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Postmodern Paradox: Artificial Intelligence, Pedagogy and the Return of Robot Slavery

Jeremy Dennis
St. Louis Community College
jdennis@stlcc.edu

ABSTRACT

Despite the contributions that postmodernism has made to teaching and learning in the computer age, several scholars and practitioners in education persist in proclaiming its demise or death. This philosophical survey challenges this argument by recalibrating Jacques Derrida's and Jean-François Lyotard's contributions to postmodern thought as complementary meditations on the *simultaneity of differences*. With this reset in mind, one discovers that the evidence critics use to substantiate the end of postmodernism in education is often tenuous and paradoxical. In fact, the simultaneity and indeterminacy at the core of postmodern thinking make it indispensable in contemporary debates on the dichotomy between human and non-human entities, especially as artificial intelligence and robots become increasingly efficient partners and rivals in our classrooms and workplaces. While robot slavery has been introduced as a resolution to the binary opposition between humans and non-humans, postmodernism reminds us that this remedy is contentious and not new. Before robots such as Figure 02 and Mobile ALOHA, there was Rastus Robot, a technological innovation that courts the idea of a black mechanical slave. This study reveals how

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postmodernism and technological advancements continue to inform our conversations about education and trouble the border between humans and the robot slaves of tomorrow.

Introduction

Scholars in education and other fields continue to proclaim that *postmodernism—or* the incredulity of modernist narratives and practices—is dead (Epstein et al., 2016; Kirby, 2009; McHale, 2015; Peters et al., 2019; Rudrum & Stavris, 2015). The following philosophical survey aims to challenge this position by highlighting the tenuous and paradoxical nature of the evidence on which many of these claims are based and reveal postmodernism's substantial role in the debate on robot slavery. First, I contextualize the competing views on the end of postmodernism as determined by scholars in educational philosophy such as Peters et al. (2019). Then I reveal how the postmodern ethos continues to proliferate across many disciplines, particularly in education and technology studies. I also advance Derrida's (1978, 1997) and Lyotard's (1984, 1991) contributions to postmodern thought by recalibrating them as complementary meditations on what I call the *simultaneity of differences.* In clearer terms, I introduce this concept to describe the accentuation of paradoxical relations in the computer age, where postmodernism functions as a recurring feature and critique within modernism and not an epochal break from it (Burbules, 2009; Klempe, 2018). The simultaneity of differences is the simulacrum at the center of postmodern thinking. As such, I reveal how it underwrites the imperatives inherent in the discursive processes that support human sentience while also constraining the advancement of artificial intelligence (AI) in the form of machine learning. Using Gunkel's (2023) study on robot rights, this review will demonstrate that postmodernism is still viable and the simultaneity of differences is a conceptual tool that can enrich our understanding of its character and the interrelations between humans and the robot slaves of tomorrow. However, our preoccupation with the demise and death of postmodernism may prevent us from recognizing its value in helping scholars and educators investigate human–robot

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relations and the increasingly contentious role artificial intelligence plays in pedagogy, cognitive labour, and the digital economy (Narayanan & Kapoor, 2024; Peters, 2023; Sidorkin, 2024; Williamson et al., 2024).

Contextualizing the Problem

According to some scholars, the term *postmodernism* emerges in the field of architecture (Vanhoutte, 2018). Its influence has been invigorated and advanced by the ideas of French philosophers such as Jacques Derrida and Jean-François Lyotard, whose contributions are discussed below (Burbules, 2009; Dennis, 2019; McHale, 2015). While there is little consensus as to what defines the character and constitution of postmodernism in the field of education or other disciplines, the term is often used to describe a reaction to the Enlightenment values, discourse, and rationalism that characterize and underwrite *modernism*. In clearer terms, one could think about modernism as a form of *either/or* thinking and postmodernism as a form of *and/with* thinking (D. Ford, 2021; Lyotard, 1984; Usher & Edwards, 1994). As an influential authority on postmodern thought, Eagleton (1996a) claimed, "Postmodernism is radical in so far as it challenges a system which still needs absolute values, metaphysical foundations and self-identical subjects; against these it mobilizes multiplicity, non-identity, transgression, anti-foundationalism, cultural relativism" (p. 132). However, according to Peters et al. (2019), we start to see the beginning of the end of postmodernism in the late 1980s, extending into the 1990s (also see McHale, 2015). The authors reviewed a variety of writings that emerged during this period that announced the end of postmodernism, particularly in education. For Peters et al., declarations of the death of postmodernism are commonplace and largely considered a fact in some academic circles. They reported, "If the 1990s were a decade when scholars in a range of disciplines asked the question of what comes after postmodernism, the 2000s were a decade that investigated a range of substitutes and possibilities" (2019, p. 1300). These substitutes and possibilities include neologisms such as *posthumanism*, *post-digitalism*, *hypermodernism*, *new materialism*, *metamodernism*, *trans-postmodernism*,

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and *post-postmodernism* (Boje, 2006; Garnar, 2020; Peters et al., 2019). Based on the results of the philosophical survey that Peters et al. (2019) conducted, there appears to be limited consensus on the death of postmodernism, its constitution, and influence across the disciplines. Rudrum and Stavris (2015) reached similar conclusions in their study. It appears that evidencing the death of postmodernism is much harder than proclaiming it. Rudrum and Stavris reported, "Problematically, there does not seem to be a neat term with which to encapsulate the idea that postmodernism is finished" (2015, p. xv).

In his contributions to the discourse on the death of postmodernism, Kirby (2009) introduced the term *digimodernism*. He argued that digimodernism succeeds postmodernism, eclipsing it in the 1990s as advanced technology and digitalization reorient our valuations and understandings of texts and media. According to him, digimodernism appears socially and politically as "the logical effect of postmodernism, suggesting a modulated continuity more than a rupture" (p. 2). Kirby (2009) likened postmodernism to a cultural and historical period. However, he indicated that he is uncertain about the criteria that mark its ending. "We don't really know what the criteria for such a claim are," he announced (p. 5). Whatever relevance those in other fields still find in postmodernism, he argued that "postmodernism's insistence on locating an absolute break in all human experience between the disappeared past and the stranded present has lost all plausibility" (Kirby, 2009, p. 2). However, Kirby's assessment is at odds with the ubiquity and proliferation of postmodernism that Washbourne (2023) highlighted in his study. He claimed that postmodernism and its precepts continue to circulate widely and may prove difficult to resist. In fact, Washbourne suggested that teachers and learners are positioned to make postmodernism even more intentional. For him, the perpetual calls to end or move beyond postmodernism could be the result of *postmodern fatigue*. For others, this insistence appears to be motivated by the technological advancements and digitalization characteristic of

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the computer age (Boje, 2006; Garnar, 2020; Gunkel, 2023; Kirby, 2009; Rudrum & Stavris, 2015).

Moreover, Tocci (2018) has also argued that postmodernism is not *dead*. In fact, he claimed that it has been captured and appropriated to serve the needs of politicians, entertainers, and those who cavort between them (see Rockhill, 2023). Cheek and Aston (2024) and Lister et al. (2024) have also noted that the postmodern perspective continues to provide a dominant cultural context and lens for developing and operationalizing social policy as well as different approaches to teaching, learning, and research in education. Furthermore, Garnar (2020) argued that our use of advanced information technologies exhibit and exemplify the principles and practices that we generally associate with postmodernism and its logic. For him, postmodernism opens possibilities for a new conceptualization of technology to address social and technical issues and problems. More significantly, Garnar (2020) reported that technology is a theme that can help us understand the character and vitality of postmodernism as well as our present moment. He supported the continued use of the term *postmodernism*, since its logic is often embedded in the very concepts developed to overthrow it.

Kolovskaia and Ilin (2023) also supported the use of postmodernism and its logic in systems engineering. They found that the construction and life cycle of technical systems are inspired by postmodern presumptions and their valuation of language and meaning as anti-foundational and heterogeneous. For Kolovskaia and Ilin, human language is an imperfect instrument, but it allows us to communicate diverse understandings of the world and multiple realities, particularly in pedagogical contexts. Ironically, the signification and contingency inherent in language and the interpretation of texts are the features that appear to complicate the development of artificial intelligence. Narayanan and Kapoor (2024) claimed, "Artificial intelligence, AI for short, is an umbrella term for a set of loosely related technologies" (p. 1). For many educators, the term is contentious and associated

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with several subfields (Popenici & Kerr, 2017; Sidorkin, 2024; Williamson et al., 2024). For example, machine learning is considered a subfield of artificial intelligence that employs algorithms to process and analyze data. It uses this data to learn and improve its ability to complete tasks. As an expression of artificial intelligence, machine learning applies data to create new content, recognize patterns, and apply them to novel situations (Narayanan & Kapoor, 2024). In fact, foundational models of artificial intelligence such as ChatGPT and DeepSeek train on language and texts derived from several sources, including data sets. While artificial intelligence has been advancing rapidly, it is considered a product that many scholars describe as immature and often unreliable (Kaplan, 2024; Narayanan & Kapoor, 2024). Experts in artificial intelligence such as David Ferrucci pointed out that, unlike humans, machine intelligence tends to struggle when it comes to refining its understanding of the various interpretations and meanings that language and texts manifest in different contexts (M. Ford, 2018). Currently, some artificial intelligence systems are successful in matching texts and locating statistical patterns but less so when it comes to processing the nuanced layers of meaning that condition how language and texts are understood in different contexts. Ferrucci and other specialists have suggested that solving this problem in machine learning is one of the holy grails for advancing what some call *AI pedagogy*. Inevitably, this effort will draw more attention to the scholarly orientations and approaches that value a postmodern understanding of language, texts, and discourse and locate this understanding at the center of teaching and learning with technology in education (Dennis, 2022; M. Ford, 2018; Kolovskaia & Ilin, 2023; Wiener, 1988).

Postmodernism and Education

In postmodern thought, the term *pedagogy* represents more than the art and science of teaching and learning. It recognizes the term's historical, social, and discursive values and dimensions in education (Dennis, 2022; Usher & Edwards, 1994). For example, in ancient Greece, pedagogues were typically slaves who

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guided and supervised the learning and activities of those wealthy enough to provide their children with education. Cowley and Williams (1991) reported, "Increasingly the Romans brought Greeks, either as slaves or as freedmen, into their homes and communities, in most instances to school their children but in some cases also to provide an intellectual atmosphere in which to entertain their guests" (p. 23). Scholars who study the history of education have also noted instances where the responsibility for teaching poor children, especially in the Southern part of the United States, was "thrust upon white indentured servants and sometimes Negro slaves" (Atkinson & Maleska, 1964, p. 105). These contextualizations are often absent in our scholarly discussions on pedagogy in the field of education (Dennis, 2024; Kato, 2018; Warren, 2005; Wilder, 2013). Salvatori (1996) speculated that the reason might be related to the fact that the idea of a *slave* as a pedagogue was antithetical to the practice of slavery in countries like the United States, where the enslaved were usually denied access to education. Consequently, our starting point for discussing pedagogy often focuses on Sophists and other rhetoricians credited as the first professional teachers (Jarratt, 1991). These teachers are thought to have practised one of our earliest forms of postmodern thinking due to their embrace of skepticism as a worldview and rhetoric as an indispensable pedagogical tool. For Jarratt (1991), these features foreshadow many of the values and prerogatives associated with the character of postmodernism. In some ways, postmodern pedagogy signals the vital role that language and discourse play in the construction and conveyance of meaning and its representation (Aronowitz & Giroux, 1991). Even today, several scholars continue to recognize their importance in our pedagogical practices (Bernstein, 2000; Dennis, 2022; Usher & Edwards, 1994).

In this context, postmodernists value pedagogy as a dialogic practice that is always conditioned by the interaction of different meanings and experiences generated by texts, humans, and non-humans such as computers (Bolter, 2001; Kirby, 2009). As such, pedagogy is sustained by recombinative processes and practices whereby

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somebody or something acquires new forms of knowledge, thinking, and conduct from someone or something considered to be an appropriate provider or assessor (Bernstein, 2000). Learning occurs when the cognitive structures in our minds help us negotiate the signification inherent in language and the different ways of meaning-making that it enables (Bernstein, 2000; Dennis, 2022). In fact, Aronowitz and Giroux (1991) claimed that postmodernism provides us with a discourse that develops forms of pedagogy that recognize and value differences and pluralism as key features in the learning process and the production of knowledge. They also argued that postmodernism calls attention to the growing influence of digital media and information technology in postindustrial societies, inspiring many of us to transgress the ideological borders and boundaries between life and art, people and things, and images and reality. As postmodernism continues to influence education, Aronowitz and Giroux (1991) warned against the valorization of the ideologies that overplay the limitless possibilities for teaching and learning afforded by computer technology and the kinds of postmodern thinking it substantiates (Alpaydin & Demirli, 2022; Bolter, 2001; Orr, 2003).

However, Popenici and Kerr (2017) indicated that this admonition may be difficult for some educators to adhere to due to the conveniences and possibilities that digital technology allows for improving teaching and learning. They recognized the limits of technology and artificial intelligence in education and the concerns that it potentially disrupts and undermines the very cognitive and emotional growth that education espouses and develops in our students (Sidorkin, 2024). Popenici and Kerr acknowledged that artificial intelligence might not replace teachers entirely. However, it introduces the real possibility of augmenting education with *teacherbots*, a term used to describe machine-based software or hardware algorithmically designed to complement or supplant the roles and duties typically reserved for human teachers (Bayne, 2015). In many cases, pedagogy can be enriched by this addition. To be successful in this context, educators may have to focus less on content and more on helping students learn to use machine

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technology. "To the extent that learning is translatable into computer language and the traditional teacher is replaceable by memory banks," Lyotard (1984) reported, "didactics can be entrusted to machines linking traditional memory banks (libraries, etc.) and computer data banks to intelligent terminals placed at the students' disposal" (p. 50). The introduction of robots in education to facilitate teaching and learning is the kind of postmodern projection Lyotard anticipated long before studies of artificial intelligence became a preoccupation in education (Bayne, 2015; Sidorkin, 2024; Usher & Edwards, 1994; Williamson et al., 2024).

In their primer, Kissinger et al. (2021) predicated that, in the future, children may grow up with AI partners or assistants programmed to serve multiple capacities, including roles as tutors, advisors, guides, and companions. In ways that are reminiscent of the human pedagogues in the ancient world and antebellum South, these assistants may be positioned to teach children by calibrating and tailoring their approaches based on the learning styles, needs, and goals of the individual. In the future, students are likely to have access and opportunities for personalized learning in ways that were once thought unimaginable. In fact, Kissinger et al. (2021) suggested students will become habituated to AI technology at an early age by acquiring digital assistants or robot servants (such as Figure 02) in their childhood. Advancements in AI technology will make our lives more automated and our interactions with machines that mimic human intelligence and behaviour will be commonplace and inseparable from the daily patterns and practices in our professional and private lives. Kissinger et al. (2021) argued, "AI-powered technology will become a permanent companion in perceiving and processing information, albeit one that occupies a different 'mental' plane from humans" (p. 18).

Consequently, many children could grow up forming their impressions of themselves and the world through their interactions with digital assistants or robot servants empowered by artificial intelligence applications such as Khanmigo

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(Kissinger et al., 2021; Sidorkin, 2024). More significantly, these interrelations will be sources of teaching and learning for students as well as robots. This phenomenon will transform the ways in which we imagine human development in childhood specifically and adulthood more generally (D. Ford, 2021; Lyotard, 1991). Scholars have reported that humans have already been integrated into technological systems that condition and manipulate their worldviews and behaviours (Hui, 2016; Weaver, 2013). As artificial intelligence evolves, adapts, and expands based on nourishment from human experiences, data, and algorithms, it grows increasingly useful and threatening to humans at the same time. Whether we view AI-powered technology as a tool, servant, or rival, it will transfigure our relationships with learning and our sense of self and identity in a network or matrix of complex digital relations (Aoun, 2018; Dennis, 2019; Kissinger et al., 2021). For some scholars, these interconnections and interdependencies are postmodern in the sense that we can no longer imagine our lives outside of a dynamic matrix of social, economic, political, and academic relations shaped by artificial intelligence, algorithms, and the proliferation of computerized devices (Alpaydin & Demirli, 2022; Garnar, 2020; Hui, 2016; Lyotard, 1984).

The ubiquitous nature of postmodernism as a concept and its conflation with education, language, and technology might explain why critics of postmodernism cannot determine or agree on the period of its demise or what supposedly supplanted its influence on our imaginations and practices, particularly in education and technology studies (Rudrum & Stavris, 2015). However, Peters et al. (2019) and others have advanced claims that postmodernism has been "succeeded by a new sensibility and configuration." They also admitted, "We are not sure what it is exactly but we know that one era has ended and another has begun" (p. 1299). As evidenced above, this assessment is also paradoxical. We cannot know for certain that postmodernism has ended when it remains unclear what *sensibility* and *configuration* supposedly replaced it. This conundrum raises the following questions. If evidence suggests that postmodernism is still alive but contested, then

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how would a recalibration further illuminate and verify its significance for understanding our contemporary moment? What can this reset teach us about education, artificial intelligence, and the relationship between humans and increasingly human-like robots?

Recalibrating Postmodernism

In the paragraphs below, these questions are examined to show that the contradictions and tensions in our competing considerations of postmodernism are inseparable from the contestations over robot slavery and the discursive processes essential to human communication and the advancement of artificial intelligence. We discover that Lyotard's (1984, 1991) and Derrida's (1978, 1997) contributions to postmodern thought and practices help us frame and appreciate the constituting role of dialogic relations and the enduring relevance of postmodernism in our contemporary discussions on the economic and cultural impact of advanced technology on teaching and learning. This position challenges the views of scholars who proclaim the demise or death of postmodernism. With some exceptions, it appears that their criticisms are often inspired by mischaracterizations of the term (Burbules, 2009; Klempe, 2018). For instance, scholars in education often overlook the fact that postmodernism is not a new epoch but a continuation of modernism. In his appreciation of postmodernism as a skeptical attitude, Lyotard (1984) noted that it represents a recurring moment or paradoxical *condition* within modernism. As Burbules (2009) noted, it was the social and cultural changes within modernism that made it challenging to support certain beliefs and values. Postmodernism marks the *incredulity* or inability to invest in modernist faiths and sensibilities. Burbules (2009) argued that this is not a rejection or conclusive break from modernism for Lyotard. Lyotard simply made doubt a fundamental category in his understanding of reason and rationality. Though this relationship is paradoxical and even contradictory, Lyotard valued it as a precondition for thinking in the computer age (Klempe, 2018). This might explain why scholars sometimes undervalue the fact that Lyotard (1984) asked us to appreciate the paralogical and

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ambiguous internal relations within modernism and its inability to deliver the certainty, objectivity, and progress that it often promises. In fact, postmodernists tend to use the tools of modernity, even though the prefix "post" implies periodization (Derrida, 1997; Eagleton, 1996a).

The second reason for our conceptual confusion about postmodernism is that we tend to treat the prefix "post" literally and not as a form of rhetoric used to subvert the assumptions and presuppositions in modernism (Usher & Edwards, 1994). Of course, it is possible to distinguish between modernism and postmodernism. However, this distinction is based on changes in what Usher and Edwards (1994) called *metaphysical forms*, *narratives of legitimacy*, and the *organization of knowledge*. These elements add context to Lyotard's (1984) description of postmodernism as incredulity toward the grand narratives of modernism and its reliance on the rationality and progress of science to inform our understanding of the production of knowledge and education. Lyotard used the term modernism to designate any science that legitimates and advances itself by appealing to some grand narrative. For him, the problem is rooted in the fact that the narratives that form knowledge and facilitate teaching and learning are heterogeneous, contingent, and at odds with the grand narratives that modernism and scientism prize (Klempe, 2018). One of the sources and inspirations for Lyotard's (1984) understanding and approach is Ludwig Wittgenstein's idea of language games, which emphasizes the importance of understanding the interrelation and inexhaustible meanings in language in terms of how it is contextualized and used.

Finally, critics of postmodernism often underplay the fact that the same interplay in language relations that inform Lyotardian postmodernism also mirror those in computer technology and the digital texts that permit its sustainability and advancements (Dennis, 2022; Garnar, 2020; Kirby, 2009; Orr, 2003). In fact, Lyotard (1984) indicated that advancements in computerization inspire these relations. Bolter (2001) added support to this claim when he argued that computers

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are a writing technology for a postindustrial world. They are devices designed for presenting and representing a wide variety of texts or signs. He claimed, "The computer was constructed as a machine for creating and manipulating signs, which could themselves be mathematical, verbal, or pictorial" (p. 176). Bolter might also agree with Lyotard's (1984) view that advancements in technology actually transform the effects of language, knowledge, and texts as well as their impact on our worldviews and social institutions.

In this context, Lyotardian postmodernism might also function like a cultural paradigm as well as a regime of signification that conditions knowledge and underwrites education in the computer age (Garnar, 2020; Lash, 1990). Generally, the term *culture* is used to describe the values, attitudes, and practices that distinguish a conceptual appreciation or community. The idea of postmodernism as an expression of culture suggests that humans are installed inside of it and its system of interests, beliefs, and correlating sensibilities (Burbules, 2009; Eagleton, 1996b). As such, we are always implicated and complicit in the culture we seek to legitimate or critique (D. Ford, 2021; Garnar, 2020). The confusion surrounding Lyotardian postmodernism is aggravated by the fact that it asks us to recognize different and often competing stances simultaneously. So, when many critics contest postmodernism, they undermine the very claims and protestations levied against it. In postmodern thinking, "to pull out the foundations from under your opponent is, unavoidably, to pull them out from under oneself" (Eagleton, 1996b, p. 203).

With this assessment in mind, we can begin to appreciate the material conditions and pedagogical consequences that postmodernism, as a cultural paradigm, has on our understanding and use of language and texts in the context of teaching and learning. Texts are cultural artifacts and systems of signs that express limitless interpretation, representation, and signification. According to Lash (1990), in any regime of signification, our cultural artifacts will depend on the simultaneity

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among *signifier*, *signified*, and *referent*. He argued, "Here the signifier is a sound, image, word or statement; the signified is a concept or meaning; and the referent is an object in the real world to which signifier and signified connect" (p. 5). The interplay of meaning and differences in texts is driven by these symbiotic relations and so is education. Usher and Edwards (1994) argued that, like all cultural activities, education is informed and conditioned by signification. They also noted, "Education is always open to the play of difference in meaning yet always subject to attempts to en-close and fore-close this play" (pp. 139–140). In this context, Usher and Edwards (1994) claimed that education can be understood as a form of text, especially in the computer age.

Postmodernists privilege texts because they formulate and condition knowledge, enabling the heterogeneity and simultaneity that manifest the illusive nature of meaning—which ultimately helps to challenge and dismantle modernist approaches that categorize, dichotomize, and differentiate complex phenomena instead of celebrating the simultaneity of similarities and differences associated with the varying shades of complexity found in all realities (Dennis, 2022; Derrida, 1997). For this reason and others, students of postmodernism embrace the indeterminacy and contingency inherent in the construction of texts. Texts are interrelated through the interplay of language and dialogue essential to human communication. In other words, a text is always formed out of the recombination, revision, and reintegration of other texts and meanings (Dennis, 2022; Orr, 2003). Their disposition might explain why postmodernism is sometimes treated as a synonym for *cultural recycling*, *intertextuality*, *hypertextuality*, *interdisciplinarity*, and *deconstruction* (Bolter, 2001; Burbules, 2009; Dennis, 2022; Orr, 2003). According to Elias and Merriam (2005), postmodernism appears in different forms. One of those forms is what they call *deconstructive postmodernism*. The term *deconstruction* is generally associated with the work of Derrida (1997), who employs it to describe the intertextual or supplemental processes that characterize the relational and limitless similarities and differences in all texts. For scholars such as McHale

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(2015), Derrida's conceptualization of the term *deconstruction* in the 1960s represents a significant contribution to postmodern thinking as well as teaching and learning (Alpaydin & Demirli, 2022; Aronowitz & Giroux, 1991; Cheek & Aston, 2024; Usher & Edwards, 1994).

Deconstruction is generally considered a postmodern approach or reading process that manifests what I call the *simultaneity of differences* or co-occurrence of paradoxical and often competing phenomena in the interplay of meaning or signification. According to Derrida (2004), "It is language that opens the passage to all parasiting and simulacra" (p. 98). Our understanding of human identity and objects rest on floating signs and representations or what Latour (1993) called *simulacra*. As the simulacrum at the core of language and postmodernism, the simultaneity of differences values *and/with* thinking and paradox as features rather than anomalies in the social construction of knowledge and texts (Dennis, 2020; Derrida, 1997). In deconstructive postmodernism, our contingent realities are legitimated by the dialogic features and processes in the formulation of meaning, representation, and interpretation. In fact, the interplay of these relations is the precondition for understanding the construction, expression, and exchange of knowledge through the various modes and forms of texts. Also, there is "no limit to ways in which texts can be read and therefore no 'end' to the meanings of a text" (Usher & Edwards, 1994, p. 127). Therefore, the simultaneity of differences that deconstructive postmodernism manifests means that, theoretically, there is more potential for wider interpretations and representations of human as well as non-human identities (Floyd, 2023; Latour, 1993; Lyotard, 1991). As such, Gunkel (2023) would agree that postmodernism helps us dismantle the rationalism and positivism often associated with those who are preoccupied with categorization, differentiation, and binarism as dividing practices that distinguish humans and non-humans or *people* and *things*.

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The Simultaneity of Differences

Gunkel (2023) used a deconstructive framework in his examination of robot rights and the human/non-human dichotomy at the center of debates on whether robots, AI applications, and other kinds of artifacts qualify as people, things, or slaves. He reported that "the deconstruction of this way of thinking takes the very conceptual opposition that had distinguished person from thing as the problem" (p. 15). In his study, he valued deconstruction as a kind of "thinking outside the box" that permits us to reimagine the social order and the oppositional pairings that sustain it. For Gunkel (2023), deconstruction is valued as a methodology and strategy that one can use to intervene and transform binaries and the positivist thinking that legitimates their oppositional pairings (p. 11). According to him, the divisions that we make between people and things illustrate this point and it also demonstrates our tendency to categorize and divide the world in order to understand it or maintain the status quo.

For some scholars, this imperative is a consequence of what Derrida (1997) called *logocentrism* and Lyotard (1991) called *humanism* (Klempe, 2018; Latour, 1993). Humanism places mankind at the center of all reality, as if its significance is a certainty in our social order and, therefore, privileged above everything else. For Lyotard, this line of thinking exists only by excluding or marginalizing that which we consider non-human, such as animals and machines. In his later studies on humanism, Lyotard (1991) also explored non-human relations, more or less supplanting emphasis on the term *postmodernism*. Klempe (2018) claimed, "The reason for this replacement is the widespread misunderstanding that appeared in the discussions around postmodernism, namely that it should represent a specified historical epoch that emerged from modernism" (p. 383). In some respects, Derrida (1997) mirrored Lyotard's positions on postmodernism in his formulation of logocentrism in his writings in the 1960s. It is the term that Derrida used to describe the ways in which we privilege presence over absence and speech or writing—binaries that are just as applicable to the divisions maintained between

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humans and non-humans or persons and things in Western thought. These configurations act as a metaphor for the dichotomous thinking that we tend to use to structure and control the incessant meaning-making associated with the signification and interplay of differences in language and texts (Dennis, 2022; Usher & Edwards, 1994).

Based on this evaluation, Gunkel (2023) might agree that a postmodern paradigm is an indispensable framework for contemplating the relationship between humans (people) and non-humans (things). He argued that we often take for granted that there is a natural division between people and things. However, Gunkel claimed, "The boundary separating who is a person from what is a thing has been flexible, dynamic, and alterable" (p. 2). Like Lyotard and Derrida, Gunkel questioned the modernist logic that supports binary thinking, particularly between humans and non-humans. For him, deconstruction, which is closely associated with postmodern thinking, opens the entire domain of thought to new ways of understanding the interrelationship between mankind and objects (Usher & Edwards, 1994). In fact, Gunkel (2023) identified two camps at the forefront of current debates on the relationship between people and things (discussed below). These different worldviews and ways of thinking further reveal why the *and/with* logic of postmodernism is relevant to our contemporary moment and ongoing discussions on the complex relationship between humans and robots. More importantly, these views also illustrate how the simultaneity of differences in the logic of postmodernism enriches our understanding of its character and the interrelations among humans and what Abnet (2020) has called the *robot slaves* of tomorrow.

Abnet (2020) and Gunkel (2023) agreed that the origin and meaning of the term *robot* has been characterized in a variety of ways. For many scholars, one of the earliest usages of the word appears in a stage play by Karel Čapek, a Czech writer who employed the term to refer to *artificial servants*. It is generally thought that the

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term is derived from the word *robota*, which was often used as a synonym for servitude or labour (Gunkel, 2023). However, Abnet (2020) claimed that, once the term was popularized in places like the United States, it tended to be used to refer to both workers and machines. In many ways, this paradoxical characterization has persisted, even though advancements in technology continue to transform our understanding of robotics. As a result, Abnet (2020) pointed out that robots are considered both *humanized machines* and *mechanized humans* and this simultaneity is fuelled by our fascination and fear of robots and their transformative potentialities. In fact, many memorable characters in literature, film, and television have been robots, including Robby the Robot, Shakey the Robot, and Gort (Abnet, 2020; Gunkel, 2023). They anticipate the emergence of contemporary robots such as Figure 02 and Mobile ALOHA. However, as a largely forgotten figure in popular culture in the United States, the robot known as Rastus seems to encapsulate the simultaneity, fascination, and fear inherent in our anxieties about robots as the replacement workers and slaves of tomorrow. In fact, Rastus manifests Aristotle's idea of the slave as a subcategory of human beings as well as the tool of *their* masters (Devecka, 2013; Garnsey, 1996).

According to Abnet (2020), "After Rastus, Westinghouse [Electric Company] never made another mechanical man that so uncannily crossed the boundaries between human and machine" (p. 133). Between 1927 and 1939, the Westinghouse Electric Company in the United States created a series of robots, including Rastus. However, Rastus is sometimes described as the company's first and only black robot or *mechanical slave* (Carper, 2019). According to Abnet (2020), Rastus was designed to "spread the company's message of robotic slavery to middle- and upper-class white families" (p. 133). In this context, *robot slavery* describes the ways in which machines that approximate human intelligence and behaviours are owned and controlled by humans or other entities such as algorithms (Benjamin, 2019; Carper, 2019; Heuman & Burnard, 2011). Unlike robot slavery, *chattel slavery* describes the legal buying, selling, and ownership of a human being by another human being for

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life. Throughout history, slaves have been a feature in different societies around the world. Race, rationalism, and violence have often been used to categorize and differentiate chattel slaves from free white people in the West (Heuman & Burnard, 2011; Patterson, 2018). While historical associations between robots and slavery are often overlooked in education and technology studies, several scholars have highlighted the fact that conversations in which machines are imagined as the new slaves were a regular part of the discourse in the nineteenth century, particularly among advocates for industrialization and capitalism (Abnet, 2020; Benjamin, 2019; Floyd, 2023; Sparrow, 2020).

Also, Abnet (2020) noted that it was claimed that robot slaves would supposedly allow the United States to live up to its democratic ethos and rhetoric of equality. However, the development of Rastus seems antithetical to this initiative. Dr. Phillips Thomas, the engineer at Westinghouse typically credited with the invention of Rastus, used rubber to construct a racist caricature that embodied the minstrel character after whom Abnet (2020) claimed Rastus was named. Thomas dressed Rastus in overalls, thus embodying and signalling the stereotype of a docile black man who understood and accepted his role as a slave or sharecropper at the bottom of the social order and labour force (Benjamin, 2019; Floyd, 2023; Sparrow, 2020). Rastus was then operationalized as a theatrical prop and pedagogical tool in the campaign launched by Westinghouse to demonstrate and sell products for the company in venues such as department stores, professional conferences, and technical colleges. Furthermore, he helped to popularize the term *robot* in the American public imagination. In other words, Rastus made Čapek's idea of robots less frightening by assuaging fears among the public that machines would one day replace workers (Abnet, 2020; Carper, 2019; Devecka, 2013).

However, Gunkel (2023) indicated that artificial intelligence and other advanced technologies have given the idea of robot slaves a new life and priority among some thinkers, which often includes policymakers, scientists, philosophers, and lawyers.

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He claimed, "There has been an explosion of activity addressing the subject of robot rights in both academic research and popular media" (p. 3). With the emergence of artificial intelligence, our conceptualizations of what is and is not human are tested and radically transformed (Kissinger et al. 2021; Lyotard, 1991; Weaver, 2013). Old fears about machines replacing humans in the workplace and beyond have been resurrected, often widening the gap between the different positions that we take when it comes to the dichotomy between humans and non-humans or people and things. As Gunkel (2023) noted, slaves, women, and children were once considered *things*. However, they have come to be recognized as humans and granted rights and standing as legal and moral entities. Some thinkers have argued that one day, robots, AI systems, and other artifacts could also *cross the line* and be recognized as humans and granted the same rights. This debate is exacerbated by the fact that many of us continue to cling to worldviews and forms of thinking that divide reality using processes of inclusion and exclusion reminiscent of the modernists practices and binary opposites discussed above (Floyd, 2023; Gunkel, 2023; Weaver, 2013).

As a result, Gunkel (2023) noted that people tend to fall into one of two camps on the issue of whether robots, AI systems, and other artifacts are human (people) or non-human (things). He distinguished them using the terms *critics* and *advocates*. Critics argue that robots, AI systems, and other artifacts are things and not people. Unlike the artificial intelligence that enlivens machines, humans are equipped with cognitive structures that help them to negotiate the simultaneity and signification inherent in language and texts. As suggested above, teaching and learning are inseparable from these structures (Sidorkin, 2024). They are the means through which language and texts are used to formulate and interpret meaning and patterns in ways robots and AI systems often cannot. For AI experts such as Ferrucci, it is one thing to guess at what words mean in a particular context. However, it is "another thing to understand something enough to be able to communicate a rich model of your understanding to someone and then discuss, probe, and get in sync

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to advance your understanding as a result" (M. Ford, 2018, p. 410). In other words, human cognition and interactions permit the kinds of simultaneity among perception, intuition, and judgments that help us to process the signification and nuances inherent in the various forms of communication and texts that we encounter in life, education, and other social institutions (Narayanan & Kapoor, 2024). This might help to explain why some critics argue that granting moral and legal status and rights to entities beyond humankind is misguided and even dangerous. Therefore, such efforts should be resisted or disrupted before they commence (Gunkel, 2023; Wiener, 1988). Furthermore, critics claim that humanizing manufactured entities and artifacts distract us from the pressing problems that we already face, which might cause more harm and further exclude people who are members of communities that are already marginalized socially, economically, and politically.

Gunkel (2023) reported that, unlike critics, advocates argue that robots, AI systems, and other artifacts could also be considered people. As these entities become recognized as capable and sentient, we will have to take into consideration what their social identity and legal rights might entail, as we have done with human beings and some animals. As artificial intelligence continues to improve and approximate or potentially exceed human intelligence and capabilities, our understandings and definitions of what is human and non-human will have to fundamentally change to address this phenomenon socially, morally, and legally (Aoun, 2018; M. Ford, 2018; Kissinger et al., 2021; Weaver, 2013). Though controversial, the idea of robot rights is not a far-fetched notion for advocates. Gunkel (2023) noted that they tend to see our contemporary moment beyond the boundaries that many of us employ to divide human and non-human entities. Echoing themes and perspectives associated with postmodernism, advocates argue that thinking beyond the limitations of binary oppositions is often useful in helping us to address the plight and predicaments of those members of communities who

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already experience marginalization and social, economic, and political exclusion (Devecka, 2013; Gunkel, 2023).

Unsurprisingly, Gunkel (2023) found the debate between critics and advocates polarizing and plagued by the fact that one side opposes what the other side promotes. In pursuit of a solution to this conundrum, he reported that some thinkers have wondered if there might be an alternative option that splits the differences. This approach or strategy is akin to the *and/with* thinking or simultaneity of differences in postmodern thought, which would accommodate the concerns expressed by both critics and advocates. After discussing how third alternatives can integrate binary opposites, Gunkel (2023) claimed, "A similar strategy has been proposed for resolving the person/thing debate with robots and artificial intelligence, and that solution goes by the name slavery" (p. 20). In the legal and philosophical literature, Gunkel claimed that he encountered several serious proposals that called for instituting what he described as *slavery 2.0*—but for robots. These proposals justified slavery as a solution to the person/thing debate and turned to laws once used to enslave humans as a roadmap. An example of their logic can be found in ancient Rome, where slaves were considered entities that occupied simultaneous positions as both humans and non-humans (Gunkel, 2023; Heuman & Burnard, 2011; Patterson, 2018). In other words, slaves were considered both persons and things. However, Gunkel (2023) argued that repurposing slave laws to address this debate and its moral and legal ramifications is problematic. He noted that "the difficult history of human slavery and its horrific social and political consequences actually produce more problems than they can possibly resolve" (p. 20). While he encouraged further reflection on the debate, Gunkel might also agree that the kind of thinking that we embrace to overcome oppositional divisions should not make matters worse. However, postmodernism in any form reminds us that our solutions to problems are largely socially constructed (Elias & Merriam, 2005). The perspectives and practices of those in power are always implicated in these processes and their economic influence on our

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understanding of social reality (Derrida, 1978, 1997; Lyotard, 1984, 1991). As such, Gunkel (2023) evidenced the ways that divisive moral and legal problems and their solutions are informed by postmodern thought and its advantages and admonitions. In turn, his work substantiates the position of those who claim that postmodernism is not in decline or finished. More significantly, it troubles the claims of scholars such as Peters et al. (2019) who have argued that postmodernism is dead.

Conclusion

This study has demonstrated that postmodernism is not dead—especially when we consider the fact that scholars such as Gunkel (2023) and others continue to value its logic as an important lens for understanding discussions on the reintroduction of slavery for robots by repurposing slave laws originally created for humans (Benjamin, 2019; Floyd, 2023; Sparrow, 2020). In this context, postmodernism is relevant and possibly indispensable for resolving the cultural, educational, and legal problems that advanced technology introduces in the twenty-first century. In their prescience, Derrida (1997) and Lyotard (1984) anticipated many of the themes and problems that we encounter today. In many ways, their concepts echo concerns about language and binary thinking that postmodern educationists such as Aronowitz and Giroux (1991) and Usher and Edwards (1994) often raise in their writings on education. To advance the work of these important theorists and thinkers, this study introduced the concept *simultaneity of differences* as a conceptual tool. It allows us to recalibrate Derrida's and Lyotard's contributions to postmodern thought in ways that are accessible and operational. More importantly, the concept confirms the continued significance of capitalism and postmodernism in the academy and beyond (Rockhill, 2023).

However, the simultaneity of differences that postmodernism privileges is not a panacea. It is introduced in this survey to help educators navigate the conceptual confusion that we encounter trying to comprehend the competing appreciations of

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postmodernism in the academic literature, across the disciplines, and in our pedagogical orientations. It also asks us to reckon with the fact that pedagogy is largely inseparable from the history of slavery and technology in the West and their rearticulation for the computer age (Devecka, 2013; Floyd, 2023). The invention of teacherbots and the growing discourse around robot slaves put this history on the table in ways few innovations have in education studies. Postmodernism can help us wrestle with this paradox and its significance as the foundational context and social dynamic in which teaching and learning emerge in ancient Greek and Roman culture. While this history may do little to thwart proclamations of the demise or death of postmodernism in some academic circles, we now have an alternative perspective on postmodernism and a conceptual tool that helps us to respond to critics and their claims, particularly in the field of educational philosophy. In fact, we will likely need to develop concepts, discourses, and frameworks that are even more transformative in order to face the many social, economic, and legal challenges that we are likely to encounter as artificial intelligence and robots become increasingly ubiquitous in our public and private lives.

We face a digital future in which human-like robots are empowered by artificial intelligence and algorithms to perform labour and duties that we are incapable of doing on our own or no longer want to do at all in a digital economy increasingly oriented toward convenience and cost efficiency. As such, robots are being cultivated and positioned to match or surpass human capacities and capabilities. Ironically, success in these endeavors will likely deepen our dependence on the services of computerized devices and machines enlivened by artificial intelligence, thus reigniting fears that robots will deskill us and replace humans in our classrooms as well as our workplaces. These fears are not baseless because this phenomenon already occurs. It has real material implications for us all, particularly educators. Will teacherbots or other forms of artificial intelligence eventually take over our classrooms? Will they eventually replace educators? These are questions that future studies can help us address. In the meantime, educators can prepare by

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testing postmodern ways of thinking and teaching in order to process the new realities and experiences that await us. Inevitably, many educators will find themselves rethinking their suppositions about technological phenomena and what it means to teach and learn in a world where artificial intelligence and robots are designed and trained for positions that are usually occupied by people. Postmodernism can help us understand and appreciate why robot slavery troubles the border between human and non-human entities and what that might entail for the future of teaching and learning.

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