a metaphor has been used philosophically and historically in ancient Greece and beyond to govern and control human and nonhuman entities (Foucault, 2000). This insight represents

This work is licensed under a Creative Commons Attribution 4.0 International License

another instance that suggests that Bernstein's (2001a, 2001b) conceptualization of pedagogic governance based on the teacher–student relation as a social basis and foundational model may be ill-positioned as a contextualization and conceptual framework for illuminating and engaging digital platform governance as a technology of control that permeates all of our lives (Sefton-Green, 2022; Singh, 2017). This point returns us to the question posed earlier in this study: How might architectonics as an alternative conceptual framework and metaphor provide scholars and educators with the kind of philosophical and historical context they need to understand why digital slavery persists as a discourse in the academic literature, yet it is seldom recognized or applied when we use architectural metaphors to examine digital platforms as governance tools for social control? Below, I address this question by exploring how thinking with architectonics as an alternative conceptual framework and metaphor enriches our understanding of digital platforms as a governance tool for social control through pedagogy as it has manifested based on the master–slave relation and not the teacher–student relation as Bernstein (2000, 2001a) and his advocates indicated.

Thinking with Architectonics

In her evaluation of Bernstein, Singh (2017) claimed, "Pedagogy and pedagogic relations—increasingly allied with technology—move outside the confines of state-centralised bureaucratic boundaries to constitute the primary or totalising binding agency for social cohesion" (p. 151). If this is true, then Williamson et al. (2022) may be correct in claiming that technology companies such as Amazon increasingly function as state-like corporations and globalized governance actors. In fact, they suggested that digital services and data processing associated with state agencies are increasingly *cyberdelegated* to state-like corporations who use automation, artificial intelligence, data proxies, and data centers to manage public services and us. As a result, data are used to construct and reconstruct both persons and things to make them controllable and governable. From this perspective, data function as a medium that transforms sociality into something a computer and digital platforms can understand and manipulate for the governance of individuals and populations (Crooks, 2022; Inmon & Linstedt, 2014). This study suggests that Tyler (2004) was prescient in asking us to reconsider what kind of "theoretical framework might prove to be most promising for providing a baseline for a social semiotic of pedagogic discourse as defined in Bernstein's later writings" (p. 19). As a result, architectonics and its socio-semiotic relations become more relevant as a bridge that helps us recognize Bernstein's substantial contributions and how to exceed them. In doing so, we must supplant the teacher–student relation as the social basis and foundational model for illuminating and investigating the crises and challenges inspired by the increasing use of digital platforms as tools for governance and social control, particularly in education.

For some, education helps us respond to technological change. It is a socio-cultural structure and process that is intimately connected to the production and dissemination of foundational knowledge and forms of discipline that induce the productivity and docility of minds and bodies for the benefit of others (Foucault, 2000; Malott, 2021). However, education may be incapable of counteracting entirely new dimensions of governance underwritten by digital platforms and their (re)construction and command of data embodiments that are controlled by

This work is licensed under a Creative Commons Attribution 4.0 International License

technology companies incentivized by (neo)liberalism (Usher & Edwards, 1994; Williamson, 2016). In many ways, neoliberal policies advanced by digital technology and automation have resulted in the teacher–student relation being over-determined as a social subject in the sociology of education (Ball, 2009). As a result, the teacher–student relation as a preoccupation in Bernsteinian thought appears insufficient, considering the fact that a new onto-epistemology of the lifelong learner is increasingly constructed using nonhuman entities such as data proxies generated by human counterparts. These help shape, command, and govern our bodies, labor, and subjectivities for the benefit of others (Ball, 2009; Mejias & Couldry, 2024; Sefton-Green, 2022; Srnicek, 2017).

With these concerns in mind, the assessment below explains why an architectonic approach may be essential for understanding the crises and challenges introduced by the increasing use of digital platforms as a governance tool for social control through pedagogy as it has manifested from the master–slave relation as evidenced by slavery in ancient Greece. Architectonics helps us recognize the ways advancements in technology tend to reproduce histories of inequality and not those forms of shared property, prosperity, and power that lead to a widening of the democratic imperative as a fact on the ground. For example, digital platforms are not neutral entities. They are tethered to their owners and the governing logics associated with source codes, algorithms, and data processes that underwrite platformisation (Acemoglu & Johnson, 2023; Nichols & Dixon-Román, 2024). The human subjects from whom this data is procured can no longer be viewed as sovereign and autonomous agents, but as posthuman subjectivities and profiles rearticulated by digitalization as an effective form of governance maintained by corporate owners. More specifically, Crooks (2022) noted that data can represent complex phenomena mimetically and automatically, serving as machine-readable proxies for any person, place, process, or thing in the world. As the new sites for controlling social behavior and interactions, data and their nonhuman proxies can be constructed, organized, and manipulated for the ends of others. Chandler (2015) viewed increasing scholarly interest in posthumanism as an indicator of the changes necessitated by the impact of surveillance, digitalization, and datafication on governance, power, and human agency. However, Turner (2014) likened the posthuman turn to the ways in which advanced technologies increasingly reflect the architectonics of control. He claimed, "In questioning the *end*, aim, or *telos* of an architectonics of control, we are looking at 'the kind of being which power-knowledge relations attempt to produce'" (p. 48). In other words, the expropriation of our personal data plays an increasingly important role in determining what constitutes a human, property, and an asset and how power is exercised for their governance and control (Chisnall, 2020; Damman et al., 2022; Srnicek, 2017). Chisnall (2020) claimed that increasing levels of personal data are embodied online and commoditized using digital platforms and other devices, enabling governments and corporations to effectuate more coercive forms of surveillance and control through artificial intelligence and automation. Therefore, this adaptation in the protocols and use of advanced technology should be reflected in our understanding of pedagogy and governance.

The architectonics of control reminds us that digital platforms signal advanced technology as the ascending instrument and principle of power. This characterization helps explain why some

This work is licensed under a Creative Commons Attribution 4.0 International License

scholars have argued that we need a deeper understanding of how governance using platforms works, particularly in education (Nichols & Dixon-Román, 2024). To understand how architectonics helps us fulfill this need, it is important to clarify why (neo)liberalism is a significant context for explaining why the master–slave relation deserves more attention when it comes to understanding the emergence of digital platform governance as a tool for social control. In this respect, Lemke (2009) was right in stating that governance can offer us opportunities to examine historical perspectives that are often missing in the academic literature and our theoretical approaches. More specifically, Bühlmann (2018) suggested that an architectonic disposition recognizes the asymmetries inherent in our architectural and social relations, including the impact of posthuman interactions on the governance and control of human agents.

What architectonics teaches us is that these are concerns that also interested thinkers such as Aristotle (ca. 350 B.C.E./2000) long before the arrival of digital platforms, artificial intelligence, and modern robots. According to Devecka (2013), "The substitutability of slaves and robots helps to elucidate a thing generally apparent in Greek philosophical accounts of slavery; namely, that slaves had somehow 'fallen out' of human society and even out of human nature" (p. 63). The denial and exclusion of slavery in our discourses and studies of pedagogy in education often make this point difficult to recognize. However, DuBois (2003) argued that our misrecognition of slavery has contributed to a myth of origin for Western civilization and an occulting of the ways in which slavery is implicated in our understanding of democracy in the West. The lives of slaves in ancient Greece are significant in the histories of ancient civilizations and today because they remind us that one's human status can be judged on a sliding scale in which some are valued as citizens and others are merely animate tools or living things commanded and commodified by others (DuBois, 2003). Additionally, the master–slave dyad was one of the main units of social relations in many households in ancient Greece. Yet to fully understand this power dynamic, it is important to know that this relation often included the triad represented by master–slave–pupil social interactions, making this a potential blueprint for understanding control and communication through pedagogical relations in architectonics.

To help us fully appreciate the performativity and multidimensionality of social relations on different levels, architectonics prioritizes the triadic character of human and nonhuman interactions. The master–slave–pupil triad is an essential starting point because it contextualizes pedagogy and power in ways Bernstein's (2000) theories do not. With architectonics as a conceptual framework, we find that the master–slave–pupil triad in ancient Greece mirrors the triadic nature of dialogue and self mentioned earlier (Holquist, 1990, 2015). In other words, the master (center), slave (not center), and pupil (the relation between them) are components that model pedagogic governance and paradox in ways that help us contextualize and explain continuities and asymmetries in other socio-technical relations, including employee–employer and state–citizen interactions that are features of (neo)liberal democracy in the West. For example, this assessment represents an accessible iteration of the universal categories of *firstness*, *secondness*, and *thirdness* that some semioticians have associated with the architectonics of freedom (Peirce, 1931; Ward, 2001). More specifically,

This work is licensed under a Creative Commons Attribution 4.0 International License

firstness (master or center) describes the feeling of unboundedness, in which one is essentially free to think, act, and create as one pleases. Secondness (slave or not center) is the absence of freedom and possibilities, in which one is constrained or bound by the fact that some force or power compels (dis)agency, circumscription, and struggle. Thirdness (pupil or the relation between master and slave) integrates firstness and secondness, bringing certain components or elements together for a particular purpose or future goal. It describes the synthesizing process that underpins the formation of social relations in which freedom, agency, and conduct are incentivized and governed by ideology, reason, and a system of laws (Peirce, 1931). However, architectonics reminds us that competing discourses and interests often condition the application or evasion of the law in ways that cause one set of constraints and struggles to extend or replace others under the banner of progress and pragmatism. This might explain why thirdness is fundamental to our understanding of the paradoxical character of democratic governance as well as innovation and learning (Peirce, 1931, 1955; Ward, 2001). With this worldview, we can contextualize how technology companies and elites operate outside and above the state, remaining protected but unbound by its laws and social institutions. Yet many non-elites and minorities are seldom granted the same privileges even though many use the same technologies and share the same democratic ethos as those who benefit the most from democracy's paradoxical character in the West (Dean, 2002; Wolin, 2008). In the age of digital platform governance, the triadic or architectonic dimensions of freedom are significant because they allow us to model pedagogy and the processes of control and communication that drive social interactions among technology providers or owners (firstness), users (secondness), and data proxies or robots (thirdness) in ways architectural metaphors do not.

The triadic nature of social interactions, whether they occur in real, virtual, or digital environments, is a feature supported in social theory, semiotics, and pragmatism by influential theorists such as Peirce (1931, 1955) and Simmel (1908/2009). Their thinking has resonated in Bernstein's social approach to pedagogy and education. Tyler (2004) claimed that Bernstein's terminology shares some important features with the socio-semiotic approaches of contemporary exponents of American pragmatism. For him, the influence of the pragmatist tradition seems to underpin the development of some of Bernstein's sociological theories. The lack of recognition of this resemblance by most scholars may be a byproduct of the overemphasis placed on the teacher–student dyad as a primary social construct and model (Tyler, 2004; Usher & Edwards, 1994; Ward, 2001). In fact, the Bernsteinian approach encourages us to focus on the teacher–student relation rather than the master–slave relation as the social basis and foundational model for comprehending the exercise of power in other socio-technical relations, including employee–employer and state–citizen interactions. The contributions of slaves to the emergence of pedagogic governance are often undervalued or unconsidered in the work of Bernstein (1990, 2000) and other scholars in education. This makes the significance of slaves in the history of pedagogy and education more relevant for illuminating the paradox at the core of (neo)liberal democracy in the West and how its contradictions will likely be exacerbated by digital platform governance in the future.

To clarify the contradictions in (neo)liberal democracy, it is significant to note that liberalism and neoliberalism are entwined by the fact that both approaches to governance underwrite

This work is licensed under a Creative Commons Attribution 4.0 International License

capitalist practices, private property, and individual agency as foundational in a democratic society permeated by digital technology. More significantly, both are undermined by the accusation that our various articulations of liberalism use architectonic relations and authoritarian measures as necessary elements in the governance of individuals and things in a democratic state (Dean, 2002; Lepore, 2026). Additionally, architectonics asks us to prioritize the simultaneity of differences and incessant performativity that produce these paradoxical relations, thus conditioning how we understand complex realities associated with asymmetrical relations of power. Therefore, using an architectonic lens, the paradoxical relations at the core of (neo)liberal democracy in the West become understandable. For example, McNally (2025) explained how, from its inception, liberalism has been covered in the blood of slaves. In modern societies, liberalism remains steeped in crisis, conflict, and struggle, signaling the processes of becoming associated with the movement from unfreedom to regulated freedom in architectonic thought. In the West, slavery is inseparable from our understanding of freedom, especially since capitalism, corporatism, and technology have rearticulated, but seldom transfigured, the fundamental asymmetry of power between owners (employers) and workers (employees) over time. What may be most significant about McNally's (2025) assessment of liberal governance, which is also supported by Acemoglu and Johnson (2023), is that it reminds us that technological innovations in capitalist societies tend to reproduce inequality and intensify the extraction and exploitation of labor for the production of goods and services by those who own and control the means of production. As a result, McNally (2025) reported that slavery is not an archaic remnant. It is an archaic social relation preserved in many of our modern systems and practices (Dahl, 2006; Hegel, 1807/2018).

In many ways, architectonics helps us articulate the paradoxes at the core of (neo)liberal democracy in the West and how they affect nearly all areas of modern society. Democracy is considered the form of government most conducive to recognizing and sustaining individual freedom, agency, and civil rights. Wolin (2008) argued that the idea of democracy introduces a radically different arrangement and conceptualization of power in which equality informs the way it is made possible and exercised through social cooperation and participation. In education, Bernstein (2000) linked democracy to the kinds of pedagogic rights that allow individuals to participate in society as civic and sovereign agents. This includes the right to participate socially in the construction, maintenance, and transformation of social order through democratic governance. However, Bernstein's (2000) position is also undermined by the fact that the paradoxical or architectonic character of democracy associated with modern forms of governance can also relocate people within more stringent forms of social regulation and self-regulation (Finkel & Arney, 1995; McNally, 2025; Usher & Edwards, 1994). This insight is substantiated by the fact that the dominant political systems that have emerged in the West were not born democratic or necessarily inclined to respect or recognize everyone's individual rights. In fact, many democratic political systems were often constructed by privileged individuals and groups that were skeptical or hostile to democracy in theory and practice. For example, leading scholars have described how contradictions were embedded in the emergence of democracy in ancient Athens. In fact, Athenian democracy was extreme in its exclusivities, but it was not unique in demonstrating how the (il)logic of democracy and equality was sustained by slavery, violence, and inequality. Forsdyke (2021) noted that, in

This work is licensed under a Creative Commons Attribution 4.0 International License

ancient Athens and elsewhere, slaves had few legal or political rights and their bodies were imagined to be constructed for the demands of physical labor and their mental capacities cultivated for following the commands of others.

From ancient Greece to modern times, some people have been excluded as humans and citizens, including slaves, women, and children in many instances. Dahl (2006) also identified this as the case with democracy in the United States, which often excluded many African Americans and Native Americans as well. Outside of disciplines such as history, literature, and anthropology, few scholars or educators care to be reminded of slavery as a dominant socioeconomic reality and paradigm in the emergence and maintenance of (neo)liberal democracy and differentiated education in the West (Givens, 2021; Malott, 2021). Nonetheless, this point highlights a key insight about the nature of power regardless of the form of government in which it is exercised. Human beings desire power over other individuals and things because power is satisfying. Its instrumental value resides in the fact that a wide variety of satisfactions and benefits can be derived from it (Dahl, 2006; Hegel, 1807/2018; Patterson, 2018). What this point also makes clear is that governance and technology translate and mediate power in society. When power is organized and exercised in the form of a socioeconomic system based upon private capital, digital technology, and the division of labor, then inevitably most people will be governed by others; and that form of governance will tend to be architectonic or paradoxical in practice. In ancient Greece and today, architectonics contextualizes and crystalizes how technology is often placed in the service of governance as a tool for social control (Acemoglu & Johnson, 2023; Wolin, 2008). As a result, architectonics encourages interdisciplinary research that supports investigations that exceed theoretical approaches that rely on the stasis associated with architectural metaphors and the decontextualization inherent in Bernstein's (2000) conceptualization of pedagogic governance.

Concluding Thoughts

This study has introduced evidence that supports and recommends architectonics as an alternative conceptual framework and metaphor that bridges the past and present to enrich our understanding of the ways digital platforms are increasingly used as governance tools for social control, particularly in education. It advances architectonics as a way of meditating on performativity, creativity, and the construction of human and nonhuman entities through discourse or personal data. It is in this sense that architectonics is recognized as a form of governance that conditions the behaviors of people and things in ways that exceed conceptualizations by scholars such as Bernstein (2000). In many ways, architectonics makes pedagogic governance possible through the structural forms, paradoxical relations of power, and conflicting agencies that coalesce to condition, transform, and reconfigure an open field of possibilities into one that is circumscribed or foreclosed for many people. More significantly, architectonics reminds us that the concerns that thinkers in ancient Greece had about the socioeconomic politics of robots replacing slaves in the labor force have been amplified today. This study suggests that digital platforms, artificial intelligence, and algorithms renew anxieties about the role of robots in modern society and how they increasingly disrupt the border between human and nonhuman agents in the workforce and beyond. Sparrow (2019) reminded us how

This work is licensed under a Creative Commons Attribution 4.0 International License

robots and slaves were often imagined as sharing the same virtues and abilities to perform similar tasks. In the 1930s, engineers at Westinghouse Electric Company created what some credited as the company's first Black robot or mechanical slave (Abnet, 2020; Hampton, 2015). The robot was named Rastus. Rastus was designed and developed to propagate the company's message of robotic slavery to middle- and upper-class White families in the United States. The engineers used rubber to create Rastus's dark skin, thus signaling to workers that Whites could still maintain their racial privileges even if robots threatened their positions in the workforce and the division of labor. Notably, Rastus was also used pedagogically to sell Westinghouse products and assuage the fears that many people had about automation and losing their jobs to machines (Abnet, 2020; Hampton, 2015; Sparrow, 2019; Wiener, 1988).

Today, robots are characterized as machines increasingly designed with artificial intelligence and made governable using digital platforms and algorithms that help them act independently or respond to the commands of others (Gellers, 2021; Gray et al., 2025). To encapsulate the ways robots are transforming the workforce and the division of labor, Gray et al. (2025) used the term agents of replacement to describe how robots are designed to supplant people who do menial and repetitive jobs in the workforce. The defining, yet paradoxical, characteristic of robots as agents of replacement is architectonic in the sense that they are technological innovations designed, constructed, and cultivated by humans to replace other humans. Machines, particularly those enhanced by large language models such as ChatGPT and Google Gemini, can complete tasks that many thought required agent-based forms of cognition recognizable only in humans. However, different agents have always had different capacities and repertoires of actions, explaining why the human use of nonhuman agents such as data proxies and robots may be the most powerful social relationship that architectonics illuminates. Because the building of agentic robots governed by digital platforms is likely to increase in the future, this dynamic could have a profound impact on social relations in the West and beyond (Green, 2016; Gunkel, 2023; Wiener, 1988). In fact, the demand to automate tasks and jobs is encouraged for reasons that often relate to economics, efficiency, and global competition. If technology makes it increasingly difficult to distinguish between human and nonhuman agents, then this will likely lead to increasing changes in the workforce that destabilize society in ways that Karatani's (1995) will to architecture or any other logic cannot frame or reverse. Sparrow (2019) wrote, "By and large humanoid robots will be designed to be valuable to people by serving them in various ways. Robots will respond to human requests and will do what people tell them to do." He added, "That is to say, robots will essentially be slaves … and will, therefore, represent people as slaves" (p.11).

In the future, the crises and challenges associated with this insight have the potential to encourage the proliferation of architectural metaphors to contextualize modern robots in the same way they have been used to frame digital platforms and digital platform governance. Architectural robotics represent the anthropomorphic extension or node of digital platforms designed to support humans in the different activities we experience in everyday life. Green (2016) described how architectural robotics can orient our understanding in this direction. He claimed that architectural robotics represent a different kind of manifestation that operates between human–computer and human–robot interactions. As a result, emergent technologies

This work is licensed under a Creative Commons Attribution 4.0 International License

will likely shift interest from digital platforms and smart devices to dynamic environments built for automation, including rooms, furniture, and other accessories that act, cognate, and expand based on their ability to learn and adapt to changing contexts. In the future, we will likely encounter architectural robotics as governance tools used in places such as health-care facilities, classrooms, workspaces, assisted-care homes, and mass public transit systems (Gellers, 2021; Green, 2016; Wiener, 1988). Whether we engage these nonhuman artifacts in a state of crisis, distraction, or amusement, we may find that architectonics is the kind of conceptual framework and metaphor that we need to help us reimagine and investigate social relations in which humans are not the main agents or purveyors of teaching, learning, and governance.

References

Abnet, D. A. (2020). *The American robot: A cultural history*. The University of Chicago Press.

Acemoglu, D., & Johnson, S. (2023). *Power and progress: Our thousand-year struggle over technology and prosperity*. PublicAffairs.

Aristotle (2000). *Politics* (B. Jowett, Trans). Dover. (Original work published ca. 350 B.C.E)

Atkins, R. K. (2014). The forgotten science: Architectonics and its importance. *History of Philosophy Quarterly, 31*(4), 369-392.

Ball, S. J. (2009). Lifelong learning, subjectivity and the totally pedgogised society. In M. A. Peters, T. Besley, M. Olssen, S. Maurer, & S. Weber (Eds.), *Governmentality studies in education* (pp. 201-216). Sense Publishers.

Ball, S. J., & Collet-Sabé, J. (2025). *Against school: Thinking education differently*. Palgrave Macmillan.

Benjamin, R. (2019). *Race after technology: Abolitionist tools for the New Jim Code*. Polity Press.

Bernstein, B. (1990). *Class, codes, control, Volume IV: The structuring of pedagogic discourse*. Routledge.

Bernstein, B. (2000). *Pedagogy, symbolic control, and identity: Theory, research, critique* (Rev. ed.). Rowman & Littlefield.

Bernstein, B. (2001a). From pedagogies to knowledges. In A. Morais, I. Neves, B. Davies, & H. Daniels (Eds.), *Towards a sociology of pedagogy: The contribution of Basil Bernstein to research* (pp. 363-368). Peter Lang.

Bernstein, B. (2001b). Symbolic control: Issues of empirical description of agencies and agents. *InternationalJournal of Social Research Methodology*, *4*(1), 21-33.

Best, S. (2007). Basil Bernstein: Agency, structure and linguistic conception of class. *Education, Knowledge & Economy*, *1*(1), 107-124.

Bühlmann, V. (2018). Architectonic disposition: Ichnography, scaenography, orthography. In R. Braidotti & M. Hlavajova (Eds.), *Posthuman glossary* (pp. 55-59). Bloomsbury.

Carbonell, J., Sánchez-Esguevillas, A., & Carro, B. (2016). The role of metaphors in the development of technologies. The case of the artificial intelligence. *Futures, 84*, 145-153.

Chandler, D. (2015). A world without causation: Big data and the coming of age of posthumanism. *Millennium*, *43*(3), 833-851.

Chisnall, M. (2020). Digital slavery, time for abolition? *Policy Studies*, *41*(5), 488-506.

Crooks, R. (2022). Seeking liberation: Surveillance, datafication, and race. *Surveillance & Society*, *20*(4), 413-419.

Dahl, R. A. (2006). *A preface to democratic theory* (Expanded ed.). The University of Chicago Press.

This work is licensed under a Creative Commons Attribution 4.0 International License

Dammann, F., Eichenmüller, C., & Glasze, G. (2022). Geographies of "digital governmentality": Platform-based governing through adaptive environments. *Digital Geography and Society, 3*. https://doi.org/10.1016/j.diggeo.2022.100034

Dean, M. (2002). Liberal government and authoritarianism. *Economy and Society, 31*(1), 37-61.

Decuypere, M., Grimaldi, E., & Landri, P. (2021). Introduction: Critical studies of digital education platforms.
Critical Studies in Education, 62(1), 1-16.

Demichelis, L. (2022). *Marx, alienation and techno-capitalism*. Springer.

DeNardis, L., & Hackl, A. M. (2015). Internet governance by social media platforms. *Telecommunications Policy, 39*(9), 761-770.

Devecka, M. (2013). Did the Greeks believe in their robots? *The Cambridge Classical Journal, 59*, 52-69.

Drewniak, T. (2009). Philosophy of architecture and architectonics of philosophy. *Filosofía UIS, 8*(2), 11-31.

DuBois, P. (2003). *Slaves and other objects*. The University of Chicago Press.

Duddy, M. C. (2018). The ends of reason: Towards an understanding of the architectonic. *Journal of Aesthetics and Phenomenology, 5*(1), 1-13.

Finkel, D. L., & Arney, W. R. (1995). *Educating for freedom: The paradox of pedagogy*. Rutgers University Press.

Forsdyke, S. (2021). *Slaves and slavery in Ancient Greece.* Cambridge University Press.

Foucault, M. (2000). *Michel Foucault: Power* (J. Faubion, Eds., R. Hurley & Others, Trans.). The New Press.

Fuchs, C. (2017). Capitalism, patriarchy, slavery, and racism in the age of digital capitalism and digital labour. *Critical Sociology, 44*(4-5), 677-702.

Gellers, J. C. (2021). *Rights for robots: Artificial intelligence, anima and environmental law*. Routledge.

Givens, J. R. (2021). *Fugitive pedagogy: Carter G. Woodson and the art of Black teaching*. Harvard University Press.

Gorwa, R. (2024). *The politics of platform regulation: How governments shape online content moderation*. Oxford University Press.

Gray, K., Yam, K., Zhen'An, A. E., Dillion, D., & Waytz, A. (2025). The psychology of robots and artificial intelligence. In D. T. Gilbert, S. T. Fiske, E. J. Finkel, & W. B. Mendes (Eds.), *The handbook of social psychology* (6th ed.). Situational Press. https://doi.org/10.70400/IKVM1257

Green, K. E. (2016). *Architectural robotics: Ecosystems of bits, bytes, and biology*. MIT Press.

Gunkel, D. J. (2023). *Person, thing, robot: A moral and legal ontology for the 21st century and beyond*. MIT Press.

Hampton, G. J. (2015). *Imagining slaves and robots in literature, film, and popular culture: Reinventing yesterday's slave with tomorrow's robot.* Lexington Books.

Hawkins, D. (1994). Constructivism: Some history. In P. Fensham, R. Gunstone, & R. White (Eds.), *The content of science: A constructivist approach to its teaching and learning* (pp. 9-13). Routledge.

Hegel, G. W. F. (2018). *The phenomenology of spirit* (M. Inwood, Trans.). Oxford University Press. (Original
work published 1807)

Holquist, M. (1990). *Dialogism: Bakhtin and his world*. Routledge.

Holquist, M. (2015). On the dialogics of the architectonic answerability: Is architecture a text? *Arquitectonics: Mind , Land & Society*, 27, 9-20.

Hovestadt, L. (2009). *Beyond the grid - architecture and information technology: Applications of a digital architectonic*. Birkhäuser.

This work is licensed under a Creative Commons Attribution 4.0 International License

Hughes, J. (2017). Algorithms and posthuman governance. *Journal of Posthuman Studies, 1*(2), 166-184.
Inmon, W. H., & Linstedt, D. (2014). *Data architecture: A primer for the data scientist: Big data, data warehouse and data vault*. Morgan Kaufmann
Johnson, M. R. (2015). Aristotle's architectonic science. In D. Ebrey (Ed.), *Theory and practice in Aristotle's natural science* (pp. 163-186). Cambridge University Press.
Karatani, K. (1995). *Architecture as metaphor: Language, number, money* (S. Kohso, Trans.). MIT Press.
Karatani, K. (2005). *Transcritique: On Kant and Marx* (S. Kohso, Trans.). MIT Press.
Katznelson, I. (1995). On architectural syncretism. In J. Cohen & J. Rogers (Eds.), *Associations and democracy: The real utopias project* (Vol. 1., pp. 195-200). Verso.
Kerssens, N., & van Dijck, J. (2022). Governed by edtech? Valuing pedagogical autonomy in a platform society. *Harvard Educational Review, 92*(2), 284-303.
Khaghani, S. (2019). Foucault and the idea of 'architectonic discourse' or how to read others' history. *Cogent Arts and Humanities, 6*(1). https://doi.org/10.1080/23311983.2019.1601541
Kwok, H. (2021). In between distributive and evaluative rules: Paradox of pedagogic (mis)governance. *British Journal of Sociology of Education, 42*(3), 388-403.
Lahiji, N. (2024). *Kōjin Karatani's philosophy of architecture*. Routledge.
Landrum, L. (2015). Before architecture: Archai, architects and architectonics in Plato and Aristotle. *Montreal Architectural Review, 2, 5-25.*
Lemke, T. (2009). An indigestible meal? Foucault, governmentality and state theory. In M. A. Peters, T. Besley, M. Olssen, S. Maurer, & S. Weber (Ed.), *Governmentality studies in education* (pp. 35-54). Sense Publishers.
Lepore, J. (2026). *The rise and fall of the artificial state*. Liveright Publishing.
Levine, Y. (2018). *Surveillance valley: The secret military history of the internet*. PublicAffairs.
Malott, C. (2021). *A history of education for the many: From colonization and slavery to the decline of US imperialism*. Bloomsbury Academic.
Manchester, P. (2003). Kant's conception of architectonic in its historical context. *Journal of the History of Philosophy, 41*(2), 187-207
Martins, M., & Mainardes, J. (2026). Basil Bernstein and the sociology of education. *Educação em Revista*, 42. https://doi.org/10.1590/0102-469860118
McNally, D. (2025). *Slavery and capitalism: A new Marxist history*. University of California Press.
Mejias, U., & Couldry, N. (2024). *Data grab: The new colonialism of big tech and how to fight back*. The University of Chicago Press.
Moore, R., Arnot, M., Beck, J., & Daniels, H. (2006). *Knowledge, power and educational reform: Applying the sociology of Basil Bernstein*. Routledge.
Nichols, T. P., & Dixon-Román, E. (2024). Platform governance and education policy: Power and politics in emerging edtech ecologies. *Educational Evaluation and Policy Analysis, 46*(2), 309-328.
Parenti, C. (2003). *The soft cage: Surveillance in America, from slavery to the war on terror.* Basic Books.
Patterson, O. (2018). *Slavery and social death: A comparative study*. Harvard University Press.
Peirce, C. S. (1931). *Collected papers of Charles Sanders Peirce* (C. Hartshorne & P. Weiss, Eds., Vols. 1-3). Belknap Press.
Peirce, C. S. (1955). *Philosophical writings of Peirce* (J. Buchler, Ed.). Dover.
Pula, D., & Perna, V. (2023). Architecture as metaphor: Politics and aesthetics in the modernist city. *ArchiDOCT, 11*(2). https://iris.uniroma1.it/handle/11573/1700293
Pykett, J. (Ed.). (2012). *Governing through pedagogy: Re-educating citizens*. Routledge.

This work is licensed under a Creative Commons Attribution 4.0 International License

Ramić, D. R. (2024). The role of the Greek term *techné* in the area of today's government of information technology and technological progress. *European Journal of Computer Science and Information Technology, 12*(8), 41-47.

Rolls, M. (2022). *Educating slaves: A comparative approach to education in Roman slavery* [Doctoral thesis, The University of Edinburgh]. Edinburgh Research Archive. https://era.ed.ac.uk/items/200578ea-afcf-4738-b1f6-b0788a54b7ca

Salvatori, M. R. (Ed.). (1996). *Pedagogy: Disturbing history, 1819-1929*. University of Pittsburgh Press.

Schatzberg, E. (2018). *Technology: Critical history of a concept*. The University of Chicago Press.

Schick, K., & Timperley, C. (Eds.). (2022). *Subversive pedagogies: Radical possibility in the academy*. Routledge.

Sefton-Green, J. (2022). Towards platform pedagogies: Why thinking about digital platforms as pedagogic devices might be useful. *Discourse: Studies in the Cultural Politics of Education, 43*(6), 899-911.

Simmel, G. (2009). *Sociology: Inquirers into the construction of social forms: Vol. 1*. (A. Blasi, A. Jacobs, M. Kanjirathinkal, Eds., & Trans.). Brill. (Original work published 1908)

Singh, P. (2017). Pedagogic governance: Theorising with/after Bernstein. *British Journal of Sociology of Education, 38*(2), 144-163.

Sparrow, R. (2019). Robotics has a race problem. *Science, Technology, & Human Values, 45*(3), 538-560.

Srnicek, N. (2017). *Platform capitalism*. Polity Press.

Turner, K. (2014). Towards field-work in the architectonics of control. In K. M. Jørgensen & C. Largacha-Martinez (Eds.), *Critical narrative inquiry: Storytelling, sustainability and power* (pp. 35-52). Nova Science Publishers Incorporated.

Tyler, W. (2004). Silent, invisible, total: Pedagogic discourse and the age of information. In J. Muller, B. Davies, & A. Morais (Eds.), *Reading Bernstein, Researching Bernstein* (pp. 15-29). Routledge.

Usher, R., & Edwards, R. (1994). *Postmodernism and education: Different voices, different worlds.* Routledge.

Ward, R. (2001). Peirce and politics. *Philosophy & Social Criticism, 27*(3), 67-90.

Wiener, N. (1988). *The human use of human beings: Cybernetics and society*. DaCapo Books.

Williamson, B. (2016). Digital education governance: Data visualization, predictive analytics, and 'real-time' policy instruments. *Journal of Education Policy, 31*(2), 123-141

Williamson, B., Gulson, K. N., Perrotta, C., & Witzenberger, K. (2022). Amazon and the new global connective architectures of education governance. *Harvard Educational Review, 92*(2), 231-256.

Wolin, S. (2008). *Democracy incorporated.: Managed democracy and the specter of inverted totalitarianism*. Princeton University Press.

Wrenhaven, K. L. (2015). Slaves. In W. M. Bloomer (Ed.), *A companion to ancient education* (pp. 464-473). Wiley Blackwell.

Paper Received September 25, 2026; Accepted October 30, 2026; Published November 2, 2026

This work is licensed under a Creative Commons Attribution 4.0 International License