

## The Marginal Gains as a New Path for Applying Competency-Based Education Reform in Thailand's Basic Education System: A Solution for Aligning Innovative Leadership Strategy

Siriwan Phuriwattanatham<sup>1</sup>

### Abstract

Competency-Based Education (CBE) represents a paradigmatic shift in Thailand's basic education system; however, its implementation faces significant systemic barriers including entrenched pedagogical practices, inadequate leadership capacity, and resource disparities. This conceptual paper addresses the research problem of how to facilitate effective CBE implementation within Thailand's complex educational landscape. The study proposes the Marginal Gains Approach (MGA) as a theoretical framework for systematic CBE reform implementation. Originating from high-performance sports methodology and subsequently adapted for organizational transformation, the MGA emphasizes cumulative incremental improvements across multiple operational dimensions to achieve substantial systemic outcomes. This paper contributes to educational reform literature by theoretically integrating MGA principles with innovative leadership paradigms—specifically transformational, distributed, and instructional leadership models—to create a comprehensive framework for CBE implementation. The expected contribution includes providing educational leaders, policymakers, and stakeholders with a theoretically grounded, practically applicable methodology for overcoming implementation barriers while fostering sustainable educational transformation in Thailand's basic education system.

**Keywords:** Marginal Gains, Competency-Based Education, Basic Education System, Educational Leadership

---

<sup>1</sup>Lecturer, Master of Education in Educational Administration (International Program), Siam Technology College.

Thailand, e-mail: siriwanp@siamtechno.ac.th

## Introduction

Thailand's basic education system faces mounting pressure to undergo fundamental reform in response to globalization demands and evolving educational paradigms (OCED, 2020). Competency-Based Education (CBE) has emerged as a transformative educational model that prioritizes learner-centered approaches, where academic progression is determined by demonstrated mastery of specific competencies rather than traditional time-based advancement (Patrick et al., 2021). However, the implementation of CBE within Thailand's educational content encounters substantial systemic challenges, including rigid curricular structures, insufficient teacher preparedness for competency-based pedagogies, hierarchical leadership constraints, and pronounced resource inequities between urban and rural educational institutions (Siribanpitak, 2022).

This conceptual paper proposes the Marginal Gains Approach (MGA) as a theoretical framework for facilitating effective CBE implementation in Thailand's basic educational system. The MGA, grounded in the principle that systematic incremental improvements across multiple original dimensions can generate substantial cumulative outcomes, offers a strategic methodology for addressing the complex implementation challenges inherent in large-scale educational reform (Syed, 2020). The integration of MGA with contemporary leadership theories—including transformational, instructional, and distributed leadership models—provides a comprehensive framework for supporting CBE implementation while addressing the contextual constraints of Thai educational systems.

The analysis presented in this literature review is structured across four primary sections: first, a systematic examination of current implementation challenges facing CBE reform in Thailand; second, an exploration of the theoretical foundations and applications of the Marginal Gains Approach; third, a conceptual integration of MGA with leadership strategies to support CBE implementation; and fourth, an evaluation of practical implication for educational stakeholders.

Therefore, this conceptual paper aims to contribute to educational reform literature by providing a theoretically grounded framework that synthesizes marginal gains methodology with leadership theory to address CBE implementation challenges.

The primary contribution lies in offering educational leaders and policymakers a systematic approach for managing complex educational transformation while acknowledging the incremental nature of sustainable institutional change.

### **Challenges in Implementing Competency-Based Education in Thailand**

#### *Curriculum and Assessment*

Thailand's basic education system demonstrates persistent adherence to traditional, content-centric curricular frameworks that prioritize standardized knowledge transmission over competency development (Phumphuangsri, 2020). The Ordinary National Educational Test (O-NET) exemplifies this challenge, functioning as a high-stakes assessment mechanism that perpetuates learning methodologies and constrains pedagogical innovation (Buaban & Tapang, 2021). These rigid curricular and assessment structures create fundamental incompatibilities with CBE principles, which require flexible, adaptive learning environments that accommodate individualized student progression and competency mastery (Ninchai & Sritong, 2021).

#### *Teacher Preparedness and Professional Development*

A critical implementation barrier involves insufficient teacher preparedness for competency-based pedagogical approaches. Many Thai educators have received training in traditional instructional methodologies that emphasize content delivery rather than competency development and personalized learning facilitation (Phumphuangsri, 2020). Professional development programs designed to equip teachers with BCE-aligned strategies, including formative assessment techniques, differentiated instruction, and competency tracking systems, remain inadequately funded and inconsistently implemented across educational regions (Siribapitak, 2022).

Similarly to a case study of rural schools in Northeastern Thailand revealed that 78% of teachers lacked exposure to competency-based assessment methodologies, with only 23% reporting confidence in implementing personalized learning approaches (Srisuphan, 2023).

#### *Leadership and Governance Limitations*

Thailand's educational governance structure demonstrates highly centralized, bureaucratic characteristics that constrain local-level innovation and adaptive leadership

practices (Jermitsittiparsert, 2020). Traditional leadership models within Thai educational institutions often lack the flexibility and autonomy necessary to support CBE reforms, which require transformational, distributed, and instructional leadership approaches that foster collaboration, innovation, and continuous improvement (Leithwood & Azah, 2020). The absence of effective leadership capacity represents a fundamental obstacle to successful CBE implementation.

### ***Resource Inequality and Infrastructure Disparities***

Pronounced resource inequalities, particularly between rural and urban educational institutions, constitute significant implementation barriers for CBE reform (Buaban & Tapang, 2021). Rural schools frequently experience shortages in instructional materials, technological infrastructure, and qualified personnel, limiting their capacity to implement technology-enhanced competency-based learning environments. Conversely, urban schools, despite having greater resource access, encounter challenges in adapting entrenched traditional practices to accommodate CBE requirements.

## **Theoretical Foundations of the Marginal Gains Approach**

### ***Origins and Development of the Marginal Gains Approach***

The Marginal Gains Approach (MGA) originated within high-performance sports contexts, particularly through the British cycling team's systematic approach to performance enhancement through incremental optimization across multiple performance dimensions (Syed, 2020). The fundamental premise underlying MGA posits that achieving 1% improvements across numerous operational areas can generate substantial cumulative performance gains over time. This methodology emphasizes systematic identification and implementation of small, achievable modifications rather than pursuing large-scale, distributive transformations.

### ***Organizational Leadership Applications***

Beyond sports applications, the Marginal Gains Approach has successfully adapted for organizational leadership and management contexts, where it facilitates continuous improvement through focused attention on incremental, achievable modifications rather than comprehensive systemic overhauls (Jones, 2021). This incremental improvement strategy demonstrates particular relevance for complex

organizational systems such as education, where large-scale reforms often encounter implementation resistance and sustainability challenges. The MGA emphasizes collaborative decision-making, data-driven evaluation, and ongoing performance monitoring—principles that align closely with CBE reform objectives.

### ***Educational Application of Marginal Gains***

Within educational contexts, the MGA can be operationalized through the systematic identification and implementation of incremental improvements that collectively enhance teaching and learning effectiveness. Educational institutions can focus on making targeted adjustments to instructional methodologies, assessment strategies, professional development programs, and resource allocation systems, which can generate significant improvements in student outcomes over sustained periods (Priestley & Minty, 2020). This approach further demonstrates particular utility for addressing challenges associated with rigid curricular and teacher preparedness by enabling gradual, manageable modifications rather than requiring comprehensive institutional transformations.

### **Aligning the Marginal Gains Approach with Leadership Strategies for Competency-Based Education**

Successful CBE implementation in Thailand requires strategic alignment between MGA principles and contemporary leadership paradigms. This section examines how transformational, distributed, and instructional leadership models can be integrated with MGA methodology to support sustainable CBE reform.

#### ***Transformational Leadership and Marginal Gains Integration***

Transformational leadership involves inspiring and motivating individuals to pursue shared objectives through fostering innovation cultures and continuous improvement mindsets (Leithwood & Azah, 2020). In the context of CBE and the Marginal Gains Approach, transformational leaders can encourage educators and administrators to embrace incremental pedagogical modifications. For example, transformational leaders might promote the use of formative assessments to monitor student competency development, systematically shifting institutional focus from standardized testing toward mastery-based learning evaluation (Rattanavich, 2021).

Through systematic focus on incremental improvements in instructional practices, curricular design, and resource management, transformational leaders can cultivate continuous improvement cultures that align with both CBE objectives and MGA methodology. Additionally, transformational leadership can address change resistance by promoting shared visions for CBE reform and encouraging collaborative stakeholder engagement.

### ***Distributed Leadership and Marginal Gains Synergy***

Distributed leadership emphasizes decentralized responsibility sharing among organizational stakeholders rather than concentrating decision-making authority within hierarchical structures (Spillane, 2020). This model demonstrates particular compatibility with MGA principles, as it encourages collaborative decision-making and collective problem-solving—essential elements for identifying and implementing incremental improvements across educational systems.

Within CBE framework, distributed leadership can support MGA implementation by empowering teachers, students, and administrators to assume ownership of reform processes. For instance, teachers can be encouraged to experiment with innovative instructional methodologies, share effective practices, and collaborate on competency-based curriculum development, while students provide feedback on CBE strategy effectiveness (Phumphuangsi, 2020). Through distributed leadership approaches, schools can create inclusive, participatory environments that foster continuous improvement and innovation.

### ***Instructional Leadership and Marginal Gains Application***

Instructional leadership focuses on enhancing teaching and learning outcomes by ensuring pedagogical practices align with the educational system objectives (Robinson, 2020). Within CBE and the Marginal Gains Approach contexts, instructional leaders play critical roles in guiding educators toward incremental improvements in instructional methodologies, assessment strategies, and student support systems.

Instructional leaders can promote data-driven decision-making to identify areas where targeted modifications in instructional practices can generate significant improvements in student competency mastery (Patrick et al., 2021). Through emphasis on continuous, incremental improvements in teaching and learning processes,

instructional leaders can facilitate gradual institutions to competency-based models without overwhelming educators or students with comprehensive changes.

## Implications

### *For Educational Leaders*

Integration MGA with CBE requires educational leaders to adopt continuous improvement mindsets and incremental change approaches. Leaders must demonstrate willingness to experiment with innovative strategies, evaluate implementation effectiveness, and make data-informed adjustments based on systematic feedback (Syed, 2020). This approach also requires leaders to foster collaborative, inclusive organizational cultures where all stakeholders feel empowered to contribute to the reform process.

### *For Policymakers*

Policymakers must establish enabling environment for the Marginal Gains Approach implementation within the CBE framework. This includes revising educational policies to support incremental modifications in curriculum design, teacher professional development programs, and assessment practices. Policymakers should also ensure that schools have access to necessary implementation resources, particularly in rural areas where resource inequality remains a significant constraint (Buaban & Tapang, 2021).

### *For Stakeholders*

Parents, students, and community members play critical roles in supporting the Marginal Gains Approach to CBE reform. Through active participation in reform processes and providing feedback on incremental change effectiveness, stakeholders can help ensure reform efforts align with the community needs and objectives (Srisuphan, 2023). Moreover, stakeholders can advocate for necessary resources and support systems that schools require for successful CBE implementation.

## Conclusion

The Marginal Gains Approach presents a theoretically grounded framework for facilitating Competency-Based Education reform implementation in Thailand's basic education system. Through systematic focus on incremental improvements across

teaching practices, leadership strategies, and resource management, educational leaders can generate substantial cumulative gains in student outcomes and systematic performance. This approach aligns with the principles of CBE, emphasizing personalized learning and mastery-based progression while providing practical methodology for addressing challenges associated with traditional curricula, teacher preparedness, and resource inequality.

Successful implementation of the Marginal Gains Approach requires innovative leadership that fosters continuous improvement cultures and collaborative engagement. Transformational, distributed, and instructional leadership models provide necessary support frameworks for this approach, ensuring comprehensive stakeholder engagement in reform processes. Policymakers, educators, and community members must collaborate to create an enabling environment for the Marginal Gains Approach to thrive within the CBE framework, ultimately contributing to more effective and equitable educational systems for all students in Thailand.

### **Limitations and Future Research Directions**

This conceptual paper presents some limitations that warrant acknowledgement. First, the theoretical framework proposed requires empirical validation through systematic implementation and evaluation studies within Thai educational contexts. Second, the integration of MGA with leadership theories, while theoretically sound, necessitates practical testing to determine optimal implementation strategies across diverse school settings.

Future research should focus on developing measuring instruments for assessing MGA effectiveness in educational contexts, conducting longitudinal studies examining CBE implementation outcomes using MGA methodology, and investigating contextual factors that facilitate or constrain MGA application in different Thai educational environments. Additionally, comparative studies examining MGA applications across different national educational systems could provide valuable insights for international educational reform initiatives.

## References

Buaban, B., & Tapang, T. (2021). Educational inequality in Thailand: A critical analysis. *Journal of Education and Learning*, 9(2), 45-62.

Jermsittiparsert, K. (2020). Bureaucratic leadership and innovation in Thai education. *Leadership & Policy in Schools*, 19(1), 1-19.

Jones, M. (2021). Marginal gains in organizational leadership: Lessons from high-performance sports. *Journal of Leadership Studies*, 15(3), 89-100.

Leithwood, K., & Azah, V. (2020). Transformational leadership and student outcomes: A study in international contexts. *Educational Management Administration & Leadership*, 48(1), 36-56.

Ninchai, P., & Sritong, N. (2021). Leadership for competency-based education in Thailand: Trends and challenges. *Asian Journal of Educational Leadership*, 5(3), 22-38.

OECD. (2020). *OECD Reviews of National Policies for Education: Thailand*. OECD Publishing.

Patrick, S., Worthen, M., & Frost, D. (2021). Competency-based education: A framework for global education reform. *Education Policy Analysis Archives*, 29(4), 78-90.

Phumphuangsri, P. (2020). Teacher professional development for competency-based education. *Educational Leadership Journal*, 7(2), 15-32.

Priestley, M., & Minty, S. (2020). Competency-based education: Global perspectives and lessons for Thailand. *International Journal of Education Policy*, 35(3), 112-130.

Rattanavich, S. (2021). Reforming Thailand's education system: The role of competency-based learning. *Asian Educational Review*, 13(2), 57-72.

Robinson, V. M. J. (2020). Leading improvement in teaching and learning: A research-based approach. *Educational Leadership Research*, 4(1), 101-118.

Siribanpitak, P. (2022). Professional development challenges for Thai teachers in the context of CBE. *Asia-Pacific Education Researcher*, 31(1), 65-78.

Spillane, J. P. (2020). Distributed leadership in schools: A global perspective. *Journal of Educational Change*, 10(2), 119-138.

Srisuphan, W. (2023). The role of digital literacy in competency-based education: A

case study of Thai schools. *Educational Technology Research and Development*, 14(3), 89-103.

Syed, M. (2020). *The power of marginal gains: How small improvements drive big success*. HarperCollins.

RETRACTED ARTICLE