

CONSTRUCTIVIST PEDAGOGICAL FRAMEWORKS: INSIGHTS FROM SOCRATES, JEAN PIAGET, AND ROCKEFELLER

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ABSTRACT

The practice of conventional education has reduced students to mere recipients of knowledge. This creates a dilemma of objectification for students in concrete learning experiences. Meanwhile, educators exercise full authority over the learning process, with the underlying assumption that an educator's knowledge represents an absolute truth. This paper aims to demonstrate the praxis model of constructivist pedagogy. This paper critically examines the transmission-based paradigm of education by proposing a dialogical and reflective approach to learning. Historically, this model can be traced back to the dialogical philosophy espoused by Socrates. In contemporary pedagogy, it is reflected in Jean Piaget's theory of constructivism and in the curriculum at Rockefeller University. This research employs a critical hermeneutics methodology. All data in this study were derived from a range of written sources, including core textbooks and reputable national and international journal articles that examine the educational approaches of Socrates and Jean Piaget, as well as the curriculum framework of Rockefeller University. The results of the biographical analysis of the thoughts of Socrates, Jean Piaget, and the learning practices within the curriculum at Rockefeller University indicate that constructivist pedagogy represents an ideal type of humanist pedagogical praxis that is highly relevant to the modern education system. Accordingly, constructivist pedagogy provides a humanistic and dialogically grounded framework for learning, one that is well-suited to meet the evolving demands of 21st-century education.

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INTRODUCTIONS

Classical pedagogical models consistently position the educator as the sole authority of knowledge, while learners are treated as passive recipients, expected to accept information without questioning its objectivity. Such approaches diminish students' academic potential to construct meaning and restrict dialogical space within the learning process. In

contrast, millennial learning practices promote more flexible, democratic, and collaborative knowledge exchange, with greater relevance to real-life contexts. Nevertheless, traditional pedagogical patterns persist, resulting in a gap between the demands of 21st-century education and the predominantly monological instructional approaches still in use.

Teacher-centered classical instructional models may foster student apathy, as learners tend to accept information uncritically and take it for granted within the learning process (Firmansyah & Jiwandono, 2022). As a result, students rarely pose critical questions, engage in fair and dialogical discussions, due to the predominantly monological nature of the instructional approach (Afif Burhanudin, Eti Poncorini Pamungkasari, 2017; Hstanti Widy Nugroho, Rona Utami, 2022). Moreover, teacher-centered learning models tend to inadequately equip students with the contextual knowledge and skills essential for 21st-century education (Kar & Sarkar, 2024; Marra, 2022). The primary focus of classical education lies in reinforcing students' memorization skills. Consequently, learners are less encouraged to develop systematic, creative, innovative, ethical, and empathetic thinking abilities.

Meanwhile, millennial civilization, particularly its educational system, is characterized by the advancement of scientific knowledge and the acceleration of communication technologies. The rapid development of virtual communication enables access to even the most "isolated" localities across the globe. Beyond that, virtual communication technologies have mediated the compression of space and time simultaneously. Virtual communication represents the hegemony of technological rationality within the structure of the modern world (Brayford, 2021).

According to postmodern philosopher Paul Virilio, the culture of "virtualism" is dominated by the concept of dromology. Dromology is a key thesis proposed by Virilio to articulate his argument: the emergence of speed as the fundamental essence of global capitalism. For Virilio, speed is the very entity of progress. The term dromology derives from the Greek word *dromos*, which literally means "race" or "racecourse." Thus, etymologically, dromology refers to the science of speed (Pirnajmuddin, 2020). Speed is the most elementary component in analyzing human civilization in the era of virtual networks (Lennerfors, 2014).

The simultaneous shifts in rhythm, marked by extreme and unpredictable speed, are a logical consequence of the virtual communication technology revolution. Consequently, these transformations visibly deconstruct long-standing demarcation claims that have served as rigid boundaries between disciplines, philosophy, tradition, religion, morality, ethics, family institutions, and—most notably—the domain of formal educational praxis. These epistemological shifts not only destabilize traditional knowledge systems but also prompt a transformation in educational perspectives. Pedagogy must move beyond passive norm transmission toward an active, dialogical, and reflective space of learning (Maine, 2025).

Meanwhile, within the domain of pedagogical praxis, the entire apparatus of formal education—whether willingly or not—is compelled to adapt to an inclusive pedagogical epistemology. Inclusive pedagogical practice presupposes a shared value orientation within the educational system. Learners are encouraged to actively participate in the entire learning process (Moriña, 2020). Inherently, inclusive pedagogy maintains a set of value systems embedded within a formal educational framework (Grazia et al., 2021; Moxley et al., 2021). Fundamentally, this value orientation is manifested through typified patterns of constructivist epistemology, long pioneered by philosophers such as Socrates and Jean Piaget, as well as through the learning practices implemented at Rockefeller University.

This textual article aims to present a model of inclusive-humanist pedagogical epistemology, whose historical roots can be traced to the classical (dialogical) teaching style practiced by the philosopher Socrates. In the context of modern constructivist pedagogy, this model is identifiable through the philosophical ideas of Jean Piaget. From a practical standpoint in higher education, it is reflected in the "laboratory" of curriculum implementation at Rockefeller University.

METHOD

This research falls within the category of critical hermeneutic inquiry. Historically, the development of hermeneutic philosophy has always existed within a tension between two major conceptual variants that simultaneously

presuppose and oppose one another. These two epistemological poles are represented by the school of intentionalism and the Gadamerian hermeneutic tradition.

The core premise of intentionalist thought holds that the meaning of a text is inherently present, having been embedded by the author or originator, and thus merely awaits interpretation by the reader (Bleicher, 2017). Conversely, Gadamerian hermeneutics is grounded in the fundamental premise that textual meaning is sought, constructed, and reconstructed by the interpreter in accordance with the interpreter's contextual horizon (K.Bertens, 2002).

Textual meaning is never final; it is always contingent upon the context in which the text is created. Meanwhile, the event of understanding occurs when there is a fusion of horizons between the interpreter and the work itself (Fransisco Budi Hardiman, 2015; Sumaryono, 1993). In a historical context, the concept of hermeneutics positions history as a dialogical space between the past, the present, and the future. Accordingly, the hermeneutic method seeks to integrate every element within a text into a coherent whole, through a process commonly known as the hermeneutic circle (Fransisco Budi Hardiman, 2003).

To enhance the credibility of the data, this study employed source triangulation using written documents. Through this approach, the researcher compared and critically examined information drawn from a diverse range of credible written sources, including core textbooks and reputable national and international journal articles. These sources collectively represent the constructivist learning models of Socrates and Piaget, as well as the curriculum framework of Rockefeller University. Accordingly, triangulation was intended to strengthen data interpretation, uncover multiple perspectives, and minimize the risk of bias stemming from reliance on a single authoritative source.

Moreover, triangulation served to explore a variety of viewpoints. This multiplicity of perspectives enabled the researcher to conduct a more in-depth and comprehensive analysis of the key texts that form the foundation of this textual study. Such a comprehensive analysis was essential to avoid the pitfalls of a singular interpretive bias in examining the entire body of data.

The critical hermeneutic method was chosen as the primary approach for this research, as all data utilized in the study are derived from written texts. These written sources include core textbooks and, more importantly, a selection of online scholarly journal articles that are highly relevant to the research topic. Based on methodical hermeneutic procedures, the data collection technique involved a careful selection of foundational materials. The selected texts were first examined literally, followed by a process of critical reading and subsequently, critical interpretation of the entire body of collected texts (Dwisisila et al., 2023). After all written texts were critically examined, a critical interpretation of the textual material was conducted. Accordingly, at the stage of textual interpretation, the researcher relied on methodical hermeneutic procedures (Bakker, 1986).

RESULT AND DISCUSSIONS

Results

Based on a hermeneutic analysis of textbooks and journal articles discussing the core ideas of constructivism as articulated by Socrates, Jean Piaget, and the curriculum of Rockefeller University, twelve (12) key themes were identified that reflect the spirit of constructivist learning. These twelve themes are visualized by the researcher in Table 1

Table 1. Identified Patterns of Constructivist Learning Approaches

Core Theme	Summary Code of Findings
Innate Human Knowledge (Socrates)	Every human being possesses knowledge since the stage of pre-existence
Socratic Dialogical Method	Socrates employed a dialogical method to elicit knowledge from learners
Role of Educator as Facilitator (Socrates & Piaget)	The educator does not provide direct answers but assists learners in discovering objective truths. The educator acts as a facilitator rather than the center of knowledge
Relevance of Socratic Method in Indonesia	This method has been proven to enhance students' logical reasoning and argumentative skills
Learning Autonomy and Non-Conventional Curriculum (Rockefeller)	Rockefeller University does not implement a standardized curriculum but grants full authority to learners to determine their own learning paths. This system fosters high levels of responsibility and intellectual freedom
Constructivist-Based Learning (Rockefeller)	The learning process emphasizes reflective activities and the search for meaning rather than knowledge transfer. Learners act as active subjects in constructing knowledge
Experience as the Foundation of Knowledge Construction (Rockefeller & Piaget)	Meaningful knowledge can only be acquired through direct experience and real engagement with the social and natural world
Contextualized Learning (Rockefeller)	Direct engagement with real objects or sites—such as historical locations—deepens understanding and enhances real-life relevance
Foundational Structure of Piaget's Constructivist Theory	Piaget developed four key concepts—schemata, assimilation, accommodation, and equilibrium—that explain how individuals construct knowledge through interaction with experience
Three Types of Knowledge According to Piaget	Human knowledge is categorized into physical, logical-mathematical, and social knowledge. These components are formed through concrete experience and active reflection
Role of Learners in Constructivist Praxis	Learners are autonomous subjects who actively construct meaning through dialogue and creative exploration. The learning process is collaborative and participatory
Relevance of Piagetian Constructivism in Indonesia	The application of Piagetian constructivism in schools and vocational education enhances student interaction, independence, and contextual thinking

Discussion

Socrates: The Method of Maietike Tekhne

The essence of constructivist “ideology,” which places particular emphasis on empirical experience, can be paralleled with the wisdom teachings long ago practiced and taught by the philosopher Socrates. Socrates appeared to hold a firm intellectual conviction that knowledge—regardless of its form—is a natural endowment possessed by every human being since the time of their pre-existence (Arnaldi et al., 2020). Thus, every human being inherently possesses natural knowledge within themselves.

Recognizing that knowledge is a natural endowment of every human being, Socrates felt compelled to assist young Athenians he encountered in “giving birth” to the knowledge they already possessed. The method practiced by Socrates was, in fact, inspired by his own mother’s profession as a midwife, whose daily task was to assist in the process of childbirth. It is therefore not an exaggeration to say that Socrates formulated his method in close analogy to the art of midwifery—maietyke tekhnē, or the technique of intellectual midwifery (Bakker, 1986).

Through this midwifery method, Socrates—as a wise teacher—dedicated himself to educating young Athenians, not by promoting superficial intelligence, but by guiding them toward intellectual awakening. His primary aim was to help these youths escape the traps of flawed reasoning, vague understanding, myth-bound thinking, and doctrines that anesthetized the knowledge system. Socrates sought to draw their thinking outward, enabling a reflective intellectual distance through which they could grasp what he referred to as objective truth (Santis, 2019).

Uniquely, the path or strategy employed by Socrates to help young people attain objective truth was not carried out in air-conditioned classrooms, sophisticated laboratories, or through the latest instructional technologies. Nor was it monological in nature. Instead, Socrates relied on the method of dialogue. Ideal dialogue presupposes the simultaneous exchange of ideas. Communication within the Socratic dialogical context involves components of questioning and answering. Socrates utilized this dialogical method to elicit knowledge from those with whom he engaged in conversation (Arazo et al., 2018; Kennedy, 2021).

As was his custom, Socrates would engage anyone he encountered in conversation, posing “radical” questions and allowing them to think as deeply as possible based on their own experiential knowledge in order to respond to the issues he raised. In fact, during debates, many individuals would walk away abruptly, feeling exposed by Socrates’ probing inquiries.

Through this dialogical foundation, Socrates was able to assist young Athenians in giving birth to their inherent knowledge of truth. His philosophy sought to cultivate an orientation toward the pursuit of objective truth. The path Socrates offered for attaining such knowledge was active dialogue (Kelam & Vu, 2019). Thus, Socrates did not seek to proclaim any privileged knowledge of truth, nor did he position himself as an all-knowing teacher or educator. Rather, he endeavored to guide those he encountered—wherever they were—to discover for themselves the source of knowledge that inherently resides within them since their pre-existence (Rapar, 1996).

The application of the Socratic method in formal education remains highly contextual and relevant today, particularly in Indonesia. Fundamentally, Socrates valued the diversity of opinions within argumentative discourse, grounded in his belief that every human being possesses innate knowledge from the stage of pre-existence. A field study concluded that the contextual implementation of the Socratic method successfully stimulated logical and systematic thinking among students of Class VIII-3 at Madrasah Tsanawiyah Gunungsindur, Bogor Regency, during the second semester of the 2016/2017 academic year (Idham Khaliq, Aulia Azzahra, Alsavira Safitri, 2017).

Additional research also offers positive recommendations, indicating that the implementation of the Socratic method can enhance the argumentative skills of students engaged in community mentoring programs (Tyas, E Handayani, Sunarto, 2018). Further research concludes that the application of the Socratic learning model can assist law students in developing analytical thinking skills to resolve legal cases arising within society (Andriati, Syarifah Lisa, 2025). The classical idea of midwifing real human experience into specifically meaningful knowledge was later further developed by Jean Piaget through his theory of constructivism.

Jean Piaget: Epistemology of Constructivism

Theoretical foundations within the realm of intellectual inquiry occupy a highly critical position. Nevertheless, it must be understood that the status of a theory in scientific discourse is never final nor absolute. The presence of a theory in academic work serves primarily as a technical medium for analyzing the complexity of the scientific problems at hand. Thus, no matter how sophisticated the foundational premises of a theory may be, they must be interpreted within the context of their inherent limitations.

There are three key benefits of educational theory. First, it serves as a strategic approach to understanding the domain of general knowledge. As an approach, a theory can act as a stimulus for researchers to pursue further scientific inquiry. Second, it helps academics condense broad and abstract scientific propositions into narrower and more accessible scopes of discussion. Third, educational theory offers a lens through which researchers and theorists can comprehend the content of knowledge while also revealing possible methodological dimensions for exploration (Hill, 1977).

Conversely, the maietike tekhne method described above finds its proper academic grounding through the works of Jean Piaget. Piaget's scientific ideas are integrally encapsulated within the theory of constructivism. In understanding the nature of knowledge, both Socrates and Piaget, in fact, begin from empirical concerns (KOUICEM, 2020; Merewether, 2020). Socrates derived his epistemological insight from his mother's experience as a midwife. Similarly, Jean Piaget gained his intellectual inspiration through intensive observation of snails, which demonstrated remarkable survival and adaptive capabilities within their natural environments.

Building upon the strength of empirical experience, Jean Piaget proposed four technical concepts that practitioners must first understand when exploring the practical application of constructivist theory. These four concepts include: 1. Schemata—Schemata are ways of perceiving, understanding, and thinking about the world. In essence, schemata serve as pathways through which individuals think, interpret, and comprehend their surrounding world. According to Paul Soeparno's interpretation, schemata are mental or cognitive structures that enable individuals to intellectually learn from their environment. 2. Assimilation—This refers to the process of adapting and organizing one's ideas in response to new experiences. 3. Accommodation—The natural ability of individuals to construct and modify new schemata according to the levels and categories of experience they encounter. 4. Equilibrium—The individual's capacity to balance the processes of assimilation and accommodation (Nur Aimi Nasuha Burhanuddin, Nor Aniza Ahmad, 2021; Samaiya, 2022; Suparno, 1997).

The technical concepts proposed by Piaget should not be understood in isolation, as key notions such as schema, assimilation, accommodation, and equilibrium constitute an integral pathway to knowledge (Ferreiro, 2019). Accordingly, the scope of a student's epistemological framework is intrinsically linked to the range and depth of experiences they have encountered (Powell, 2020). In the absence of adequate experiential exposure to a given subject matter, a learner's comprehension remains markedly limited.

In the context of epistemological inquiry, Piaget delineates three distinct typologies of human knowledge, each characterized by its mode of acquisition and ontological orientation. The first, physical knowledge, encompasses all forms of understanding that pertain to the observable and measurable properties inherent in physical objects. The second, logical-mathematical knowledge, refers to cognitive structures constructed through the learner's active engagement with specific objects, wherein abstract relations and operations are formulated. The third, social knowledge, denotes the body of understanding derived from the sociocultural milieu in which the individual is embedded, shaped by norms, conventions, and interpersonal interactions (Suparno, 1997).

Upon closer examination, when the educational model advocated by constructivist thinkers emphasizes the depth of learners' experiential engagement, such an ideal approach closely approximates the etymological essence of education itself-*educare*. Derived from the Latin roots *ex* (meaning 'out of') and *ducere* ('to lead' or 'to guide'), *educare* signifies a process of guiding individuals outward from a state of ignorance or immaturity. Accordingly, education may be understood as a systematic endeavor to lead learners from conditions of epistemic deficiency toward greater cognitive maturity and informed understanding (Kebung, 2008).

Moreover, the entirety of human knowledge systems is shaped both organically and through structured learning processes within societal and communal contexts—mediated by role models, lived examples, and significant events occurring in the environment where the individual resides. Upon closer scrutiny, the core of Kebung's epistemological proposition concerning the sources of human knowledge fundamentally originates from experience. Consequently, experience may be construed as the reflective outcome of one's engagement with reality, serving as the most elementary and indispensable construct within the theoretical framework of constructivism.

An educational praxis presupposes the active and coordinated engagement of two or more subjects within a shared spatiotemporal framework. The subjects in question—namely educators and learners—participate in a dynamic interplay wherein the educator assumes the role of a mediator of learning. Within this construct, the educator is not to be conceived as an omniscient authority over all domains of knowledge, but rather as a facilitator who guides, provokes, and co-constructs understanding in collaboration with the learner.

Conversely, the learner's existence within the educational process is conceived as that of an autonomous subject. Constructivist epistemologists thus recognize that teaching is not an artificial or mechanistic activity; rather, it transcends the mere transmission of knowledge from educator to learner. When knowledge is treated solely as a transferable commodity, it inevitably reduces—and may even entirely disregard—the experiential dimension that is central to meaningful learning. On this basis, proponents of constructivist thought advocate for the deliberate structuring of academic activities that stimulate creativity and innovation. Through such creative and innovative engagements, learners are encouraged to actively construct their own experiential understanding (Kostenius & Alerby, 2020; Leahy et al., 2019). In contrast, the classical educational paradigm tends to prioritize the completion of a predetermined curriculum. To ensure curricular fulfillment, the teaching-learning process often gravitates toward a monologic model, wherein the educator is positioned as the sole epistemic authority, and the learner is rendered a passive recipient of instructional content. This model presupposes that the educator alone embodies the source of knowledge, despite the inherent limitations of such a role.

The logical implication of this monologic instructional pattern manifests as a distinct pedagogical problem: learners' knowledge remains confined to the technical aspects of the subject matter, with their epistemic engagement reduced to the rote memorization of discrete units of information presented by the educator within the classroom setting. Indeed, the conceptualization of the quality or weight of knowledge ought not to be reduced to rigid curricular metrics or formulaic indicators of achievement. The qualitative dimension of human understanding is inherently multifaceted and cannot be adequately captured through the quantification of scores or the binary correctness of learners' responses during assessments. Such reductionist approaches risk obscuring the depth, nuance, and contextual richness that characterize genuine epistemic engagement.

In response to the prevailing tendency toward the mystification of quantification logic in educational practice, non-formal education practitioner Roem Topatimasang offers a pointed critique. He arrives at the conclusion that what transpires within Indonesia's educational system is not the attainment of qualitative transformation, but rather the accumulation of quantitative increments. This phenomenon is rooted in the underlying assumption that qualitative renewal can only be achieved through quantitative expansion. Ironically, such a philosophy of education—anchored in numerical growth as a proxy for epistemic progress—remains deeply entrenched within our educational paradigm (Topatimasang, 1998).

Departing from the classical educational paradigm, proponents of constructivism advance a radical epistemological stance: learning is conceived as a dialogical process involving the assimilation and adaptation of instructional content, critically juxtaposed with the learner's pre-existing conceptual framework. Constructivist theorists maintain that each individual possesses a unique constellation of experiences, which in turn shapes a distinct repository of knowledge. This theoretical conviction underscores the personalized and context-dependent nature of cognitive development, positioning the learner not as a passive recipient but as an active constructor of meaning (Meir Muller, 2018). When the learning process unfolds in a linear and progressive manner, the learner's body of knowledge concerning a given subject tends to expand and deepen.

In the context of education in Indonesia, research has shown that the application of Piaget's constructivist theory in online learning yields significant effects. The learning process fosters intense interaction between students and educators, where educators do not position themselves as the central source of knowledge, but rather as partners in the learning journey. Such constructive learning experiences were observed at SMP Negeri 1 Pabelan (Budyastuti & Fauziati, 2021). In relation to the application of Piaget's constructivist method at the vocational education level, it is concluded that the relationship between educators and learners is grounded in humanistic values. This means that learners are positioned as autonomous subjects capable of developing their thinking skills in a contextual manner (Suryati et al., 2023).

This autonomous epistemic authority—along with its potential for intellectual growth—can be discerned through the curricular praxis exemplified by institutions such as Rockefeller University, where the cultivation of independent inquiry and disciplinary rigor is embedded within the educational framework.

Constructivist Praxis: Learning from the Curriculum of Rockefeller University

Rockefeller University stands among a constellation of reputable higher education institutions in the United States. At first glance, its public visibility may appear modest compared to other globally renowned universities. However, its name has gained traction within scholarly circles, particularly due to high-tension polemics that have emerged among theorists specializing in educational analysis and practitioners engaged in pedagogical reform. These debates have largely centered on critiques of the university's unconventional educational model—one that challenges normative assumptions about curriculum design and instructional delivery (SMITH et al., 2012).

The educational system—and more specifically, the instructional praxis—at Rockefeller University is often perceived as unconventional, primarily due to its deliberate departure from rigid, standardized higher education curricula. Rather than adhering to prescriptive curricular frameworks, the institution entrusts its academic community with full autonomy to explore and cultivate their intellectual potential to the fullest extent. One of the central considerations in the development of its learning curriculum is the recognition of learners' individual educational needs as the foundational axis of pedagogical design (Zhang et al., 2020). It is therefore not an exaggeration to acknowledge circulating accounts suggesting that Rockefeller University operates without fixed course offerings, permanent class schedules, or standardized assessments such as midterm and final examinations—practices commonly institutionalized within the administrative frameworks of Indonesian higher education. This departure from conventional academic structures reflects a deliberate philosophical stance that privileges intellectual autonomy and learner-centered inquiry over rigid curricular formalism.

At Rockefeller University, educators—and more notably, learners—are granted the autonomy to select courses aligned with their intellectual interests, engaging in their chosen fields of study with depth, ethical commitment, and personal responsibility. This learner-centered pedagogical model fosters meaningful academic engagement and has been shown to correlate positively with students' academic performance, as it cultivates intrinsic motivation and epistemic ownership (Bergen & Parsell, 2018; Topatimasang, 1998). Such a learning system clearly illustrates that educator-centered instruction ought to be reconsidered, if not altogether abandoned. Accordingly, educational praxis must be reoriented to afford learners expansive opportunities to explore, interrogate, and develop their own bodies of knowledge. This shift not only aligns with constructivist principles but also fosters intellectual autonomy, critical engagement, and the cultivation of meaningful understanding (Aartun et al., 2020; Holbrook & Chowdhury, 2022; Islam, 2021). It is on this basis that the educational system as practiced at this university may appear unconventional, even anomalous, to observers accustomed to traditional academic structures. Numerous education experts have expressed skepticism toward such 'foreign' pedagogical arrangements. However, it is imperative to suspend premature judgment, for it is precisely through this democratic model of education that authentic, creative, and innovative scholars have emerged—individuals whose intellectual trajectories are shaped not by rigid conformity, but by autonomous inquiry and epistemic freedom.

Renowned scientists such as David Baltimore (discoverer of the enzyme reverse transcriptase), Gerald Edelman (analyst of the complex structure of gamma-globulin), Theodosius Dobzhansky (pioneer of modern genetic engineering), and René Dubos (innovator in the application of antibiotic compounds) are among the distinguished figures who emerged from the intellectual crucible of Rockefeller University. Equally remarkable is the institution's record of academic excellence, with sixteen faculty members and two students having been awarded the Nobel Prize in recognition of their contributions within their respective fields of specialization (Topatimasang, 1998).

The distinctive narratives emerging from educational paradigms often deemed unconventional by certain scholars constitute historical facts within the academic domain that must not be dismissed lightly. Educational programs and curricular models that deviate from normative standards should not be subjected to reductive stereotyping, for their

apparent irregularity may in fact reflect deeper philosophical commitments to epistemic diversity, learner autonomy, and pedagogical innovation.

Thus, it may be interpreted that the pedagogical culture practiced at Rockefeller University constitutes a living embodiment of the constructivist philosophical paradigm. Constructivism, as an epistemological framework within education, affirms the learner's autonomy in expanding their experiential knowledge through dialogical engagement. This approach foregrounds the co-construction of meaning, privileging reflective inquiry over passive reception, and positions education as a dynamic interplay between subjectivity, context, and critical discourse (Meir Muller, 2018). From the standpoint of constructivist philosophy, pedagogy and instructional practices should not be employed as vehicles for propaganda or ideological indoctrination. Education is best understood as an original learning experience that fosters the maturation of the learner as a subject. For instance, knowledge concerning motion may be acquired through diverse learning sources. By engaging in exploratory interaction with these varied sources, learners are afforded the opportunity to construct new understandings and to reflect upon their learning processes in a manner that is both responsible and self-directed (Abderrahim & Plana, 2021).

Building upon this foundational premise, the implementation of constructivist pedagogy reframes learners not as objects of educational hegemony, but as autonomous subjects within the learning process. Learners are systematically guided, stimulated, and even challenged in their commitment to discover knowledge through pathways they deem most viable. Constructivist pedagogy places central emphasis on experience, recognizing it as a vital source of new knowledge. Through reflective engagement with lived experiences, learners construct meaning, deepen understanding, and cultivate intellectual maturity (Gorodetsky et al., 2014). What is meant by 'the most viable pathway' in this context refers, in essence, to the learner's intimate experiences of discovery within a particular domain of knowledge. These experiences possess a degree of epistemic intimacy, shaped by the learner's personal engagement, curiosity, and existential resonance with the subject matter. Constructivist pedagogy recognizes that such individualized encounters with knowledge are not merely incidental, but foundational to the formation of authentic understanding.

Conceptually, constructivism is defined as a school of thought within the philosophy of knowledge (epistemology) that posits all human knowledge as a constructed product of deeply meaningful experiential encounters. The constructivist paradigm regards learning experiences not merely as procedural activities, but as intrinsically meaningful engagements through which new knowledge is actively created. This epistemological stance foregrounds the role of the subject's lived experience as the foundational source of cognitive development and intellectual formation (Suparno, 1997). Such meaningful epistemic experiences are not merely sensory-physical facts detached from the fabric of everyday human life; rather, they are the product of human knowledge construction itself. These experiences emerge through reflective engagement with lived reality, wherein the subject actively interprets, reconfigures, and internalizes phenomena in ways that transcend mere perception and give rise to deeper cognitive structure.

Adherents of constructivist philosophy ground their epistemological stance in a central thesis: that human knowledge systems—regardless of domain—cannot be directly transferred from one mind to another. For instance, the intellectual experiences of an educator cannot be seamlessly transposed into the cognitive world of the learner. This conviction reflects a foundational credo that every educational system possesses a particular and irreducibly unique character. Such particularistic experiences are not analogous to transactional models of transfer or circulation, as commonly practiced in financial institutions. Rather, constructivist pedagogy positions the learner as an autonomous epistemic agent—one who actively and creatively constructs the content of learning through adaptive engagement with fragments of concrete, everyday experience.

The necessarily limited overview of the foundational elements of constructivist theory presented above seeks to underscore a central epistemological claim: that the essence of knowledge is ontologically real. Knowledge of any kind is not a mere simplification of an abstract, ethereal, or theoretical visualization detached from rational accessibility. Rather, it is situated within the immediacy of human lived experience—emerging from the concrete, dialogical, and

interpretive engagements that shape everyday life (Kunaenih, Yuli Marlina, Maria Ulfah, Dian Safitri Aminanti, Amirul Arsyad & Sawkani, 2024).

The foundational assumption of constructivist epistemology may be radicalized through the following proposition: how can learners be expected to possess deep knowledge of endangered wildlife species if they have never been invited to visit a zoological park and engage directly with the animals in question? This rhetorical inquiry underscores the constructivist conviction that meaningful knowledge cannot be acquired in abstraction, but must be grounded in concrete, lived experiences. Direct engagement with phenomena—especially those embedded in the natural and social world—is essential for cultivating authentic understanding and epistemic depth.

Another illustrative analogy may be drawn from the discipline of history. For instance, the experiential understanding of Soekarno's historicity becomes significantly more comprehensive, profound, and meaningful when the Bung Karno Site in Ende is actively utilized as a contextual learning medium for both students and university learners. When such a pedagogical function is optimally enacted, the epistemic engagement with Soekarno as a historical figure transcends the limitations of textbook-based instruction. From this simple yet powerful observation, it may be inferred that within the constructivist paradigm, learner experience—whether physical, mental, or psychological—constitutes a preconditional dimension that, when meaningfully constructed, transforms into a principal indicator for assessing the quality of learners' knowledge.

CONCLUSION

The transformation of educational systems in the virtual era presents one of the most formidable challenges for formal academic institutions. It is not inconceivable that foundational values and noble visions—such as humanization, which once served as the animating spirit of education—are gradually being displaced by the logic of capitalist pragmatism. To avoid being ensnared in the vortex of artificial, pragmatist-capitalist interests, there remains little alternative but to demand a paradigmatic shift in educational theory and praxis, one that is responsive to the evolving contours of contemporary life. In this regard, the constructivist pedagogical paradigm emerges as a compelling alternative—one that must be earnestly considered by policymakers and educators alike in navigating the complexities of formal education within the millennial-virtual epoch.

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