Blockchain, Artificial Intelligence, and Future Research

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BLOCKCHAIN, ARTIFICIAL INTELLIGENCE, AND FUTURE RESEARCH

ISSN: 3089-6975

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To cite this article. O. Halchenko, "Introducing Bonsai Thinking: The Science of Learning, Unlearning, and Relearning for the Age of Continuous Adaptation," *Blockchain, Artif. Intell. Futur. Res.*, vol. 1, no. 2, pp. 116–133, 2025.
DOI: https://doi.org/10.70211/bafr.v1i2.313

OPEN ACCESS

https://doi.org/10.70211/bafr.v1i2.313

Blockchain, Artificial Intelligence, and Future Research Vol 1 No 2 (2025)

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Research Article

Introducing Bonsai Thinking: The Science of Learning, Unlearning, and Relearning for the Age of Continuous Adaptation

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Received: 25 August 2025	Revised: 8 September 2025	Accepted: 14 November 2025	Online: 30 November 2025

Abstract

This study introduces the science of learning, unlearning, and relearning to explore the processes of learning, unlearning, and relearning within organisational contexts, offering a novel conceptual framework of bonsai thinking. The framework emphasises the cyclical nature of these processes, integrating cognitive, affective, and conative dimensions to foster continuous organisational development. This paper applies the System Test to investigate the three system archetypes that build and evaluate my definition of a learning-unlearning-relearning cycle – bonsai thinking. Using a metaphorical approach for theory-building, I introduce a discipline of bonsai thinking through its purpose, which implies that everything in nature is never complete (life-long learning), the need for creating meaningful controlled environments (life-wide learning), and as the art of bonsai involves shaping and training a tree to achieve a specific aesthetic, the art of learning to achieve a specific purpose (as I propose calling it life-deep learning). Through its elements, I suggest a new definition of a learning cycle: pruning for unlearning, wiring and positioning for relearning, and then watering and fertilising for learning. And through the interconnections, I base my approach to learning, unlearning, and relearning on the Trilogy of Mind — cognition, affection, conation, and on what I call the Trilogy of Education — neuroscience, happiness studies, and future studies to highlight the interconnectedness of thinking, feeling, and acting and offer a holistic approach to organisational learning. This study further discusses the practical implications of the framework for organisational development and highlights the need for future empirical research to validate the proposed model. The contribution of this research lies in introducing a novel 3D approach to organisational learning that integrates all three dimensions of human engagement, offering new insights into how organisations can effectively navigate continuous change and foster long-term growth.

Keywords: Organisational Learning; Bonsai Thinking; Life-Long Learning; Life-Deep Learning, Life-Wide Learning, Learning-Unlearning-Relearning Cycle.

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INTRODUCTION

"The illiterate of the future are not those who cannot read or write but those who cannot learn, unlearn, and relearn."

Alvin Toffler, American futurist

In his renowned book Future Shock, American futurist Alvin Toffler [1] cites the no less well-known psychologist Herbert Gerjuoy, who argued that the new education must teach individual how to classify and reclassify information, evaluate its veracity, change categories, when necessary, move from the concrete to the abstract and back, and look at problems from a new direction — how to teach himself. The author builds on Gerjuoy's thoughts and proposes a strategy to enhance human adaptability, which involves instructing students how to learn, unlearn, and relearn, calling it a new, powerful dimension that should be added to education. Later, Toffler's ideas got summarised and became a saying — "The illiterate of the future are not those who cannot read or write but those who cannot learn, unlearn, and relearn." The words of Alvin Toffler have proven prophetic in the AI era, as knowledge and skills quickly become outdated and irrelevant. Moreover, failure to unlearn and relearn can result in employees losing their jobs in a changing employment environment. The rapid evolution of working tools and methods results in knowledge obsolescence; therefore, a paradigm shift in education is required. Putting 'learning how to learn' at the centre of educational reform will have a significant impact on wellbeing and productivity [2], [3]. In addition, as global economies place education at the heart of economic prosperity, learning to learn (L2L) was identified as the most important key competence for prosperity in the knowledge society [3].

Contemporary multidisciplinary research also supports this claim. Recent reviews and meta-analyses [4], [5] show that metacognitive skills allow individuals to adapt to changes. Also, research on cognition and learning [6], [7] demonstrates that understanding is embodied and that we are constantly learning from our environments, experiences, culture, and contexts; and that changes in our values drive our thinking for learning. However, in a world where education systems and organisational cultures still prioritise outcomes — scores and conventional measures over creativity and innovation, there is no room for teaching "learning how to learn" as a skill because learning has lost its real purpose. Paradoxically, today's world demands lifelong learning and innovation, as they are requirements for flourishing at the personal and organisational levels.

Research Gap and Rationale

Practitioners from various fields emphasise the importance of learning, unlearning, and relearning to overcome the barriers that prevent new, more up-to-date practices from penetrating their fields [8], [9], [10]. In their paper about paediatric anaesthesia, Baker and Greif [8] discuss the importance of learning, unlearning, and relearning in paediatric airway management. The authors highlight the importance of assimilating new knowledge and moving away from existing paediatric airway competencies, which have proven ineffective but are unfortunately repeated by doctors and often result in malpractice. They argue that despite available research, practice guidelines, and recommendations on new airway management, the medical education system fails to teach doctors how to learn, unlearn, and relearn, which is crucial when they go into their careers after graduation. Even though the lives of children depend on the doctors' ability to learn, unlearn, and relearn, there is a huge research gap in terms of theorising and systematising learning, unlearning, and relearning teaching practices: despite the evidence of learning, unlearning, and relearning in pedagogics, the

study that utilised content semantic analysis and machine based analysis of learning, unlearning, and relearning markers in 432 peer-reviewed papers, revealed the shortage of evidence on unlearning and relearning in curriculum development and research [10]. Since the lack of unlearning and relearning practices in curricula impedes the ability of many disciplines to generate and spread new knowledge, it reduces the chances of many to stay relevant in and beneficial for society, as well as remain competitive in the knowledge economy world.

Irrespective of the success of organisational learning theories and experiential learning models [11], [12], [13] in providing fundamental understanding, they do not address the multidimensionality of learning (life-long, life-deep, life-wide) and the dynamic interplay between learning, unlearning, and relearning required to foster innovation in a rapidly changing organisational context. In the seminal works of Hedberg [14] and Schein [15] on the unlearning in organisations, environmental and values-based approaches to learning were underexplored and remain underutilised in contemporary research and practice. In addition, the theoretical grounding of learning as a cycle in systems thinking [12] and the foundations of unlearning are at a premature level in the current practice.

This conceptual research addresses these gaps by introducing a three-dimensional approach to learning: such dimensions of learning as life-long learning (learning), life-deep learning (unlearning), and life-wide learning (relearning), and aims to develop a framework to support learning, unlearning, and relearning as a cycle. This proposed framework synthesises insights from educational neuroscience [5], happiness studies [16], [17], [18], and future studies [19] to help organisations understand the multi-level dynamics that form a learning-unlearning-relearning cycle. Therefore, allow learning, unlearning, and relearning in the organisational context, as well as create a managerially relevant theory of (cultivating) learning, unlearning, and relearning by introducing a discipline of bonsai thinking: (a) outline the purpose of bonsai thinking in the context of learning, unlearning, and relearning — for life-long learning, life-deep learning, and life-wide learning; (b) identify, explore and systematise the elements of bonsai thinking for learning, unlearning and relearning, such as pruning for unlearning, positioning and wiring for relearning, watering and firtilising for learning; (c) explore interconnections between learning and cognition, unlearning and affection, relearning and conation; (d) explore interconnections between learning and neuroscience, unlearning and the science of happiness, relearning and future studies.

Research Objectives and Questions

The primary objective is to develop and validate a conceptual framework of *bonsai thinking* that sheds light on the multi-level dynamics that form a learning-unlearning-relearning cycle in an organisational context.

The secondary objective is to shape a new discourse around learning how to learn, construct and propose new narratives, as well as create new chronotopes, as Bakhtin [20] called time/space interactions, for the 21st century learning. Since we are currently living in the modern era, and this period of history is characterised by significant advancements in technology, culture, and lifestyle that impact how we work and how we learn, the way we approach education in organisations should reflect deep space-time changes.

Specific Research Questions:

RQ1: How can the purpose of bonsai thinking be communicated to support life-long, life-deep, and life-wide learning?

RQ2: What are the elements of bonsai thinking that enable learning (watering, fertilising), unlearning (pruning), and relearning (positioning, wiring)?

RQ3: How do interrelationships between learning-cognition, unlearning-affection, and relearning-conation operate within this framework?

RQ4: How can the proposed Trilogy of Education (neuroscience, happiness studies, and future studies) be incorporated with the process of learning in organisations?

Theoretical Contribution and Significance

I expect this study to make significant theoretical contributions to the fields of education, business, management studies, and political economy, as well as urge researchers and practitioners to bolster efforts in achieving the development of cutting-edge research, pedagogy, and curricula that will enable individuals and organisations to constantly update their knowledge and be equally effective in familiar and unpredictable settings. Moreover, I utilise *the metaphor of bonsai* as a theory-constitutive tool to develop this new theory and express the complexity of a learning-unlearning-relearning cycle in accessible terms.

This study also aims to create a holistic framework by conducting an interdisciplinary synthesis that connects neuroscience, happiness, and future studies, thereby addressing cognitive, affective, and conative dimensions simultaneously, and moving beyond the prevalent focus on cognition alone. The Bonsai Theory of Learning, Unlearning, and Relearning responds to a primary call of science to create practically useful models of the world that are also broad enough to cover many different actual systems.

METHODOLOGY

Since the cycle of learning is a goal-oriented system [21], a systems thinking approach is required to analyse learning, unlearning, and relearning, and provide a concise overview of how such features of a system as purpose, elements, and interconnections explain the phenomenon of bonsai thinking and its applications to learning, unlearning, and relearning. Therefore, I utilise a System Test (see Figure 1) to measure whether a discipline of bonsai thinking that I propose can define the main concept and proposition of a learning-unlearning-relearning cycle. The System Test provides a structural framework for validating bonsai thinking as a system by exploring three core system archetypes of purpose, elements, and interconnections; however, future empirical validation through intervention research is required for this definition to be considered complete. By its design, this is a conceptual framework development paper, not an empirical study, and thus, this particular research intends to develop a new educational theory through systemic conceptual analysis and metaphor-based reasoning [22], [23]. Based on Jaakkola's [23] categorisation of conceptual research papers, this paper uses a theory synthesis approach, integrating already existing theoretical standpoints from multiple disciplines into a novel framework. This framework's validity and reliability are based on literature triangulation, System Test validation, and conceptual value, which differs from the empirical research reliability and validity established on real-world observations and experiments.

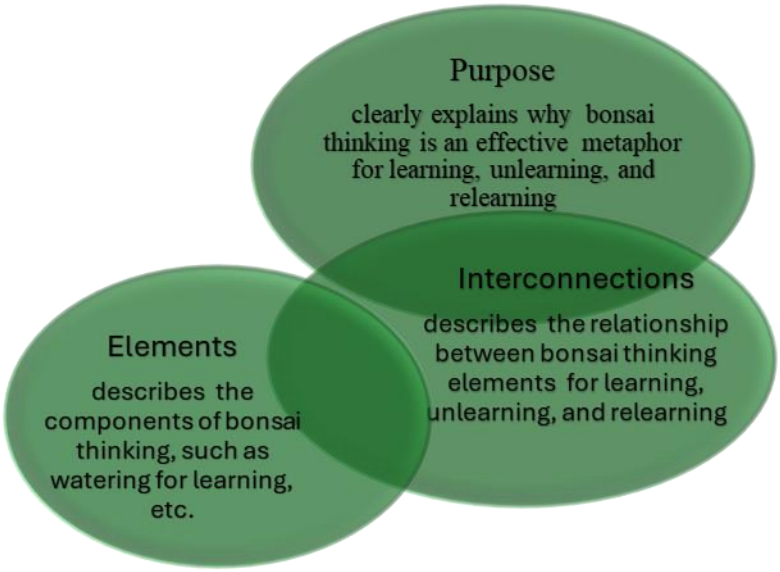

Figure 1. The System Test [21]

1. Function, purpose, or goal. According to Arnold and Wade [21], it should describe the main purpose of a system or discipline so that it can be clearly understood and become a standard that can be applied to everyday life.
2. Elements. There should be certain characteristics of a system [21].
3. Interconnections. The elements should be interconnected and relate to each other [21]. They can combine or bond to form compounds, like in the periodic table, for instance.

CONCEPTUAL FINDINGS AND DISCUSSION

The 3D Approach to Learning

The success of any individual and any organisation in today's world is dependent on their ability to learn, unlearn, and relearn. To introduce *bonsai thinking* to cultivate a learning-unlearning-relearning mindset, I approach the science of learning as a three-dimensional process and utilise a 3D Model: 1D length, 2D depth, 3D width (see Figure 2). The 3D modeling is useful in creating and introducing the entire scene of what organisational learning is, and how to approach learning to stay up to date in a constantly changing world. The 3D visualisation not only revolutionised the way we can accurately represent a product's design and communicate an idea even before it is physically available, but also has a huge potential to revolutionise the way we approach education if we look at learning as a three-dimensional process.

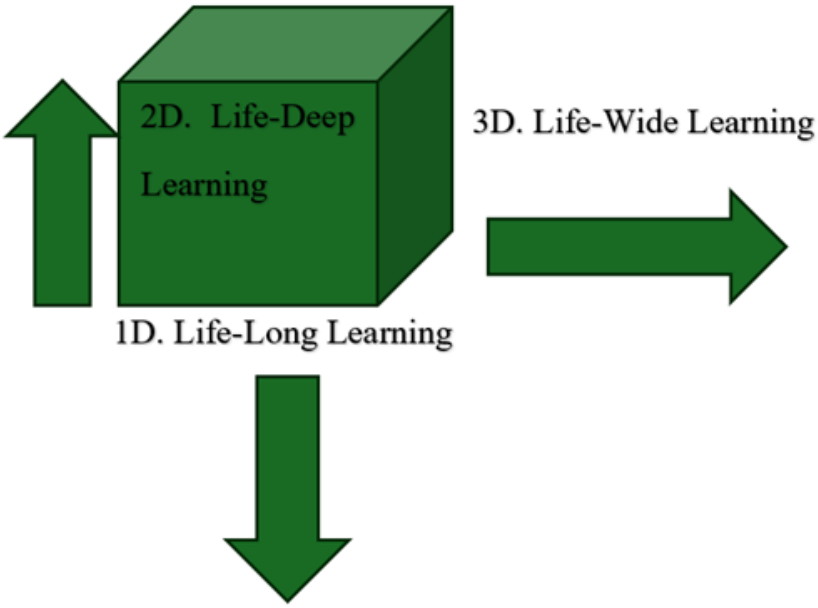

Figure 2. The Model of Three-Dimensional Learning

1D. Life-Long Learning

In essence, to learn through life means to be committed to lifetime development and growth within one's context — life project or organisation's mission. Like bonsai, which literally means "planted in the container" in Japanese and is a representation of a full-sized tree in a pot, learners are placed within their learning contexts. Firstly, the learners are placed in the context of their brains: their genetic make-up and its interaction with the environment — phenotype, which affects learning [24]. Phenotypes are a range of observable traits, such as cognitive abilities, metacognitive abilities, and social-emotional characteristics. In organisations, their "phenotype" is the interaction of mission, vision ("DNA"), and overall emotional climate and social dynamics within a workplace. Understanding the importance of context — "the phenotypes", allows for support and action plans personalisation, which makes the bonsai metaphor such a useful tool for facilitating sensemaking to explain the process of learning. Moreover, learning directly depends on the context, as it takes the form of a circumstance in which it is placed. The situation and our perception of it define its value. The fact that learning has no value in the absence of context makes the metaphor of bonsai — "planted in the pot" a relevant theory-building tool to conceptualise and support the process of learning, unlearning, and relearning.

In addition, learning is an ongoing process that is never complete, which is why we now refer to it as lifelong learning. Similarly, cultivation of bonsai requires shaping and nurturing a tree for a lifetime; some trees are even passed from generation to generation [25]. The learners of today live and work in a changing world, which requires them to be always in good shape and fit into their "pots" to thrive in a shifting landscape. Therefore, the first dimension of (organisational) learning is 1D —length, which is characterised by the process of turning schemata (general knowledge, basic units of understanding) into mathemata (personal, lived, contextual knowledge). This translates into lifelong learning in educational strategy.

2D. Life-Deep Learning

For a long life, the trees require ongoing pruning of branches and roots to help them fit into their pots and maintain the aesthetics valued by the bonsai master [25], [26]. Like bonsai is the art of achieving a specific aesthetic through cultivation, learning is a way of achieving a specific purpose at work and in life. The depth — 2D of learning is the vertical accumulation of knowledge, and what Araki [27] calls the sophistication of one's knowledge or mathemata. This also refers to Argyris and Schön's [11] concept of double-loop learning, which is presented as necessary for practitioners to question their assumptions and mental models. Following this, I introduce unlearning as the process of the sophistication of personal knowledge gained through deliberate mental effort. For instance, acknowledging that the old mindset became irrelevant, knowledge, habits, or skills do not serve the purpose anymore, is a deliberate reflection and critical examination. Like bonsai trees are pruned by the master to achieve a desired aesthetic and character, learners need to deepen their understanding of a certain domain by unlearning what has become obsolete due to advancements and changes in values, and this is what I suggest calling life-deep learning.

3D. Life-Wide Learning

Bonsai trees live even longer than normal trees due to protection from winds, lightning strikes, and any other environmental stresses [25], [26]. The longevity of bonsai is first and foremost due to its controlled environment. Learners are also more productive if they are placed in meaningful learning environments. Meaningful environments are the environments that promote life-wide learning, which is the width of the 3D. Life-wide learning emphasises the importance of learning from life itself, which I propose calling relearning. Relearning requires learners to decode (understand, perceive) and encode (express, act) meaning from and to the environments they interact with based on "stopping for knowledge" and "moving for knowledge" hypotheses [28].

Cognitive science research has proved that understanding is embodied and that we learn due to ongoing interaction with physical and cultural environments [29]. Therefore, the schemata building process, or the process of building knowledge passively, informally, or through a quasi-automatic process, I suggest defining as relearning. It is important to note that relearning is not about acquiring knowledge or skills that were previously forgotten, which would be better described as "learning again" since it implies transforming schemata into mathemata and requires an active, deliberate mental effort. On the contrary, relearning is predominantly about gaining new perspectives and seeing things from a different angle, potentially leading to new insights or understandings: a bonsai master positions and wires her tree to create a special, controlled environment for development and growth. Similarly, organisations are encouraged to create thought-provoking environments that provide qualitative, sensorial, and meaningful experiences, motivating the search for new insights in every repeat encounter. Moreover, even the technical performance of the premises in the organisation can be poetic and provide so-called affordances. Affordances, as described in neuroscience research, are what a certain environment enables or affords. For instance, a cup is not just an object, but it also allows drinking [30], [31].

Testing the Definition of Bonsai Thinking

Purpose

Bonsai thinking can be defined as the science of learning, unlearning, and relearning, since, as a metaphor, it helps to develop an increasingly deep understanding of the underlying processes. Bonsai thinking would be an effective metaphor that clearly explains the cyclical nature of learning, unlearning, and relearning by shedding light on the three dimensions of learning. 1. *Life-long learning*, which is emphasised by the context principle: as bonsai is "planted in the pot", so is the learner "planted" in the context of their genetic and environmental factors, as well as organisational factors affecting life-long learning. Like bonsai, which is a mini representation of a mature tree, and thus requires ongoing care and shaping over a lifetime to look like one, *learning* is a never-ending process due to the constant expansion of knowledge and contextual factors. 2. *Life-deep learning,* which explains the nature of purpose in learning, and the importance of *unlearning*, or in other words, deepening one's understanding to achieve long-term goals and aspirations, is reflected in the aesthetic principles that make the metaphor of bonsai relevant. Any species of tree can be grown as a bonsai if certain techniques preventing the tree from being too tall or too heavy, such as pruning, are applied. As every master shapes a tree in accordance with her desired design, one *unlearns* whatever does not serve their purpose anymore. 3. *Life-wide learning* highlights the importance of creating meaningful environments that provoke fresh perspective development and novel understandings of something that is already known. This is the stage of *relearning,* and it is well described by the importance of the controlled environment for bonsai longevity. The trees in the wild are not as protected from weather conditions as bonsai trees, and therefore, live less than their counterparts. Positioning the trees and wiring them to help them *relearn* to achieve longevity is a good analogy for understanding life-wide learning.

Overall, bonsai thinking clearly defines the function, purpose, or goal [21] of learning, unlearning, and relearning that relates to everyday life organisational learning, also known as formal, non-formal, and informal learning; and therefore, passes the first component of the System Test.

Elements

Learning: Watering and Fertilising

Five main elements make up bonsai thinking and are necessary for bonsai cultivation. These elements serve as powerful metaphors to develop and frame the bonsai theory of learning, unlearning, and relearning. To organise the discourse around learning, unlearning, and relearning, I translate the five main principles of bonsai cultivation into the five main principles of learning, unlearning, and relearning: watering, fertilising, pruning, wiring, and positioning (see Figure 3). Watering and fertilising are crucial for bonsai growth because bonsai trees are planted in small pots with minimal space for water and nutrient reserves [26]. Through the metaphor of watering and fertilising, I introduce neuroscience interventions to enhance learning at an organisational level. (see Figure 4) To bring in neuroscience practically and cost-effectively, researchers suggest teaching self-regulated learning and meta-skills: metacognition and meta-motivation [32], [4]. By developing meta-skills, employees improve emotional regulation and cognition, which positively affect learning outcomes [32]. Such metacognitive competences as brain health optimisation, executive functioning, and meta-motivation reflect the connection between neuroscience and education, which are directly linked through brain optimisation and indirectly linked through psychology [5], [32].

(see Figure 5) Metacognitive competences are crucial for employees to support them in managing and directing their behaviour to achieve desired progress, as well as achieve an optimal learning state at work. Therefore, I introduce metacognition as the watering element of bonsai thinking due to its importance for sustaining learning and supporting personal and professional development, just as water is essential for the life of bonsai (see Figure 4). I introduce meta-motivation as fertilising (see Figure 4) to draw an analogy that such meta-motivational strategies as growth mindset, attention regulation, and delayed gratification are crucial for learning in a restricted organisational environment, as a fertiliser is crucial for replenishing bonsai soil's nutrient content because its root systems are restricted within a small pot [26].

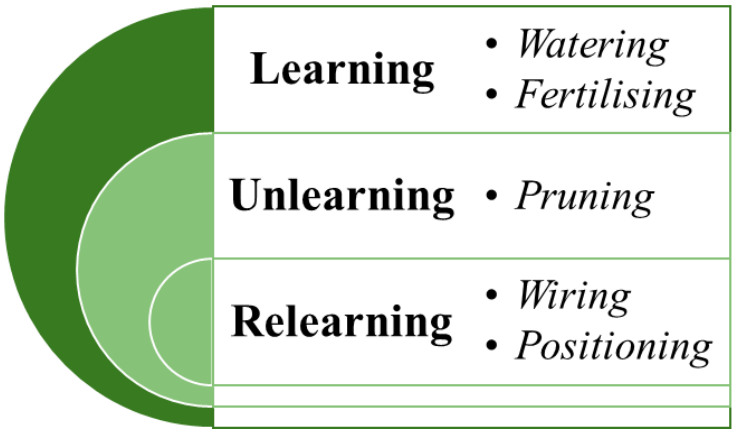

Figure 3. Elements of Bonsai Thinking for Learning

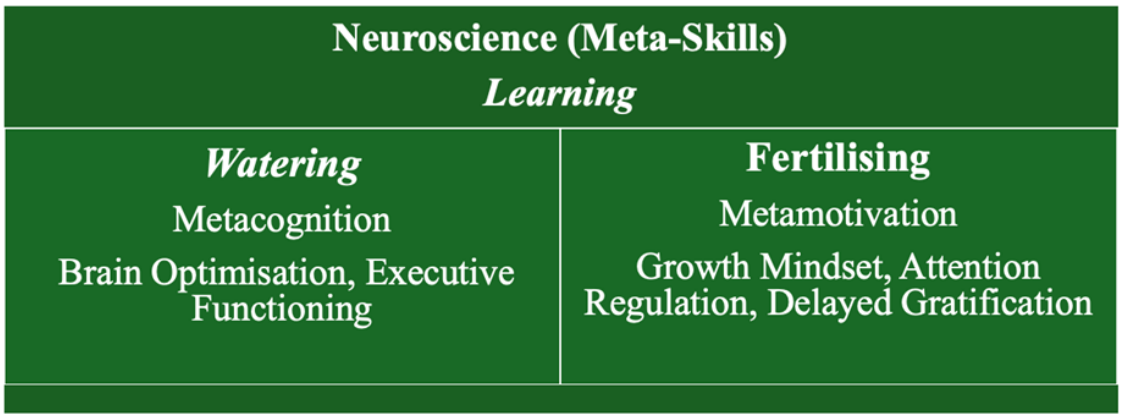

Figure 4. Neuroscience Interventions to Facilitate Learning

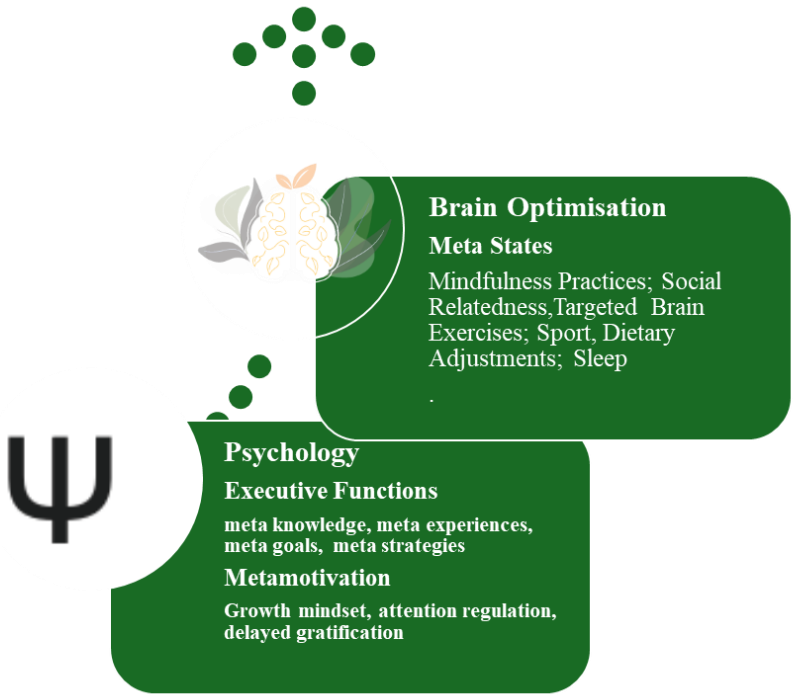

Figure 5. The Link between Neuroscience and Education

Unlearning: Pruning

In nature, trees grow with apical dominance, which is characterised by the central stem growing more dominantly than the side stems. This happens because the trees need to grow higher, not to be overshadowed by bigger trees [26]. Competitive pressure to reach sunlight needed for photosynthesis is a primary driver for growth in a world of trees. Likewise, in the corporate world, continuous professional development has become a means to reach higher altitudes to experience less competition and better sunlight. However, this growth upwards might also mean sacrificing growth with depth. On the contrary, bonsai aesthetics is heavily reliant on pruning to counter the effects of apical dominance and maintain the desired shape [25], [26]. As pruning is used to facilitate and enhance the chosen aesthetic of bonsai, it can also serve as a metaphor for unlearning as a means to facilitate and enhance the specific goal of an organisation and an individual within the organisation. Through the pruning metaphor, I introduce happiness studies interventions (see Figure 6) to help maintain control over the growth and development in the organisation. Happiness studies, or the science of wellbeing, explore how individual wellbeing impacts productivity and overall success of an organisation [18], [33]. Drawing on Ryan and Deci's [16] Self-Determination Theory, I introduce unlearning as a means to achieve hedonia, which is "happiness at work" — this includes unlearning knowledge, practices, habits, and behaviors hindering a supportive work culture, psychological safety, feelings of joy, and satisfaction related to the subjective well-being of the employees. (see Figure 7)

Additionally, unlearning achieves eudaimonia, which is happiness as a means or "happiness for work" — this involves unlearning even best practices that go against the objective wellbeing of the employees, such as job satisfaction from meaningful and purposeful work [17]. (see Figure 7) Exploring the nuances and complexities to gain a deeper understanding of happiness as a pathway to business success is an important intervention in times of rapid changes, such as the internationalisation of business, advancements in technology, and short-term employment, which

all have a huge impact on employees [33]. As pruning is necessary for bonsai maintenance to maintain the tree's shape, unlearning is a vital process to ensure that organisational growth is deeply rooted in its vision, values, and main objectives, promoting both subjective and objective wellbeing of employees.

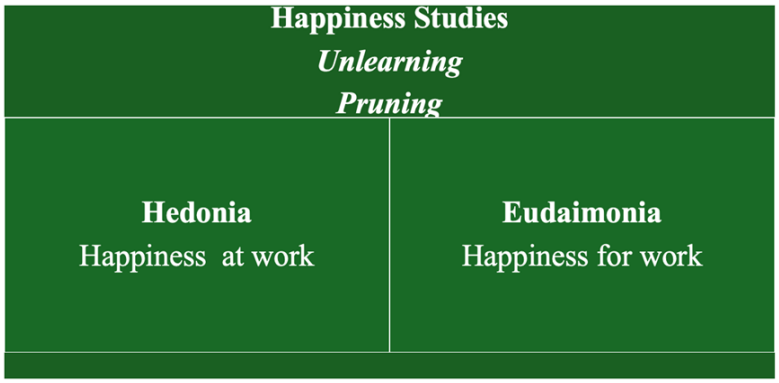

Figure 6. Happiness Studies Interventions to Facilitate Unlearning

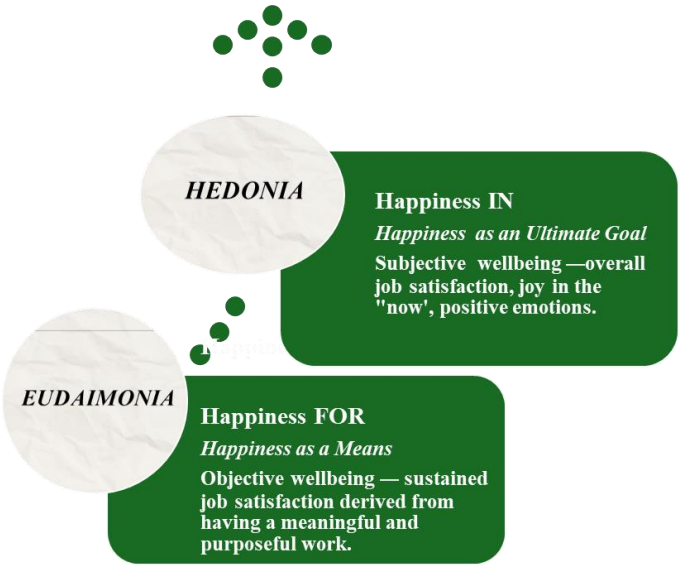

Figure 7. The Link between Happiness and Education

Relearning: Wiring and Positioning

Bonsai experts highlight that the art of bonsai is not possible without good wiring and positioning [25], [26]. Wiring refers to the styling and training of bonsai trees to reposition the branches to one's preference. It takes time for branches to get into their new position and, so to speak, to relearn a new way of being. Positioning describes the best environment where trees should be placed for growth, particularly where to place trees in different seasons to ensure protection and plenty of sunlight [25], [26]. Optimising the environment to help trees relearn to achieve growth and make undesired behaviour more difficult to perform serves as a good metaphor for relearning in organisations. (see Figure 8) Through wiring and positioning, I introduce future studies interventions. (see Figure 9)

By positioning their employees in systemic environments beneficial for relearning, organisations can innovate better, ultimately improving their resilience and ability to thrive in a changing world. Systems thinking, characterised by its holistic, interconnected approach, enables a more comprehensive understanding of the future through "emergent" meaning people ascribe to the environment [12], [34], and therefore, promotes relearning. Systemic environments, characterised by integrative whole systems thinking and action [35], encompass the broader context, including exposure to nature, uplifting social interactions, and aesthetically inspiring places. Systemic changes in environments have ripple effects on employees, both directly and indirectly. Therefore, it is crucial to position employees in a way that their environments stimulate action, carry ideas for them to foster innovation, provide multi-modal patterns of experience, and ultimately enhance aesthetic intelligence.

Futures literacy is introduced and described by UNESCO as the ability to shape the present by understanding and engaging with the role of the future [19], [36]. As wiring is necessary for shaping bonsai to obtain the desired shape for the future, futures literacy is required for shaping relearning in organisations due to its ability to question norms, allow novel interpretations of familiar environments, and provoke non-conscious learning. (see Figure 9) The importance of futures literacy for relearning lies in its ability to help organisations reframe what they see and do in the present in ways that lead to the emergence of new meanings — innovation. This suggests the most unexpected conclusions, novel distinctions, and self-reinvention of the employees, which are the catalysts of success in the era of AI. Additionally, researchers define futures literacy as the ability to imagine the future [19], [36], and since the efforts of others to imagine the future are embodied in the poetic, harnessing employees' ability to understand the poetic, or as I introduce it — aesthetic intelligence, supports this process of imagining their own and organisation's futures, or relearning.

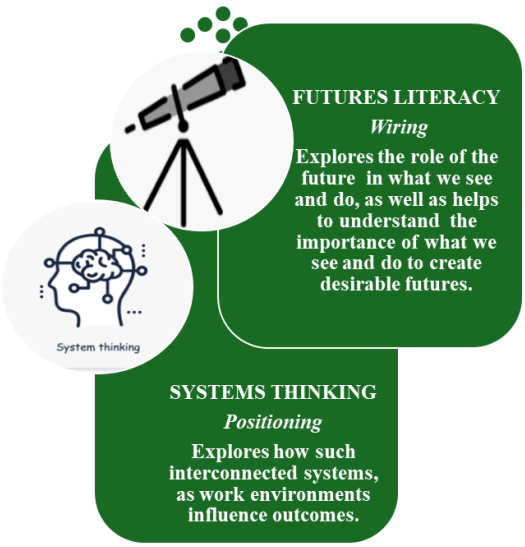

Figure 8. The Link between Future and Education

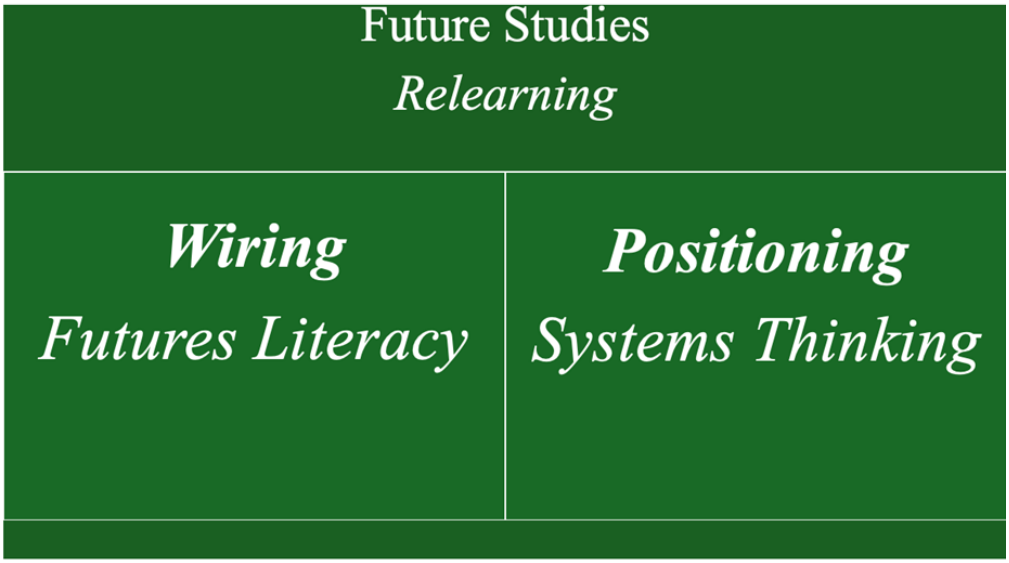

Figure 9. Future Studies Interventions to Facilitate Relearning

The five elements of bonsai thinking: *watering*, *fertilising, pruning, wiring, and positioning,* manifest as characteristics of *bonsai thinking* and are critical in handling the complexity of learning, unlearning, and relearning, such as *watering* and *fertilising* to enhance organisational learning, *pruning* to facilitate unlearning, *wiring,* and *positioning* to enable relearning. Therefore, they stand the System Test by acting as certain characteristics of a system.

Interconnections: From the Trilogy of Mind to the Trilogy of Education

The way elements of bonsai thinking feed into and relate to each other is based on the Trilogy of Mind and extends into the Trilogy of Education. The threefold division of mental activity into cognition, affection, and conation originated in the German faculty psychology of the eighteenth century and has been the foundation of all behavioral science theories ever since [37]. There are strong theories and empirical evidence concluding that our attitudes are based on cognition, affection, and conation [38]. The division into knowing, feeling, and willing is crucial for understanding the interconnections of the elements of the hereby proposed bonsai theory of learning, unlearning, and relearning.

Cognition refers to thinking, beliefs, and ideas related to the attitude object, affection to feelings about the attitude object, and conation to future intention related to the attitude object. All presented mental faculties are important individually; however, all together they elucidate how our thinking, emotions, and intentions are interconnected, and how a change in one domain can affect the others [38]. This illuminates the interconnectedness of learning, unlearning, and relearning, and their main elements as they refer to thinking, emotions, and future intentions.

In psychology, the prominence of the cognitive component of attitude has been pervasive, whereas affection and conation have been neglected for a long time [37]. The same tendency has been pervasive in organisational learning, where there is much attention placed on learning, but unlearning and relearning have been neglected. Only in the 90s, Dr. Martin Seligman founded the field of positive psychology, emphasising the importance of happiness and paving the way for a multidimensional approach to attitudes. Moreover, Seligman and his colleagues [39] propose

defining humankind as “homo prospectus”, shedding light on the importance of anticipating and evaluating future possibilities for changing attitudes.

If there are three domains of mental attitudes to *learning* stemming from the Trilogy of Mind — cognitive, affective, and conative, I suggest introducing the Trilogy of Education — *neuroscience*, *happiness studies,* and *future studies* to form the bedrock of organisational learning. This would help *organisations* consider the influence of employees' cognitive, affective, and conative factors when designing interventions. To facilitate the creation of more comprehensive and holistic learning environments that foster *learning* (metacognition and meta-motivation), *unlearning* (happiness for and at work), and *relearning* (futures literacy and systems thinking), it is imperative to apply the 3D Approach to organisational learning **(**see Figure 10**).**

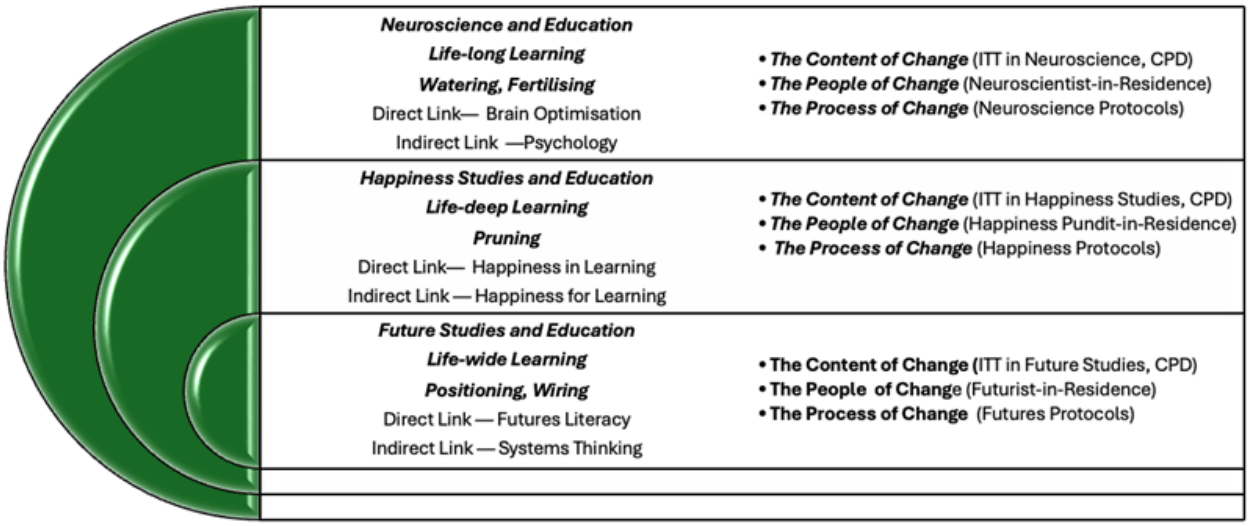

Figure 10. The 3D Approach ™ to Organisational Learning

The 3D Approach brings in neuroscience for the cognitive, happiness studies for the affective, and future studies for the conative attitudes to learning. It allows addressing the interconnectedness between all domains of mental attitudes through the interconnections between the elements of *bonsai thinking* within the system of learning, unlearning, and relearning. These interconnections influence each other and determine how elements interact, promoting systemic change by addressing root causes of organisational learning problems rather than just symptoms. Moreover, the 3D Approach also focuses on a change management process, which includes the *content of change* or continuous professional development in educational neuroscience, happiness studies, and future studies to ensure that employees are informed and equipped on how to learn, unlearn, and relearn. *The process of change* to streamline systemic change within an organisation, including planning, interventions, and evaluation of learning, unlearning, and relearning. And *the people of change,* which refers to the pundits-in-residence placed to work in organisations responsible for bringing in their expertise in neuroscience, happiness studies, and future studies. Overall, the relationships between the elements of bonsai thinking are strong; the elements interconnect and relate to each other, which also stands the System Test.

Discussion

The bonsai thinking framework makes significant theoretical contributions to organisational learning theory. Firstly, it bridges the gap between conventional organisational learning theories

[11], [12] and contemporary educational neuroscience, happiness studies, and future studies [5], [17], [18], [19]. In contrast to Argyris and Schön's [11] double-loop learning that emphasises questioning assumptions, however, does not adequately address the affective and conative dimensions of learning, bonsai thinking extends these foundational theories by integrating the Trilogy of Mind, demonstrating that effective organisational learning must simultaneously engage all the existing faculties of mind: cognition, affection, conation.

Secondly, the framework is a response to Hedberg's [14] call for the necessity to facilitate organisational unlearning by providing a systematic metaphor of pruning and connecting it to well-being through happiness studies. While previously, only the cultural dimensions of unlearning were the focus of attention [15], this framework operationalises unlearning through both hedonic (happiness at work) and eudaimonic (happiness for work) dimensions, employing the Self-Determination Theory [16] to shed light on how psychological needs affect the unlearning process. Thirdly, the *bonsai thinking* framework incorporates Kolb's [13] experiential learning cycle into the dimension of life-wide learning — relearning. It demonstrates how experience, reflection, abstract thinking, and conceptualisation, as well as active experimentation, operate within systemic environments.

The gap in unlearning and relearning research identified by Bedford [10] is also addressed by providing specific, functional concepts of pruning, wiring, and positioning grounded in accepted theories. This framework also provides a general conceptual structure applicable to various contexts, whilst Klein [9] and Baker and Greif [8] focused only on the importance of learning, unlearning, and relearning in specific contexts.

In comparison to existing organisational learning frameworks, bonsai thinking has several distinctive advantages. This novel approach treats learning as fundamentally multidimensional by adding such dimensions as emotional (affective) and future-oriented (conative), unlike purely cognitive approaches that are now dominating the field. Moreover, this metaphor-based approach [22], [40] allows practical accessibility while maintaining scientific rigor.

Bonsai thinking for learning, unlearning, and relearning is expected to come into force as a valid alternative for the reductionist approach to the current research and practice in organisational learning. Reductionism — a way of understanding a system through the description of its subsystems, is still a dominant mode in organisational education of the 21st century, despite the overall use of systems thinking for organisational change. Unfortunately, learning is not approached as a cycle and as a system: it is usually life-long learning that is paid attention to, while life-deep and life-wide dimensions of learning are being neglected. Moreover, the dynamics between all three elements of a learning-unlearning-relearning cycle are ignored. Bonsai thinking employs functional and relational criteria to study a learning, unlearning, and relearning cycle, and thus, should be considered as a basis for a new theory of learning, unlearning, and relearning. Furthermore, the 3D Approach provides actionable pathways and offers opportunities for empirical validation and instrument development.

CONCLUSION

As demonstrated through the System Test, *bonsai thinking* successfully defines a goal-oriented system for understanding learning, unlearning, and relearning. The framework clearly articulates its purpose through life-long, life-deep, and life-wide learning, identifies its elements through watering, fertilising, pruning, wiring, and positioning, and clarifies interconnections through the

Trilogy of Mind and the Trilogy of Education. This validates *bonsai thinking* as a coherent conceptual framework and discipline.

In addition, metaphors are powerful tools for understanding abstract theories by relating them to real-world examples and experiences. The metaphor of bonsai thinking bridges the gap between theory and practice. Since the primary function of metaphors in science is to develop and frame new theories and ideas, which is described as "theory constitutive", as well as express complex ideas in simple terms, bonsai thinking was introduced to develop a theory of learning, unlearning, and relearning. Bonsai Thinking is expected to help express a complex idea of a learning-unlearning-relearning cycle, and to outline steps through which practical interventions in organisations can lead to desired outcomes. Moreover, the use of the metaphor of bonsai would not only enhance employees' ability to understand the processes that underlie learning, unlearning, and relearning but would also become a motivating factor to help streamline these processes. All in all, without a doubt, organisational learning requires optimisation of its approaches and processes to drive improved performance.

LIMITATIONS

The conceptual framework of bonsai thinking provides a theoretical coherence of a learning-unlearning-relearning cycle; however, empirical testing is essential to validate the effectiveness of the proposed framework. Bonsai Theory of Learning, Unlearning, and Relearning can be tested through intervention research, which involves controlled studies to compare organisations utilising the bonsai thinking framework with those applying traditional learning approaches. Such empirical validation would also help refine the framework based on practical application, as recommended by theory-building research.

It is also important to note the framework's limitations that suggest directions for future research. Since the metaphor of *bonsai* originated in Japan, an introduction into the art of bonsai might be required to clarify the context and the metaphorical significance of the framework. Additionally, there is a strong need to develop reliable and valid measures for constructs expressed by metaphors like "watering", "fertilising", "pruning", "wiring", and "positioning", which would require deep psychometric work. The development of measurement instruments for each element of the framework should be the primary future research direction.

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AUTHOR CONTRIBUTION

The author confirms the sole contribution and responsibility for the conception of the study, the presentation of results, and manuscript preparation.

CONFLICT OF INTEREST

The author declares no conflict of interest.

DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The author declared that this study was prepared, researched, written, and edited without the assistance of AI techniques.

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