

Montessori and Skinner: A Critical Evaluation of Pedagogical Approaches in Education

Introduction

Pedagogy can be broadly understood as the theory and practice of education, encompassing both the methods and principles that underpin how learning is facilitated within educational institutions. Within modern primary education, pedagogical approaches are often shaped by differing theoretical perspectives regarding how children acquire, construct, and apply knowledge (Veale, 2025). This assignment aims to critically examine the educational philosophies of Maria Montessori and Burrhus Frederic Skinner, two highly influential theorists whose contrasting perspectives have significantly shaped approaches to pedagogical techniques utilised in modern classroom practice.

Montessori's child-centred approach directly aligns with constructivist principles, emphasising independence, intrinsic motivation, and the holistic development of the learner. In contrast, Skinner's behaviourist theory conceptualises learning as a process driven by external stimuli, reinforcement, and observable behavioural outcomes. These contrasting perspectives offer deeper insight into the complexities of the role of the educator, the learner, and the learning environment (Cranmore, 2022; Montessori, 2013).

The selection of these theorists enables a critical exploration of opposing assumption about how learning occurs, particularly within the context of primary education. This assignment will examine the historical contexts underpinning each theory, analyse their key principles and practices, evaluate their impact on contemporary education, and provide a critical reflection on their relevance within modern educational systems.

Historical Context

Maria Montessori was born in Ancona, Italy, in 1870, during a period of profound social, political, and intellectual transformation. During this time, Italy was actively transitioning from autonomous provinces into a unified nation state, a process that generated significant social and economic disruption, with entrenched poverty and stark regional inequalities shaping access to education. Within this context, formal schooling was

largely authoritarian in nature, characterised by rigid discipline, rote memorisation, and an emphasis on obedient conformity rather than intellectual curiosity. Such practices reflected the priorities of a newly centralised education system, attempting to impose uniformity across a diverse and unequal population, struggling with varying regional disparity, limited access to funding, and prevalent illiteracy, often at the expense of individual learner needs (Duggan, 2014; Kramer, 2017).

Montessori's early exposure to these conditions, particularly the limitations of traditional schooling for disadvantaged children, informed her belief that education should cultivate, rather than constrain, individual learner potential. Her work with marginalised groups, including children with additional learning needs or otherwise excluded from mainstream education, was especially significant in shaping her view of education as a tool for social reform (Murray, *et al.*, 2023). Through her initiatives, such as the 1907 Casa dei Bambini (Children's House), she demonstrated that when provided with appropriate environments and materials, children from disadvantaged backgrounds were capable of significant educational development. This challenged the dominant assumptions of the time, that the ability to develop intellectually was fixed, or socially determined, repositioning education as a tool for reducing societal inequality (Kramer, 2017). Her approach, aligned with principles later associated with the Constructivist theory of learning, prioritised independent learning, sensory engagement, and the importance of a carefully prepared learning environment.

Furthermore, Montessori's academic background in medicine, achieved in defiance of prevailing gender norms, provided a scientific and observational framework that distinguished her from many contemporaries in education. This scientific training enabled her to apply empirical methods to the study of child development, in ways that were innovative at the time, positioning learning as a natural developmental process rather than one imposed through external authority (Murray, *et al.*, 2023). Through this, Montessori's historical context conceptualised her philosophical positioning on the role of education in both the natural cognitive development of children and as a transformative tool for social reformation, grounded in the needs and capacities of every child (Kramer, 2017; Lillard, 2017).

Burrhus Frederic Skinner was born in Pennsylvania, United States of America, in 1904, during a period marked by rapid industrialisation, technological advancement, and a growing emphasis on scientific objectivity. The late nineteenth and early twentieth centuries saw the rise of the efficiency movement, strongly influenced by the work of American mechanical engineer, Frederick Winslow Taylor, which sought to optimise social productivity through systematic observation, empirical measurement, and control (Taska, 2007; Stoller, 2015). These principles extended beyond capitalistic industrial production into education, contributing to the development of the “factory model” schooling system, characterised by standardisation, hierarchical structure, and an emphasis on measurable outcomes through comparative metrics (Callahan, 2010; Labaree, 2020). In this context, education prioritised efficiency and uniformity, often focusing on student performance and productive output rather than individualised holistic development, mirroring, in some respects, to the centralised and standardised systems seen in Italy during Maria Montessori’s early life, though driven by differing socio-economic imperatives.

Within this broader socio-educational landscape, Skinner’s work emerged in the mid-twentieth century, at a time when psychology in the USA was increasingly shaped by positivist philosophical ideals and a commitment to empirical science. The rise of Behaviourism, influenced by key psychology theorist, John B. Watson, rejected introspective approaches in favour of observable and measurable behaviour. Skinner extended these principles through his development of operant conditioning, conceptualising learning as a process shaped by environmental stimuli and reinforcement (Skinner, 1963). In contrast to approaches that viewed education as a means of fostering internal development or social transformation, such as Montessori’s outlook, Skinner’s context encouraged a perspective in which education functioned as a mechanism for behavioural regulation and optimisation (Schlinger, 2021). This reflects broader societal shifts towards productivity, efficiency, and behavioural regulation within an increasingly capitalistic, industrialised and consumer-driven American society, in which individualistic productivity became the hallmarks of a successful worker and learner.

Additionally, it is important to recognise that despite some chronological overlap, it is highly unlikely that Skinner's work was directly influenced by Montessori's theories. Differences in geographical context, language, and intellectual traditions suggest that their ideas developed independently. Montessori's theory emerged within a medically informed, and developmentally focused framework, whereas Skinner's theory was shaped by the increasing industrialisation of American society, with a growing emphasis on experimental psychology (Vargas, 2017). Although each theorist's historical contexts possessed key similarities, in which newly founded education systems strived to implement conforming authoritarian positions, each theorist developed fundamentally different epistemological outlooks regarding how learning should be understood, studied, and facilitated (Montessori, 2013; Vargas, 2017). Consequently, the contrast between these theorists can be understood not merely as a difference in pedagogical preference, but as a manifestation of two distinct ways of conceptualising knowledge, learning, and the role of education itself, reinforcing the importance of critically examining theories within their historical contexts.

Educational Theory and Practice

At the centre of the theoretical divergence between Maria Montessori and B. F. Skinner lies a fundamentally different understanding of what it means to learn. While both theorists seek to explain how knowledge and behaviour best develop, they approach this question from contrasting philosophical and scientific perspectives. Montessori's philosophy, commonly referred to as the "Montessori Method", conceptualises learning as an internally driven, developmental process, through which children actively construct knowledge through their interactions with their environment, aligning with principles later associated with the Constructivist theory of learning (Kay and Kibble, 2016). In contrast to this, Skinner conceptualises learning as a measurable change in observable behaviour, modelled and maintained through external stimuli and reinforcement, demonstrating principles associated with the Behaviourist theory of learning (Cranmore, 2022). This distinction establishes a clear conceptual divide between learning as a process of internal cognitive development and learning as a product of environmental conditioning, forming the foundation upon which their broader pedagogical approaches are built.

Concepts of Learning

The Montessori Method is characterised by her concept of the “absorbent mind”, suggesting that children possess an innate internal capacity to acquire knowledge subconsciously, especially during early developmental stages. This is further supported by her idea of “sensitive periods”, during which children are particularly receptive to specific types of learning, such as language acquisition, fine and gross motor skills, sensory refinement, and social behaviours. Montessori argued that these periods represent optimal windows for learning, during which children demonstrate heightened concentration, engagement, and responsiveness to environmental stimuli (Saha and Adhikari, 2023). Within the Montessori framework, learning is not imposed through educator-led instruction, instead emerging naturally when children are provided with environments attuned to their developmental needs. Forming a central role to this development, first-hand experience moulds educational understanding through interaction, repetition, and exploration, rather than merely passive reception. Through this, Montessori’s theory postulates learning as a process of internal development, actively constructing and supporting knowledge (Murray, *et al.*, 2017).

Contrastingly, Skinner’s Behaviourist theory rejects the notion of innate curiosity as central to the development of learning, instead heralding observable behaviour shaped by environmental conditions as the primary indicator of learning. Arguing that learning could only be understood through objective, measurable responses, he characterised a key psychological mechanism within his framework, “operant conditioning”, whereby learner behaviour is purposefully strengthened or weakened through the systematic application of targeted reinforcement and punishment (National University, 2023). Within an educational context, reinforcement may be positive, through the introduction of rewards such as praise or tangible incentives, or negative, through the removal of an aversive conditions in order to strengthen desired behaviour. Punishment, by contrast, involves the application of negative consequences or the removal of valuable privileges to reduce undesirable behaviour. Such approaches provide educators with clear,

structured methods for managing behaviour and promoting engagement (Vargas, 2017). Within this framework, learning is driven by external control, mediated by the educator, rather than internal readiness, with the environment shaping a determining role in output behaviour over time. Thus, knowledge is not constructed through individual exploration, as postulated by Montessori, but is instead reflected through the consistent production of desired, controlled behavioural outcomes (Schlinger, 2021).

Montessori and Skinner offer fundamentally contrasting conceptualisations of the nature and purpose of education itself. Montessori's Constructivist approach reflects a holistic and developmental perspective, in which education is viewed as a process of nurturing the whole child, encompassing cognitive, emotional, and social growth. In this sense, learning is not merely the acquisition of knowledge, but the development of independence, self-regulation, and a life-long disposition towards inquiry (Lillard, 2017). This positions education as a transformative process, centred on the individual learner's developmental trajectory, emphasising the importance of experiential learning and intrinsic motivation. These values are reflective of Montessori's first-hand experiences explored within her historical context. However, this perspective may be critiqued for its unrealistic idealism, as it assumes that all learners possess an inherent capacity for self-directed engagement, which may not be consistently realised in practice. Additionally, real-world limitations in scholarly provision may be unable to provide a suitable environment conducive in maximising child-led educational development (Ball, 2017).

On the other hand, Skinner's Behaviourist framework conceptualises education in more functional terms, focusing on the production of observable behavioural outcomes via quantifiable, comparative metrics in real-world circumstance. Thus, learning is defined by changes in behaviour that can be reinforced, assessed, and replicated, aligning closely with systems that prioritise efficiency, standardisation, and accountability (Schlinger, 2021). While this provides a clear and structured model for educational practice, it arguably narrows the scope of what is considered valuable learning, reducing complex cognitive and emotional processes to externally observable responses (Stewart, 2021). This distinction raises important questions regarding whether Behaviourist approaches adequately capture the complexity of learning, particularly in relation to deeper cognitive, emotional, and social understanding. By prioritising

measurable outcomes, such approaches may inadvertently prioritise performance over understanding, encouraging learners to focus on achieving correct responses rather than developing deeper conceptual knowledge (National University, 2023).

Taken together, these differences illustrate the fundamental epistemological divide between Montessori's Constructivist and Skinner's Behaviourist approaches to education. Montessori prioritises internal cognitive processes, developmental readiness, and the active construction of knowledge, whereas Skinner emphasises external control, behavioural regulation, and quantitative, measurable outcomes. Each approach mirrors the wider debate within pedagogical metatheoretical discourse, centred around the question: should learning through education prioritise processes conducive to individual internal development or the tangible means of best producing observable and standardised results within the schooling system?

Theory in Classroom Practice

During the translation of Maria Montessori's and B.F. Skinner's theories into classroom settings, their associated approaches result in markedly different models of pedagogy and learning (Stewart, 2021). Montessori-informed Constructivist practice centres on a child-led environment where learning is enabled through independent activity, structured resources, and carefully designed surroundings which support internal developmental progression. By contrast, Skinner's Behaviourist approach tends to emphasise teacher-led instruction, where learning is directed through the use of external reinforcement systems and the deliberate moulding of observable behaviour. As a result, their contrasting theories of learning are reflected in practice through two distinct classroom styles, one that prioritises learner autonomy and holistic development, and another that promotes structure, control, and quantifiable behavioural outcomes (Saha and Adhikari, 2023; Vargas, 2017).

Within a classroom context, the role of the educator differs vastly between each theoretical approach, reflecting their broader educational priorities on learning and control. Within Montessori-based settings, the educator is primarily positioned as a facilitator and observer, responsible for curating the learning environment and overseeing the independent child-led engagement with available resources. Rather than

acting as the central source of knowledge, the educator's role is to guide each child indirectly, intervening only when necessary to support progression or redirect engagement (Randolf, *et al.*, 2023). This approach reduces the explicit authority of the educator, favouring the promotion of learner autonomy and self-regulation. Contrastingly, within Skinnerian practice, the educator occupies a significantly more directive role, functioning as the sole organiser of learning through objective reinforcement systems. Here, teaching involves the deliberate shaping of behaviour through the control of available stimuli, applying rewards for desired responses, and discouraging undesirable behaviours through consequences. This positions the educator as an active regulator of classroom behaviour, maintaining structure and consistency through external management strategies. The contrast between these roles highlights a widespread point of friction in classroom practice between the fostering of child independence through guided autonomy and achieving learning outcomes through structured behavioural control.

Central to classroom practice informed by Montessori, is the concept of the “prepared environment”, which extends beyond the physical layout of the classroom to encompass a deliberately structured learning environment designed to support children's holistic developmental progression. Within this framework, the learning space itself functions as a key pedagogical tool, reducing reliance on direct educator instruction and enabling learners to engage independently with carefully selected materials. Classrooms are typically organised to promote accessibility, creativity, and autonomy, incorporating child-sized furniture, clearly arranged resources, and a predictable structure that allows children to navigate learning activities with self-confidence. In primary school practice, this is reflected through the use of hands-on, developmentally appropriate materials, such as phonics flashcards, counting apparatuses, and practical life activities, including sorting, building, and role-play. These tasks are often designed to be self-correcting, permitting learners to identify and amend errors independent of educator correction, thereby reinforcing understanding through repetition and exploration. Such an approach supports a progression from physical manipulation to more abstract forms of thinking, aligning with Montessori's emphasis on experiential learning (Montessori, 2013). By engaging directly with these materials, learners are able to actively construct knowledge,

fostering concentration, independence, and a deeper level of conceptual understanding that might be achieved through more heavily directed methods, like those found aligning with Behaviourist principles (Coe, *et al.*, 2014).

Despite its strengths, the practical implementation of Montessori's holistic, child-centred approaches within mainstream primary education presents notable challenges. The requirement for specialised materials, smaller class sizes, and highly trained practitioners may limit its feasibility within publicly funded education systems. Moreover, the emphasis on learner autonomy can be considered a potential limitation. While self-directed learning may foster intrinsic motivation and a sense of agency, not all learners are equally equipped to thrive in environments with minimal adult guidance (Brunold-Conesa, 2022). For example, children with additional learning needs may require enhanced structural support, guidance, and instruction than what is typically offered by Montessori's approaches. This raises relevant questions regarding the inclusivity of the approach within diverse educational contexts. Furthermore, within contemporary educational contexts, Montessori principles may require additional stages of adaptation, whereby elements of structured guidance are integrated to ensure that all learners are adequately supported. Such concerns are especially pertinent within the Curriculum for Wales (2022), which emphasises progression, equity, and the need to support all learners in achieving their potential. Within such frameworks, educators are required to balance learner independence with structured guidance, highlighting potential conflict between Montessori's developmental ideals and contemporary expectations of inclusive practice.

Conversely to Montessori's Constructivist approach, the classroom practice informed by B. F. Skinner is grounded in the application of Behaviourist principles, structuring learning and behaviour management around operant conditioning. Within this approach, teaching is typically organised around clearly defined learning objectives, with learning broken down into manageable steps that can be systematically reinforced. Desired behaviours are tangibly encouraged in the classroom through active positive reinforcement, such as verbal praise or material rewards, while undesirable behaviours may be reduced through the application of consequences or the removal of existing privileges, such as detention. This creates a highly structured and predictable classroom environment in which expectations are explicit, and progress can be readily monitored

and assessed. Skinner's approach aligns closely with the traditional expectations of contemporary education systems, prioritising standardisation, assessment, and accountability, enabling educators to monitor performance effectively, ensuring consistent progression across learners (Vargas, 2017). Behaviourist strategies are often effective in establishing scholarly routines, maintaining classroom order, and promoting engagement with set tasks, particularly in larger or more diverse classroom settings. However, the heavy focus on observable outcomes means that learning is frequently equated with behavioural compliance, potentially limiting opportunities for deeper conceptual understanding, and long term cognitive, internal development. As a result, while Skinnerian practice offers a clear framework for efficient classroom management and instruction, it may also risk narrowing the scope of learning to what can externally quantified and reinforced (Schlinger, 2021).

An additional key point of tension between Montessori and Skinner's principles lies in their conceptualisation of educational motivation. Montessori's Constructivist approach is grounded in the belief that children are inherently motivated to learn, driven by curiosity and a natural desire for learning proficiency. This intrinsic motivation is fostered through catered opportunities of choice, exploration, and meaningful engagement with learning materials and environments (Murray, et al., 2023). In contrast, Skinner's Behaviourist approach relies on extrinsic motivation, using reinforcement to shape behaviour. While such rigid strategies can produce immediate behavioural compliance, they may also risk fostering dependency on external rewards. Research has suggested that the use of expected material rewards may diminish intrinsic motivation over time, raising concerns regarding the sustainability of engagement within Behaviourist frameworks (Ryan and Deci, 2009; Hidi, et al., 2025). Moreover, identifying rewards for each individual learner can be complex, as children possess varied interests, motivations, and developmental needs. A reward that may be effective for one child may hold little influence for another, reducing the overall consistency and impact of reinforcement strategies. Additionally, for some learners, particularly those with additional learning needs, the use of extrinsic rewards may reduce intrinsic motivation (Morgan, 1997; Ching, 2012). This presents a significant challenge for educators, who must carefully balance the use of reinforcement to support engagement without fostering dependency or diminishing learners' internal

motivation. In this sense, while reinforcement can be a useful tool for behaviour management, its application requires nuanced judgement and may not be universally effective across all educational contexts (Coe, *et al.*, 2014). Consequently, the contrast between intrinsic and extrinsic motivation highlights an additional underlying conflict between fostering independent engagement and the management of behaviour through external control.

The methodological foundations underpinning both theorists further illuminate divergence. Montessori's approach is rooted in sustained observable study, generating rich, context-sensitive insights into children's developmental behaviours (Montessori, 2013). However, the absence of controlled empirical, quantitative validation raises concerns regarding the generalisability and reliability of her claims across diverse educational contexts. By contrast, through controlled studies of operant conditioning, Skinner's work is grounded in experimental methodology, emphasising the replicability and scientific credibility of his findings. This highlights the extent to which Skinner's work represents a structured scientific paradigm, encompassing theoretical principles, experimental validation, and applied practice, positioning Behaviourism as a comprehensive model for the analysis of observable behaviour (Schlinger, 2021; Vargas, 2017). Nevertheless, such methodological rigour is not without limitation; the highly controlled conditions under which Behaviourist principles were established risk abstracting learning from the complex social and cognitive developmental realities of classroom environments. Alongside this, it is important to consider ethical factors when conducting such research, particularly where behaviour is manipulated through reinforcement and punishment, as this raises questions regarding learner autonomy, agency, and consent within educational contexts.

The feasibility of implementation further exposes tensions between the two approaches. Montessori advocated for mixed-age groupings, based on the belief that children learn effectively through social interaction, peer modelling, and collaborative engagement. Within such environments, younger learners may benefit from observing more advanced peers, while older learners consolidate their understanding through supporting others, thereby embedding their own knowledge (Cronin, 2019). This approach reflects Montessori's broader commitment to naturalistic learning and developmental continuity.

However, within a primary education context, implementing mixed-aged groupings raises several practical challenges. Modern education systems across the UK are heavily shaped by curriculum frameworks, standardised assessments, and accountability measures, which place considerable pressure on both educators and pupils to meet age-related expectations (Welsh Government, 2021; Blynznyuk, *et al.*, 2025). Within such systems, educators are required to ensure measurable progression against predefined outcomes, leaving limited flexibility to accommodate the fluid and individualised pacing that the Montessori Method promotes. Furthermore, social factors within school environments, including peer comparison, competition, and the potential for bullying, may be exacerbated in mixed-age settings where developmental differences are more visible. These realities highlight the conflict between Montessori's developmental ideals and the real-world institutional constraints of contemporary schooling, where flexibility and individual pacing are often sidelined in favour of standardised expectations (Cronin, 2019). Conversely, Skinner's Behaviourist framework aligns more readily with these structured systems, as it supports clearly defined objectives, measurable outcomes, and consistent behaviour management through reinforcement strategies (Ball, 2021). This enables educators to respond effectively to institutional pressures by maintaining order and ensuring progress.

Impact Review

The impact of Maria Montessori and B. F. Skinner on contemporary educational practice is significant, yet uneven in its application (Cranmore, 2022; Stewart, *et al.*, 2024). Montessori's child-centred philosophy has had a profound influence on early years education, particularly in shaping approaches that emphasise self-directed learning, experiential engagement, and the importance of the learning environment. Elements of her practice, such as the use of hands-on practical resources and the promotion of learner autonomy, can be observed within modern primary classrooms. However, despite this conceptual influence, the full implementation of the Montessori Method remains relatively limited within mainstream education institutions, largely due to structural constraints such as curriculum requirements and standardised quantitative assessment (Stewart, *et al.*, 2024).

A key aspect of Montessori's continuous influence is the reconceptualization of the educator's role, marking a significant departure from traditional models of instruction. Increasingly, educators are being positioned as facilitators of learning rather than authoritative figures who are responsible for the direct transmission of knowledge. This shift exhibits a broader pedagogical movement towards learner-centred education (Blyznyuk, et al., 2025; Kay and Kibble, 2016). Notably, this transformation is not confined to classroom practice but is also evident within higher education, particularly in the training and professional development of educators. Many university-level education programmes now prioritise reflective practice, critical pedagogy, and child-centred approaches, encouraging trainee teachers to adopt facilitative roles that support rather than simply direct learning (Fernández-Moya, *et al.*, 2020). This demonstrates the extent to which Montessori's theoretical contributions have permeated the epistemological foundations of education as a discipline, providing vital insight into how teaching is enacted, conceptualised, and taught to future practitioners (Murray, et al., 2023; Lillard, 2017). In addition to influencing mainstream practice, Montessori's theory has led to the establishment of over 22,000 dedicated Montessori schools and settings, worldwide, which represent the most authentic implementation of her principles. These settings prioritise key features such as uninterrupted child-led learning, multi-age groupings, and meticulously designed enriching learning environments. However, while Montessori's influence on early years pedagogy is profound, its impact becomes less pronounced in later stages of education. Within primary and secondary systems, the demands of curriculum standardisation, assessment, and expectations limit the extent to which child-led approaches can be sustained (Brunold-Conesa, 2022). Consequently, Montessori's legacy can be understood as conceptually influential but only partially realised in practice, with many of her principles adapted rather than fully implemented within contemporary education systems (Randolf, *et al.*, 2023).

In contrast, the impact of B.F. Skinner's Behaviourist theory is more explicitly and consistently embedded within the everyday practice of contemporary primary education. His principles of operant conditioning have fundamentally shaped approaches to behaviour management and classroom organisation on a global scale (Doroudi, 2021). Systems such as reward charts, praise-based feedback, and sanctions are widely utilised

to promote desirable behaviours and regulate classroom environments. The prevalence of such strategies reflects their practical utility within structured educational settings, where maintaining order and ensuring engagement are prioritised (Cranmore, 2022). Opposed to Montessori's approach, which requires significant adaptation to align with institutional frameworks, Skinner's model integrates seamlessly with preestablished systems that prioritise efficiency and measurable outcomes. Beyond behaviour management, Skinner's influence extends into instructional design through the concept of programmed learning, where knowledge is broken down into incremental steps supported by immediate feedback. This approach is evident in contemporary pedagogical practices such as systematic phonics instruction, scaffolded learning tasks, and digital learning platforms that utilise reward-based progression systems. Such applications demonstrate the enduring relevance of Behaviourist principles in shaping how behaviour influences the construction and delivery of learning in education settings (Zhou and Brown, 2015). Furthermore, Behaviourist strategies are often formalised within whole-school policies ensuring consistency in expectations and responses to behaviour across staff and settings (Senedd Research, 2025). This consistency is particularly valued within primary education, where clear boundaries and predictable consequences are considered essential for creating safe and productive learning environments. As such, Skinner's influence extends beyond classroom practice to shape institutional approaches to behaviour management (Cranmore, 2022).

Critical Reflections

The comparative evaluation of both Montessori and Skinner's learning theories highlight a clear disparity between theoretical value and practical implementation within contemporary education (Bell, 2021; Singh, *et al.*, 2020). Although both theorists have significantly shaped educational thought, it is evident that behaviourist principles, particularly those associated with reinforcement and behaviour management are more visibly embedded within everyday classroom practice. This is largely due to their alignment with structured curricula, measurable outcomes, and the need for effective classroom management within increasingly accountable education systems. However, this observation should not be interpreted as evidence of pedagogical superiority. Rather,

it reflects the extent to which educational systems are shaped by political priorities and economic constraints (Bell, 2021).

For example, within Wales, educational policy and funding allocation play a decisive role in determining which pedagogical approaches are feasible in tangible practice. Systems of accountability, including assessment frameworks and performance measures, require educators to demonstrate quantifiable progress, often within limited timeframes. Such conditions inherently favour Behaviourist approaches aligned with Skinner's emphasis on observable behaviour and reinforcement, as these can be readily measured, managed, documented, and compared (Vargas, 2017). In contrast, Montessori's philosophy, which prioritises individual pacing, intrinsic motivation, and holistic development, resists such quantification. The outcomes of Montessori education, including independence, creativity, and self-regulation, are less easily captured through standardised assessment, rendering them less visible, and therefore less valued within current systematic policy frameworks (Education Endowment Foundation, 2019).

Moreover, the implementation of Montessori practice is significantly limited due to issues such as funding and resource allocation. The development of a fully realised Montessori environment requires substantial investment in specialised materials, reduced pupil-to-teacher ratios, and extensive practitioner training. Within a publicly funded education system operating under financial and structural constraints, such provision is often difficult to implement at scale (Fleming, *et al.*, 2024).

Therefore, it can be argued that Montessori's theory is ultimately more beneficial for children's long-term holistic development (Lillard, 2017; Randolph, *et al.*, 2023); however, its limited presence within contemporary primary schools reflects a broader tension between utopian-esque educational ideals and current, real-world systemic constraints. Thus, the fact of which pedagogical approach is superior in practice depends on the epistemological priorities in question: should society favour educational factors best suited for the holistic individual development of each child, or, for the sake of mass-education, must society settle for more structured, rigid control over learning? This suggests that current widespread pedagogical practice is shaped less by what is most beneficial for learners, and more by what is financially, politically, and materially feasible within existing structures (Ball, 2017).

In conclusion, while both Maria Montessori and B. F. Skinner have made significant contributions to educational theory, their relevance within contemporary education reveals a clear disparity between pedagogical value and practical implementation. Behaviourist approaches remain dominant due to their alignment with accountability frameworks, measurable outcomes, and the practical demands of large-scale classroom management. In contrast, Montessori's emphasis on intrinsic motivation, autonomy, and holistic development arguably offers greater long-term benefits for learners, particularly in fostering independence and deeper engagement with learning. However, the limited implementation of Montessori principles reflects the structural constraints of modern education systems, where funding, policy priorities, and institutional expectations ultimately shape pedagogical practice. Consequently, this analysis demonstrates that educational approaches are not adopted solely on the basis of effectiveness but are highly influenced by broader political and material factors, highlighting the ongoing tensions between educational ideals and systemic realities.

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