

Vol.2 No.1
(January - March 2026)

NAKHON RATCHASIMA

Journal of Humanities
and Social Sciences

humanities and social sciences field

Humanities and Social Sciences
Nakhon Ratchasima Rajabhat University

ISSN 3057-1596 (Online)



Nakhon Ratchasima Journal of Humanities and Social Sciences, ISSN 3057-1596 (Online)

Vol. 2 No. 1 January – March 2026

Nakhon Ratchasima Journal of Humanities and Social Sciences (NJHSS) publishes academic works online in the fields of humanities and social sciences. Its scope includes social sciences, arts and humanities, language and literature, education, social innovation, education and innovation technology, information sciences, and other related fields. It serves as a platform to share knowledge about humanities and social sciences among faculties, scholars, students, and public. Contributions are welcomed from both inside and outside the university to continuously develop and promote academic works that can be practically applied, and be beneficial to the whole society. The journal accepts articles in English only.

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The current issue features articles that address significant topics in the fields of education and innovation technology, social innovation, education, and humanities. A total of five articles are presented, comprising three research articles and two academic articles. Each contribution offers valuable insights that advance academic development and support practical applications. **The first article** is “Causal Analysis of Place-Based Community Learning on Digital Innovator Competencies of Upper Secondary School Student”. **The second article** is “Quality Assessment Guidelines and Management Strategies for the Health and Beauty OEM Industry-An ADLI Framework Approach”. **The third article** is “Path Optimization of Sino-Thai Education Collaborative Talent Cultivation Based on OBE Theory”. **The fourth article** is “Development of Chinese Vocabulary Learning Media via Instagram for Upper Secondary School Students in Science, Mathematics, and Technology Programs”. **The fifth article** is “Thai Cursing Rituals and Anti-Corruption Symbolic Strength and Social Function”.

The editorial team of Nakhon Ratchasima Journal of Humanities and Social Sciences (NJHSS) would like to express our sincere gratitude to all of

authors for their contributions, as well as to the esteemed reviewers for their valuable guidance that help maintain the high quality and standard of our journal.

We sincerely hope that this issue will be beneficial to all readers and serve as an inspiration for further study and research in the future.

Thank you all for supporting our journal.



(Dr. Teerawat Karnsopa)

Editor of Nakhon Ratchasima Journal of
Humanities and Social Sciences

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Causal Analysis of Place-Based Community Learning on Digital Innovator Competencies of Upper Secondary School Students

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Received 28 December 2025; Revised 12 February 2026; Accepted 15 February 2026

Abstract

This quasi-experimental study investigated the causal effects of place-based community learning on digital innovator competencies among upper secondary school students. Using a non-equivalent control group design with pretest-posttest measurements, this study (N=120 urban secondary students, northern Thailand) compared place-based community learning (n=60) versus traditional instruction (n=60) using pretest-posttest design. Digital innovator competencies were measured across six dimensions: creativity and imagination, design thinking, digital technology skills, innovative problem-solving, collaboration and communication, and adaptability and lifelong learning. Data were analyzed using paired t-tests, independent t-tests, and ANCOVA to control for pretest scores, with effect sizes reported using Cohen's d and partial eta squared. Results indicated that students in the experimental group demonstrated significantly higher digital innovator competencies than those in the control group ($p < .05$), with medium to

large effect sizes across all competency dimensions. ANCOVA analysis confirmed the causal relationship between place-based community learning and competency development after controlling for baseline differences. Results provide robust evidence (Cohen's $d = 0.67-1.51$) for place-based learning's effectiveness in developing 21st century competencies, with implications for curriculum design and teacher development.

Keywords: Place-based community learning, Digital innovator competencies, Causal analysis, 21st century skills

Introduction

1. Background and Rationale

The rapid transformations of the 21st century, characterized by the digital revolution and technological integration into daily life, necessitate educational systems to prepare students with competencies extending beyond traditional academic knowledge. Digital innovator competencies—encompassing creativity, design thinking, technological proficiency, and collaborative problem-solving—have emerged as critical outcomes for preparing students to navigate and contribute meaningfully to complex, technology-driven societies (Partnership for 21st Century Learning, 2019; Voogt & Roblin, 2012). These competencies enable learners to identify authentic problems, design innovations using digital tools, and implement beneficial changes within their communities.

Place-based community learning represents a pedagogical approach that connects classroom instruction with local contexts by engaging students in addressing authentic community challenges (Sobel, 2004; Smith & Sobel, 2010). By situating learning within genuine environments and leveraging

community resources, this approach transforms students from passive knowledge recipients into active participants in knowledge creation and community development. The integration of digital tools within place-based learning further amplifies students' capacity for innovation, as technology serves as a powerful medium for research, design, communication, and solution implementation (Howley et al., 2011; Powers, 2004).

Despite growing interest in place-based community learning, existing research predominantly focuses on descriptive case studies, program development, or qualitative explorations of learning processes (Meichtry & Smith, 2007; Stevenson et al., 2013). While valuable, these contributions lack empirical evidence demonstrating causal relationships between place-based community learning interventions and specific learning outcomes. The absence of rigorous experimental or quasi-experimental studies limits the field's ability to make confident conclusions about this pedagogical approach's effectiveness and hinders evidence-based policy decisions regarding curriculum design and educational policy (Penuel et al., 2016).

This study addresses these gaps by employing a quasi-experimental research design to investigate the causal effects of place-based community learning on upper secondary school students' digital innovator competencies. By comparing students participating in structured place-based community learning experiences with those receiving traditional instruction, while controlling for baseline differences and potential confounding variables, this study aims to provide robust empirical evidence regarding this pedagogical innovation's effectiveness. The use of Analysis of Covariance (ANCOVA) strengthens causal inference by accounting for pre-existing differences between groups, while effect size reporting enables

assessment of practical significance beyond statistical significance (Shadish et al., 2002; Slavin, 2008).

Understanding the causal mechanisms through which place-based community learning develops digital innovator competencies holds significant implications for educational practice and policy. If evidence confirms that this approach substantially enhances student competencies, it provides rationale for resource allocation, teacher professional development, and curriculum reform. Furthermore, by examining impacts across multiple dimensions of digital innovator competencies, this research offers nuanced insights into which specific competencies benefit most from place-based community learning, informing more targeted instructional design.

2. Theoretical Foundations

Place-based community learning draws upon multiple theoretical traditions emphasizing the importance of context, experience, and social participation in human learning and development. Kolb's (1984) experiential learning theory proposes that learning occurs through a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation. Place-based community learning operationalizes this cycle by engaging students in authentic community experiences that serve as concrete learning events, stimulating reflection on observations and experiences, guiding development of conceptual understanding, and providing opportunities to test ideas through active intervention in community contexts.

Lave and Wenger's (1991) situated learning theory emphasizes that learning is fundamentally social and context-dependent, occurring through

legitimate peripheral participation in communities of practice. This perspective challenges assumptions that knowledge can be decontextualized and transferred across settings, instead arguing that competencies develop through authentic engagement in practices characterizing specific communities. Place-based community learning creates opportunities for students to engage in authentic community practices, interacting with community members, organizations, and challenges in ways that position learners as legitimate contributors rather than outsiders or observers.

Constructivist theories, including Piaget's cognitive constructivism and Vygotsky's social constructivism, emphasize that learners actively construct knowledge through interactions with their environment and through social negotiation of meaning (Fosnot, 2013; Vygotsky, 1978). Place-based community learning provides rich environments for knowledge construction by presenting complex, multifaceted problems requiring students to engage with multiple perspectives, synthesize diverse information sources, and develop solutions through iterative experimentation and refinement.

3. Digital Innovator Competencies Framework

Digital innovator competencies represent a synthesis and extension of various 21st century competency frameworks, including the Partnership for 21st Century Learning (P21) Framework, OECD Learning Compass 2030, and UNESCO frameworks for transversal competencies (Partnership for 21st Century Learning, 2019; OECD, 2018; UNESCO, 2015). This study operationalizes digital innovator competencies through six interrelated dimensions:

Creativity and Imagination encompasses divergent thinking, originality, elaboration, and willingness to explore unconventional

possibilities. Research indicates that creativity can be cultivated through pedagogical approaches providing open-ended challenges, encouraging risk-taking and experimentation, valuing multiple solutions, and creating psychologically safe environments (Beghetto & Kaufman, 2014; Runco, 2014).

Design Thinking represents a structured yet flexible approach to innovation, progressing through empathy, problem definition, ideation, prototyping, and testing (Brown, 2008; Razzouk & Shute, 2012). The human-centered focus of design thinking aligns naturally with place-based community learning, as both emphasize understanding stakeholder needs and developing solutions iteratively through community feedback.

Digital Technology Skills extend beyond basic operational competencies to critical evaluation of digital information, strategic selection and use of appropriate tools, creation of digital artifacts, and understanding how technology shapes communication and social interaction (Eshet-Alkalai, 2004; Van Laar et al., 2017).

Innovative Problem-Solving comprises problem identification, analysis, solution generation, implementation, and evaluation (Jonassen, 2011; Treffinger et al., 2008). Effective problem-solvers demonstrate systems thinking, recognizing connections and unintended consequences, while employing both analytical and creative cognitive processes.

Collaboration and Communication encompasses interpersonal skills, teamwork, conflict resolution, perspective-taking, and diverse modes of expression (Johnson & Johnson, 2009; Lai, 2011). Research demonstrates that collaborative learning enhances achievement, particularly for complex tasks requiring diverse expertise.

Adaptability and Lifelong Learning reflects metacognitive awareness, self-regulation, perseverance, growth mindset, and openness to feedback (Dweck, 2006; Zimmerman, 2002). These dispositions enable individuals to navigate uncertainty, learn from failure, and continuously develop new capabilities.

4. Research Gap and Study Contribution

While existing research suggests positive associations between place-based learning and various educational outcomes, the field lacks rigorous quasi-experimental or experimental studies establishing causal relationships with specific, well-defined competencies. Most studies rely on self-report data without independent verification of competency development and few employ validated instruments with established psychometric properties. This study contributes to the field by: (1) employing a rigorous quasi-experimental design with control group comparison, (2) using validated assessment instruments combining self-report and performance-based measures, (3) examining multiple dimensions of digital innovator competencies simultaneously, (4) utilizing ANCOVA to strengthen causal inference by controlling for baseline differences, and (5) reporting effect sizes to enable assessment of practical significance.

Research Objectives

This study pursues three primary objectives:

1. To compare students' digital innovator competencies before and after participating in place-based community learning, examining whether the intervention produces significant within-group changes in competency levels.

2. To compare digital innovator competencies between students receiving place-based community learning instruction and those receiving traditional instruction, determining whether significant between-group differences exist following the intervention period.

3. To analyze the causal effects of place-based community learning on upper secondary school students' digital innovator competencies, examining whether the intervention serves as a causal factor in competency development after controlling for baseline differences and potential confounding variables.

Research Scope

1. Population and Sample

This study focused on upper secondary school students (Grades 10-12) participating in either place-based community learning or traditional instruction over one academic semester. The intervention comprised four core components: (1) authentic community problems and contexts, (2) project-based learning activities, (3) digital tool integration, and (4) meaningful community engagement.

The population comprised approximately 3,200 upper secondary students in Sakon Nakhon Province urban schools. The sample consisted of 120 students from two urban secondary schools in northern Thailand, selected through purposive sampling of schools with similar demographic characteristics, academic performance levels, technological infrastructure, and proximity to communities suitable for place-based learning projects. Students were assigned to experimental (n=60) and control (n=60) groups based on existing classroom configurations.

2. Variables

Independent Variable: Instructional approach (place-based community learning vs. traditional instruction)

Dependent Variables: Digital innovator competencies comprising six core dimensions: (1) creativity and imagination, (2) design thinking, (3) digital technology skills, (4) innovative problem-solving, (5) collaboration and communication, and (6) adaptability and lifelong learning.

Control Variables: Grade level, prior technology experience, instructional time, content coverage, teacher characteristics

Duration and Assessment: The intervention lasted approximately 16 weeks, providing sufficient time for competency development while remaining feasible within typical school calendars. Digital innovator competency assessment utilized validated instruments incorporating self-report measures and performance-based evaluation to capture both perceived and demonstrated competencies. Data collection occurred at two time points: pretest (before intervention) and posttest (after intervention completion).

Study limitations include restriction to urban schools with adequate technology, limiting generalizability to rural or under-resourced settings. Results apply to upper secondary students in Thai contexts and may require adaptation for different educational systems or cultural contexts

Research Methodology

1. Research Design

This study employed a quasi-experimental non-equivalent control group design with pretest-posttest measurements to investigate the causal

effects of place-based community learning on digital innovator competencies. Students in existing classroom groups were assigned to either the experimental group receiving place-based community learning instruction or the control group receiving traditional instruction. Both groups completed identical digital innovator competency assessments before and after the intervention period. The research design structure is presented in Table 1

Table 1*Research Design of the Study (Non-Equivalent Control Group Design)*

Group	Pretest (O_1)	Treatment (X)	Posttest (O_2)
Experimental Group	O_1	X (Place-Based Community Learning)	O_2
Control Group	O_1	— (Conventional Instruction)	O_2

Note. O_1 = Pretest measurement of digital innovator competencies; X = Place-based community learning intervention; O_2 = Posttest measurement of digital innovator competencies; — = No experimental treatment (conventional instruction only).

Where O_1 represents pretest measurement, X represents place-based community learning intervention, and O_2 represents posttest measurement.

This design enabled three types of comparisons: (1) within-group pretest-posttest comparisons assessing changes within each group, (2) between-group posttest comparisons examining differences in final outcomes, and (3) covariance analysis comparing adjusted posttest means while controlling for pretest scores to strengthen causal inference.

2. Intervention Implementation

Experimental Group: Students engaged in structured place-based community learning incorporating four essential components:

2.1 Authentic Community Problems and Contexts: Students investigated genuine challenges identified through collaboration with community partners, including environmental issues, public health concerns, economic development opportunities, or social welfare needs.

2.2 Project-Based Learning Structure: Instruction was organized around extended projects following iterative cycles of problem identification, investigation, solution design, implementation, and reflection.

2.3 Digital Tool Integration: Students strategically employed digital technologies throughout projects for research, data collection and analysis, communication and collaboration, design and prototyping, and dissemination of findings.

2.4 Meaningful Community Engagement: Community members, organizations, and stakeholders actively participated as partners in problem identification, providing expertise and resources, offering feedback on student work, and collaborating in solution implementation.

Control Group: Students received traditional instruction with teacher-led lectures (60% of class time), textbook-based learning, and individual assignments. While brief group discussions occurred (15-20% of time), these focused on textbook concepts without extended projects, authentic problem-solving, or community engagement. Assessment relied on traditional tests and individual homework, ensuring observed differences reflect place-based learning specifically rather than mere collaborative activity presence.

3. Data Collection Instruments

Digital innovator competencies were assessed using a validated multi-method instrument combining:

3.1 Self-Report Questionnaire: Students rated their perceived competency levels across the six dimensions using Likert-scale items (1=Strongly Disagree to 5=Strongly Agree). The instrument demonstrated strong psychometric properties with Cronbach's alpha coefficients ranging from .82 to .91 across dimensions.

3.2 Performance-Based Assessment: Students completed authentic tasks requiring demonstration of competencies, evaluated using analytical rubrics with clearly defined performance levels. Tasks included: designing solutions to hypothetical community problems, creating digital prototypes, demonstrating collaborative problem-solving, and reflecting on learning processes. To ensure scoring consistency, performance-based assessments were independently evaluated by three trained raters with calibration sessions conducted prior to scoring. Inter-rater reliability assessed using intraclass correlation coefficient (ICC) showed excellent agreement (ICC = .84 to .92 across dimensions; Koo & Li, 2016).

4. Data Analysis

Data were analyzed using SPSS Version 28.0 through the following procedures:

4.1 Descriptive Statistics: Means, standard deviations, and frequency distributions characterized sample demographics and competency scores.

4.2 Paired t-tests: Within-group comparisons examined significant changes from pretest to posttest for both experimental and control groups.

4.3 Independent t-tests: Between-group comparisons examined significant differences in posttest scores between experimental and control groups.

4.4 Analysis of Covariance (ANCOVA): Adjusted posttest means were compared while controlling for pretest scores as covariates, strengthening causal inference by accounting for baseline differences. Assumptions of linearity, homogeneity of regression slopes, independence of covariate and treatment, and standard ANOVA assumptions were verified before analysis.

4.5 Effect Sizes: Cohen's d was calculated for mean differences and partial eta squared (η^2p) for ANCOVA effects, enabling interpretation of practical significance using standard benchmarks (Cohen, 1988; small=0.2, medium=0.5, large=0.8 for Cohen's d).

Statistical significance was determined at $\alpha = .05$ for all analyses.

Research Results

1. Sample Characteristics and Baseline Equivalence

The final sample comprised 120 upper secondary students (experimental group $n=60$, control group $n=60$) with mean age 16.4 years ($SD=0.9$). Gender distribution was balanced (52% female, 48% male) and similar across groups ($\chi^2=0.27$, $p=.60$). Baseline comparisons revealed no significant differences between groups in grade level distribution ($\chi^2=1.43$, $p=.49$), prior technology experience scores ($t=0.84$, $p=.40$), or prior academic achievement ($t=1.12$, $p=.27$), supporting group equivalence on key characteristics. Table 2 presents the demographic characteristics and baseline equivalence testing results.

Table 2

Demographic Characteristics and Baseline Equivalence Testing (N=120)

Characteristic	Experimental Group (n=60)	Control Group (n=60)	Statistical Test	p-value
Age M(SD)	16.3(0.9)	16.5(0.9)	t=1.21	.228
Gender (% Female)	53.3%	50.0%	$\chi^2=0.27$.603
Grade Level Distribution			$\chi^2=1.43$.489
- Grade 10	21 (35.0%)	18 (30.0%)		
- Grade 11	20 (33.3%)	24 (40.0%)		
- Grade 12	19 (31.7%)	18 (30.0%)		
Prior Technology Experience M(SD)	3.42(0.71)	3.51(0.68)	t=0.84	.403
Prior Academic Achievement M(SD)	3.28(0.64)	3.38(0.59)	t=1.12	.265

Note. All baseline comparisons were non-significant ($p > .05$), supporting group equivalence prior to intervention.

2. Within-Group Changes: Pretest to Posttest Comparisons

2.1 Experimental Group Results

Paired t-test results indicated significant improvements across all six competency dimensions from pretest to posttest ($p < .001$ for all dimensions). Mean increases ranged from 0.68 to 1.24 points on the 5-point scale, with Cohen’s d effect sizes ranging from 0.79 (collaboration and communication) to 1.42 (design thinking), indicating medium to large practical effects. Table 3 presents the detailed within-group comparison results for the experimental group.

Table 3

Experimental Group Pretest-Posttest Comparisons on Digital Innovator Competencies (n=60)

Competency Dimension	Pretest M(SD)	Posttest M(SD)	Mean Difference	t	p	Cohen's d
Creativity & Imagination	3.12 (0.64)	4.01 (0.58)	0.89	10.23*	<.001	1.32
Design Thinking	2.89 (0.71)	4.13 (0.62)	1.24	12.47*	<.001	1.42
Digital Technology Skills	3.34 (0.68)	4.21 (0.54)	0.87	9.87*	<.001	1.27
Innovative Problem-Solving	2.97 (0.73)	3.96 (0.66)	0.99	10.45*	<.001	1.35
Collaboration & Communication	3.45 (0.59)	4.13 (0.61)	0.68	8.12*	<.001	0.79
Adaptability & Lifelong Learning	3.21 (0.67)	4.07 (0.59)	0.86	9.34*	<.001	1.21
Overall Digital Innovator Competency	3.16 (0.58)	4.09 (0.52)	0.93	11.89*	<.001	1.54

Note. All comparisons significant at * $p < .001$. Cohen's d effect size interpretation: small=0.2, medium=0.5, large=0.8.

2.2 Control Group Results

Paired t-test results showed modest but significant improvements in four of six dimensions, with smaller effect sizes (Cohen's d ranging from 0.18 to 0.43). Design thinking and innovative problem-solving showed non-significant changes ($p > .05$). Table 4 presents the detailed within-group comparison results for the control group.

Table 4

Control Group Pretest-Posttest Comparisons on Digital Innovator Competencies (n=60)

Competency Dimension	Pretest M (SD)	Posttest M (SD)	Mean Difference	t	p	Cohen's d
Creativity & Imagination	3.09 (0.61)	3.36 (0.59)	0.27	3.21*	.002	0.41
Design Thinking	2.91 (0.69)	3.08 (0.72)	0.17	1.67*	.099	0.22
Digital Technology Skills	3.31 (0.64)	3.52 (0.61)	0.21	2.45*	.017	0.32
Innovative Problem-Solving	3.01 (0.70)	3.15 (0.68)	0.14	1.43*	.157	0.18
Collaboration & Communication	3.42 (0.62)	3.69 (0.58)	0.27	3.12*	.003	0.40
Adaptability & Lifelong Learning	3.18 (0.65)	3.47 (0.63)	0.29	3.34*	.001	0.43
Overall Digital Innovator Competency	3.15 (0.56)	3.38 (0.54)	0.23	3.01*	.004	0.39

Note. Non-significant comparisons (*p > .05) are indicated in regular font. Significant comparisons (*p < .05) were displayed in all dimensions except Design Thinking and Innovative Problem-Solving.

3. Between-Group Comparisons: Posttest Differences

Independent t-tests comparing posttest scores between experimental and control groups revealed significant differences favoring the experimental group across all six competency dimensions (p < .001 for all comparisons). Effect sizes ranged from d=0.67 (collaboration and

communication) to $d=1.51$ (design thinking), indicating medium to large practical effects. Table 5 presents the between-group comparison results.

Table 5

Between-Group Comparisons of Posttest Digital Innovator Competencies (N=120)

Competency Dimension	Experimental Group M(SD)	Control Group M(SD)	Mean Difference	t	p	Cohen's d	Effect Size Interpretation
Creativity & Imagination	4.01 (0.58)	3.36 (0.59)	0.65	6.12*	<.001	1.12	Large
Design Thinking	4.13 (0.62)	3.08 (0.72)	1.05	8.54*	<.001	1.51	Large
Digital Technology Skills	4.21 (0.54)	3.52 (0.61)	0.69	6.57*	<.001	1.20	Large
Innovative Problem-Solving	3.96 (0.66)	3.15 (0.68)	0.81	6.72*	<.001	1.23	Large
Collaboration & Communication	4.13 (0.61)	3.69 (0.58)	0.44	4.02*	<.001	0.67	Medium-Large
Adaptability & Lifelong Learning	4.07 (0.59)	3.47 (0.63)	0.60	5.23*	<.001	0.95	Large
Overall Digital Innovator Competency	4.09 (0.52)	3.38 (0.54)	0.71	7.34*	<.001	1.34	Large

Note. All comparisons significant at $*p < .001$. $df=118$ for all t-tests. Cohen's d effect size interpretation: small=0.2, medium=0.5, large=0.8.

4. ANCOVA Results: Causal Effects After Controlling for Baseline Differences

ANCOVA was conducted to examine group differences in posttest scores while controlling for pretest scores as covariates. Preliminary assumption testing confirmed linearity between covariates and dependent variables (r ranging from .54 to .68, all $p < .001$), homogeneity of regression slopes (all interaction $F < 2.3$, all $p > .10$), and homogeneity of variance (Levene’s tests all $p > .05$).

Results demonstrated significant main effects of instructional approach (experimental vs. control) on all six competency dimensions after controlling for pretest scores ($p < .001$ for all dimensions). Partial eta squared values ranged from .31 to .58, indicating that the instructional approach accounted for 31% to 58% of variance in posttest scores after controlling for baseline competency levels—representing medium to large practical effects. Table 6 presents the ANCOVA results.

Table 6

ANCOVA Results: Effects of Instructional Approach on Digital Innovator Competencies Controlling for Pretest Scores (N=120)

Competency Dimension	F	df	p	Partial η^2	Variance Explained	Effect Size Interpretation
Creativity & Imagination	47.23	1, 117	<.001	.39	39%	Large
Design Thinking	78.45	1, 117	<.001	.58	58%	Large
Digital Technology Skills	52.67	1, 117	<.001	.43	43%	Large
Innovative Problem-Solving	54.89	1, 117	<.001	.45	45%	Large

Competency Dimension	F	df	p	Partial η^2p	Variance Explained	Effect Size Interpretation
Collaboration & Communication	38.12	1, 117	<.001	.31	31%	Medium-Large
Adaptability & Lifelong Learning	43.56	1, 117	<.001	.37	37%	Large
Overall Digital Innovator Competency	69.34	1, 117	<.001	.52	52%	Large

Note. All F-tests significant at *p < .001. Partial eta squared (η^2p) interpretation: small=.01, medium=.06, large=.14. Covariate (pretest scores) was significant for all models (p < .001).

5. Adjusted Means Comparison

After controlling for pretest scores, experimental group adjusted posttest means exceeded control group adjusted means across all competency dimensions, with differences ranging from 0.52 to 0.97 points on the 5-point scale (all differences p<.001). Table 7 presents the adjusted means and standard errors.

Table 7

Adjusted Posttest Means by Group After Controlling for Pretest Scores (N=120)

Competency Dimension	Experimental Group Adjusted M (SE)	Control Group Adjusted M (SE)	Mean Difference	95% CI
Creativity & Imagination	4.03(0.07)	3.34(0.07)	0.69	[0.52, 0.86]

Competency Dimension	Experimental Group Adjusted M (SE)	Control Group Adjusted M (SE)	Mean Difference	95% CI
Design Thinking	4.15(0.08)	3.06(0.08)	1.09	[0.89, 1.29]
Digital Technology Skills	4.19(0.06)	3.54(0.06)	0.65	[0.50, 0.80]
Innovative Problem-Solving	3.98(0.07)	3.13(0.07)	0.85	[0.67, 1.03]
Collaboration & Communication	4.11(0.07)	3.71(0.07)	0.40	[0.23, 0.57]
Adaptability & Lifelong Learning	4.09(0.07)	3.45(0.07)	0.64	[0.47, 0.81]
Overall Digital Innovator Competency	4.09(0.06)	3.37(0.06)	0.72	[0.57, 0.87]

Note. Adjusted means control for pretest scores. SE = Standard Error. CI = Confidence Interval. All mean differences significant at $p < .001$.

Effect sizes ($d = 0.67-1.51$) indicate the average experimental student outperformed approximately 75-93% of control students—gains substantial enough to justify instructional time reallocation from traditional content coverage to community-based projects. For policymakers, these results (explaining 31-58% of variance beyond baseline) support resource investment in teacher development and community partnership infrastructure.

6. Dimension-Specific Effect Patterns

Analysis of effect size patterns across competency dimensions revealed differential intervention impacts. Table 8 summarizes the comparative effect sizes across all three analytical approaches (within-group experimental, between-group, and ANCOVA), facilitating interpretation of which competencies benefited most from place-based community learning.

Table 8

Summary of Effect Sizes Across Analytical Approaches for Each Competency Dimension

Competency Dimension	Experimental Within-Group Cohen's d	Between-Group Cohen's d	ANCOVA Partial η^2_p	Relative Effect Magnitude
Design Thinking	1.42	1.51	.58	Largest
Overall Digital Innovator Competency	1.54	1.34	.52	Very Large
Innovative Problem-Solving	1.35	1.23	.45	Large
Creativity & Imagination	1.32	1.12	.39	Large
Digital Technology Skills	1.27	1.20	.43	Large
Adaptability & Lifelong Learning	1.21	0.95	.37	Large
Collaboration & Communication	0.79	0.67	.31	Medium-Large (Smallest)

Note. Effect sizes consistently demonstrate medium to large intervention effects across all competencies, with Design Thinking showing the largest effects across all analytical approaches.

The convergent evidence across multiple statistical approaches—within-group comparisons, between-group comparisons, and covariance analyses—provides robust support for the causal effectiveness of place-based community learning in developing digital innovator competencies. The consistent pattern of medium to large effect sizes strengthens confidence in causal interpretation despite the quasi-experimental design’s inherent limitations.

Discussion of Results

1. Interpretation of Causal Effects

The convergent evidence from within-group comparisons, between-group comparisons, and ANCOVA analyses provides robust support for the causal effectiveness of place-based community learning in developing digital innovator competencies among upper secondary students. The consistent pattern of large effect sizes across multiple statistical approaches strengthens confidence in causal interpretation, as recommended by contemporary quasi-experimental methodology (Shadish et al., 2002; Reichardt, 2019).

The ANCOVA results are particularly compelling, as they address the primary limitation of non-random assignment by statistically controlling for baseline differences. The substantial partial eta squared values (.31 to .58) indicate that instructional approach explains considerable variance in outcomes beyond what pre-existing competency levels explain. This pattern

suggests that observed differences genuinely reflect intervention effects rather than selection bias or pre-existing group differences.

2. Mechanisms of Impact

Several theoretical mechanisms may explain how place-based community learning enhances digital innovator competencies:

2.1 Authentic Context and Purpose: Engagement with genuine community needs creates intrinsic motivation and meaningful learning contexts, aligning with self-determination theory (Deci & Ryan, 2000). Students reported higher engagement when addressing real problems affecting their communities compared to hypothetical classroom exercises.

2.2 Experiential Learning Cycles: The intervention's structure operationalized Kolb's (1984) experiential learning cycle, providing concrete experiences (community engagement), reflective observation (structured reflection activities), abstract conceptualization (connecting experiences to frameworks), and active experimentation (iterative solution development).

2.3 Legitimate Peripheral Participation: Following Lave and Wenger (1991), students' authentic engagement with community practices positioned them as legitimate contributors rather than peripheral observers, fostering identity development as capable problem-solvers and change agents.

2.4 Social Construction of Knowledge: The collaborative, community-embedded nature of projects facilitated Vygotskian social construction of knowledge through interaction with more knowledgeable others (community mentors, teachers, peers) within zones of proximal development (Vygotsky, 1978).

2.5 Design Thinking Integration: The intervention's explicit incorporation of design thinking processes—empathy, problem definition, ideation, prototyping, testing—provided structured approaches to innovation while maintaining flexibility for creative exploration (Brown, 2008; Razzouk & Shute, 2012).

3. Differential Effects Across Competency Dimensions

The varying effect sizes across competency dimensions offer insights into which capabilities benefit most from place-based community learning:

3.1 Design thinking's exceptionally large effects ($d=1.51$) likely reflect the intervention's explicit emphasis on human-centered, iterative problem-solving aligned with community needs. Traditional instruction rarely provides systematic exposure to design processes or opportunities for iterative refinement based on authentic stakeholder feedback.

3.2 Collaboration and communication: The relatively smaller, though still statistically significant, effect observed for collaboration and communication may be attributed to the fact that traditional instruction already incorporates group work and classroom presentations, providing students with a baseline level of these skills. The smaller effect size for collaboration ($d = 0.67$) may also reflect cultural factors in the Thai context that emphasize collective work, leading to higher initial competency levels and potential ceiling effects. In addition, the assessment instrument may not have fully distinguished basic classroom teamwork from more complex collaboration and communication skills developed through authentic engagement with community stakeholders in place-based learning contexts.

3.3 Digital technology skills and innovative problem-solving's large effects support the premise that authentic challenges requiring strategic tool

use enhance both technological competencies and innovation capabilities more effectively than decontextualized skill instruction.

3.4 Creativity and adaptability's large effects align with research showing that open-ended, authentic challenges with uncertain outcomes foster creative thinking and adaptive dispositions more effectively than structured, predetermined classroom activities (Beghetto & Kaufman, 2014; Zimmerman, 2002).

4. Implications for Educational Practice

These findings carry several practical implications:

4.1 Curriculum Design: Results support integrating place-based community learning as a core pedagogical approach rather than supplementary enrichment. The substantial competency gains justify allocating instructional time to community-engaged projects, particularly for developing 21st century skills that traditional instruction addresses less effectively.

4.2 Teacher Professional Development: Effective implementation requires teacher preparation in facilitation of project-based learning, community partnership development, design thinking processes, and formative assessment of complex competencies. Professional development should emphasize shifts from knowledge transmission to learning facilitation roles.

4.3 Technology Integration: Findings support strategic digital tool integration within authentic problem-solving contexts rather than standalone technology instruction. When students use digital tools purposefully to address genuine needs, they develop both technological skills and broader innovation competencies simultaneously.

4.4 Assessment Approaches: Traditional standardized testing inadequately captures digital innovator competencies. Assessment systems should incorporate performance-based evaluation, portfolio documentation, and authentic demonstration of competencies in real-world contexts.

4.5 Community Partnerships: Successful implementation requires sustained partnerships with community organizations, providing structures for ongoing collaboration rather than one-time service projects. Schools should invest in relationship-building and partnership infrastructure.

5. Implications for Educational Policy

At the policy level, these findings suggest:

5.1 Standards and Accountability: Educational standards should explicitly recognize and value 21st century competencies alongside traditional academic content. Accountability systems emphasizing only standardized test scores may inadvertently discourage pedagogical innovations like place-based learning that develop broader competencies.

5.2 Resource Allocation: Evidence of large intervention effects justifies resource investment in teacher professional development, community partnership coordination, and technological infrastructure supporting place-based learning implementation.

5.3 Curriculum Flexibility: Rigid curricular requirements and pacing guides may constrain the extended project timelines and responsiveness to community needs essential for effective place-based learning. Policy should provide flexibility for schools to adapt curriculum to local contexts.

5.4 Equity Considerations: While this study demonstrated effectiveness in urban schools with adequate technology access, implementation in under-resourced settings requires attention to digital

divides and community resource availability. Policy should ensure equitable access to necessary infrastructure and support.

6. Limitations and Threats to Validity

Several limitations warrant consideration:

6.1 Internal Validity: The non-random assignment creates potential selection bias despite statistical controls. Although groups showed baseline equivalence on measured characteristics, unmeasured confounds may exist. The use of ANCOVA partially addresses this concern but cannot completely eliminate selection threats.

6.2 External Validity: The sample's restriction to urban northern Thai schools limits generalizability to other contexts, particularly rural settings, different cultural contexts, or educational systems with different structures and resources. Replication across diverse settings is needed.

6.3 Instrumentation: While the assessment instruments demonstrated strong psychometric properties, competency measurement remains challenging. Self-report measures may be subject to social desirability bias or limited self-awareness. Performance-based assessments, while more authentic, introduce scoring subjectivity despite rubric use.

6.4 Implementation Fidelity: Variation in how teachers implemented the intervention may have affected outcomes. Although implementation protocols provided guidance, teachers' prior experience, beliefs, and skills likely influenced execution quality.

6.5 Maturation and History: The 16-week intervention period coincides with normal developmental changes and exposure to various experiences outside the study. While the control group design addresses these threats, complete control is impossible.

6.6 Testing Effects: Pretest exposure may have sensitized students to competency dimensions, potentially influencing posttest responses. However, testing effects should affect both groups similarly, limiting impact on between-group comparisons.

7. Directions for Future Research

Future investigations should:

7.1 Examine Long-Term Effects: This study assessed immediate posttest outcomes. Longitudinal research examining competency retention and application in subsequent academic and professional contexts would illuminate lasting impacts.

7.2 Investigate Mediating Mechanisms: While theoretical frameworks suggest mechanisms, empirical examination of specific mediators (e.g., intrinsic motivation, identity development, metacognitive awareness) would clarify causal pathways through which place-based learning affects competencies.

7.3 Explore Moderating Factors: Research investigating which students benefit most from place-based learning (considering prior achievement, socioeconomic background, learning preferences) would inform targeted implementation and differentiation strategies.

7.4 Compare Implementation Variations: Systematic comparison of different place-based learning approaches (varying in community partner types, project duration, digital tool integration levels, assessment methods) would identify optimal design features.

7.5 Conduct Economic Analyses: Cost-effectiveness studies comparing investment requirements and outcomes of place-based versus traditional approaches would inform resource allocation decisions.

7.6 Expand Geographic and Cultural Contexts: Replication across diverse settings—rural communities, different countries, varied educational systems—would establish generalizability and identify culturally-specific adaptation needs.

7.7 Examine Teacher Development: Research investigating how teachers develop competencies for facilitating place-based learning and what professional development approaches prove most effective would support scaled implementation.

7.8 Investigate Community Partner Perspectives: Most research examines student outcomes; investigating community partners' experiences, perceived benefits, and sustainability factors would provide holistic understanding of place-based learning ecosystems.

Conclusion

This quasi-experimental study provides robust empirical evidence that place-based community learning causally enhances digital innovator competencies among upper secondary students. Converging evidence from within-group comparisons, between-group comparisons, and covariance analyses—yielding consistently large effect sizes across six competency dimensions—supports confident causal interpretation despite the non-random assignment inherent in quasi-experimental designs.

The findings demonstrate that when students engage authentically with community problems through structured project-based learning integrating digital tools and meaningful community partnerships, they develop creativity, design thinking, technological skills, innovative problem-solving, collaboration, and adaptive learning dispositions significantly more

than through traditional instruction. These competencies represent precisely the capabilities contemporary societies require for navigating complexity, driving innovation, and contributing to community wellbeing.

Beyond statistical significance, the practical significance reflected in large effect sizes suggests substantial real-world impact. Students in the experimental group demonstrated competency gains approximately one standard deviation above control group students—differences likely to manifest in enhanced capability for future academic work, career success, and civic engagement.

As educational systems worldwide grapple with preparing students for rapidly evolving futures, this research offers evidence-based guidance. Place-based community learning emerges not as peripheral enrichment but as a core pedagogical approach meriting central position in curriculum design, resource allocation, and teacher preparation. By connecting learning to authentic community contexts, leveraging digital technologies purposefully, and positioning students as capable contributors to genuine challenges, education can fulfill its promise of developing competent, engaged citizens prepared to innovate and lead in the 21st century.

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https://doi.org/10.1207/s15430421tip4102_2



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Quality Assessment Guidelines and Management Strategies for the Health and Beauty OEM Industry: An ADLI Framework Approach

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Received 10 January 2026; Revised 6 March 2026; Accepted 31 March 2026

Abstract

This academic article proposes a process quality assessment framework based on the ADLI model (Approach, Deployment, Learning, and Integration) to enhance management and development strategies in Thailand's health and beauty OEM industry. The study employs a systematic synthesis of academic literature and an integrative analysis of empirical quantitative and qualitative research related to marketing management, ethical leadership based on the Buddhist principles of Iddhipāda IV and Brahmavihāra IV, and Environmental, Social, and Governance (ESG) practices within OEM enterprises in Samut Sakhon and direct-selling networks. The findings indicate that the overall process quality of the OEM industry is positioned at the "Systematic Improvement" level. Strengths are primarily observed in the Approach dimension, particularly in the integration of ethical leadership into human capital management, and in the Deployment

dimension, which emphasizes customer-oriented operational strategies. However, developmental gaps remain in the Learning and Integration dimensions, particularly in the application of big data analytics for innovation and the alignment of ESG initiatives with core operational systems. The study proposes an ADLI-based strategic assessment framework across five strategic pillars: competitiveness, innovation, sustainability, human capital, and branding to support organizational self-assessment and strategic improvement. The framework provides practical insights for executives and policymakers seeking to strengthen strategic capability and enhance the global competitiveness of Thailand's health and beauty OEM industry.

Keywords: ADLI Framework, OEM Industry, Health and Beauty, Management Strategy, Quality Assessment

Introduction

1. Principles and Rationale

In an era characterized by innovation-driven economies and borderless competition, Thailand's health and beauty Original Equipment Manufacturer (OEM) industry is undergoing a significant transformation (Aljabhan, 2023). This transformation is largely driven by evolving consumer behaviors that increasingly prioritize sustainability, transparency, and product personalization (Panitsettakorn et al., 2023). Contemporary literature suggests that competitive success in this sector no longer depends solely on manufacturing efficiency; rather, it requires proactive marketing management, continuous innovation, and alignment with Environmental, Social, and Governance (ESG) principles (Manzi, 2018).

Empirical studies conducted in Samut Sakhon one of Thailand's primary industrial clusters for the health and nutraceutical sector highlight an important structural paradox. While Thai OEM entrepreneurs demonstrate strong compliance with international manufacturing standards and achieve high levels of employee satisfaction through the integration of Buddhist ethical principles, particularly Iddhipāda IV and Brahmavihāra IV, significant challenges remain in translating strategic policies into sustained organizational learning and systematic capability development (Razmochaeva et al., 2019).

Despite the growing body of research addressing marketing management, ethical leadership, and sustainability in the OEM sector, most studies examine these dimensions independently. Limited research has systematically integrated these perspectives within a comprehensive process quality assessment framework capable of evaluating organizational maturity and strategic alignment. Moreover, the application of the ADLI (Approach, Deployment, Learning, and Integration) framework, widely used in performance excellence models such as the Baldrige framework, remains relatively underexplored in the context of Thailand's health and beauty OEM industry.

The ADLI framework provides a structured diagnostic instrument for assessing process effectiveness and organizational performance (Lim et al., 2020). Rather than merely examining organizational strategies at the conceptual level, the ADLI model evaluates the extent of implementation across functional areas (Deployment), the existence of systematic feedback and improvement mechanisms (Learning), and the alignment of processes with strategic objectives and organizational vision (Integration) (Olifirenko & Loseva, 2018).

Building upon this theoretical foundation, the present study synthesizes empirical evidence to examine how the ADLI framework can be applied to evaluate process quality and strategic development within Thailand’s health and beauty OEM industry. The study aims to contribute a conceptual framework that supports the transformation of OEM enterprises from traditional contract manufacturing toward higher-value strategic partnerships capable of generating sustainable competitive advantage in the global marketplace (Su, 2021).

2. Objectives

1.To analyze and synthesize the relationship between management strategies in the health and beauty OEM industry and the ADLI process quality framework.

2.To develop a conceptual assessment matrix for evaluating organizational process maturity across key strategic dimensions.

3.To propose strategic guidelines for advancing the Thai health and beauty OEM industry toward an “OEM 4.0” paradigm.

3. Scope of the Study

The scope of this analysis focuses on five strategic pillars: competitiveness enhancement, innovation and R&D development, sustainability and ESG integration, human capital development, and Thai OEM brand credibility. The study is based on a synthesis of empirical findings derived from research involving consumers, executives, and employees within the health and nutraceutical industry. Through this integrative approach, the proposed framework provides executives with a conceptual tool for assessing organizational process maturity and strengthening long-term competitive advantage.

4. Definitions and Terminology

For clarity and conceptual consistency, the key terms used in this article are defined as follows:

4.1 ADLI Framework

The ADLI framework refers to a process evaluation model consisting of four dimensions: Approach, Deployment, Learning, and Integration. It is widely applied in performance excellence systems such as the Baldrige Excellence Framework to assess the effectiveness and maturity of organizational processes.

4.2 Original Equipment Manufacturer (OEM)

OEM refers to a business model in which a manufacturer produces goods or products that are marketed under another company's brand name. In the health and beauty industry, OEM firms typically provide product formulation, production, and quality control services for brand owners.

4.3 Health and Beauty OEM Industry

The health and beauty OEM industry refers to enterprises engaged in the contract manufacturing of health supplements, cosmetics, and related products for brand owners, including activities such as product development, formulation, manufacturing, and quality assurance.

4.4 Environmental, Social, and Governance (ESG)

ESG refers to a set of sustainability principles that evaluate organizational performance based on environmental responsibility, social impact, and governance practices, which increasingly influence strategic management and corporate competitiveness.

4.5 Process Quality Assessment

Process quality assessment refers to the systematic evaluation of organizational processes to determine their effectiveness, consistency, and alignment with strategic objectives, often using structured frameworks such as ADLI.

4.6 Strategic Excellence

Strategic excellence refers to the stage at which organizational processes are fully integrated with strategic goals, enabling sustainable competitiveness, innovation capability, and long-term organizational development.

Conceptual Framework of the ADLI Dimensions

1. The ADLI framework comprises four fundamental dimensions for process quality assessment

The ADLI framework originates from the Baldrige Performance Excellence Model and is widely used to evaluate organizational process maturity and performance effectiveness. The four dimensions Approach, Deployment, Learning, and Integration provide a structured method for assessing whether organizational strategies are systematically designed, effectively implemented, continuously improved, and aligned with strategic objectives (Baldrige Performance Excellence Program, 2021).

Table 1

Conceptual Definitions and Evaluative Criteria of the ADLI Dimensions

Dimension	Definition	Key Evaluative Inquiry
A-Approach	The methods, tactics, or processes employed by the	“Does the organization possess systematic approaches

Dimension	Definition	Key Evaluative Inquiry
	organization to execute its strategic objectives or operational plans.	supported by empirical evidence and logical rationale?”
B–Deployment	The extent to which the established approaches are implemented across all functional areas and levels of the organization.	“Are these approaches disseminated throughout all units, and how pervasive is the implementation?”
L–Learning	The continuous evaluation, refinement, and innovation of processes based on performance data and feedback loops.	“Does the organization engage in organizational learning to enhance and elevate its operational modalities?”
I–Integration	The synergistic alignment of processes with organizational strategy, vision, operational systems, and key performance indicators.	“Are the various systems harmonized and aligned with the primary strategic goals and organizational vision?”

Note. Adapted from the Baldrige Excellence Framework (National Institute of Standards and Technology [NIST], 2021).

2. Application of the ADLI Framework to Health and Beauty OEM Management and Development Strategies

The following matrices illustrate the systematic assessment of five core strategic pillars using the ADLI framework to evaluate whether the organizational processes spanning planning, implementation, and evaluation are qualitatively integrated with the primary corporate strategies.

To operationalize the ADLI framework within the context of the health and beauty OEM industry, five strategic pillars are examined: competitiveness enhancement, innovation and R&D development, sustainability and ESG integration, human capital development, and branding and trust. Each pillar is evaluated across the four ADLI dimensions to assess the quality and maturity of organizational processes.

Table 2

Strategy 1: Competitiveness Enhancement

ADLI Dimension	Assessment Context in Health and Beauty OEM Industry
Approach	Formulation of a “Smart OEM Factory” roadmap, leveraging Automation and Digital Manufacturing technologies in compliance with GMP, ISO, and ESG standards.
Deployment	Dissemination of strategic policies to all functional departments (e.g., R&D, QC, and Production) through Key Performance Indicators (KPIs) and Standard Operating Procedures (SOPs).
Learning	Utilization of production performance data (e.g., Overall Equipment Effectiveness (OEE) and Defect Rates) to drive continuous technological and process refinements.
Integration	Alignment of quality management systems with “Sustainability” and “Customer Trust” objectives under the OEM 4.0 vision.

Table 3

Strategy 2: Innovation and R&D Development

ADLI Dimension	Process Quality Assessment
Approach	Establishment of R&D frameworks through strategic collaborations with universities, research institutes, or Original Design Manufacturer (ODM) partners.

ADLI Dimension	Process Quality Assessment
Deployment	Translating R&D initiatives into actionable projects for research and marketing teams to facilitate the transition from conceptualization to Prototyping.
Learning	Leveraging consumer insight research and trend analysis to pioneer new product categories, such as Functional Foods or Clean Beauty.
Integration	Full integration of research and innovation into marketing strategies, OEM branding, and ESG reporting frameworks.

Table 4

Strategy 3: Sustainability and ESG Integration

ADLI Dimension	Evaluative Exemplars
Approach	Implementation of “Green OEM” policies focused on carbon footprint reduction, waste minimization, and formal ESG reporting.
Deployment	Operationalization across all organizational levels, including sustainable raw material sourcing, energy management, and comprehensive employee training.
Learning	Systematic monitoring of environmental metrics (e.g., Carbon Footprint and Energy Intensity) to inform iterative improvements.
Integration	Strategic linkage between sustainability practices and brand positioning as an “Eco-conscious OEM Partner”.

Table 5

Strategy 4: Human Capital Development

ADLI Dimension	Evaluative Exemplars
Approach	Design of an “OEM Skill Competency Framework” coupled with robust Upskilling and Reskilling systems.

ADLI Dimension	Evaluative Exemplars
Deployment	Execution of professional development programs across all departments, focusing on Digital Manufacturing and R&D Management.
Learning	Integration of employee feedback mechanisms and post-training competency assessments to evaluate training efficacy.
Integration	Direct alignment of human capital initiatives with the strategic goals of Productivity and Innovation.

Table 6

Strategy 5: Trust and Thai OEM Branding

ADLI Dimension	Evaluative Exemplars
Approach	Strategic planning to enhance the “Thai OEM Standard” brand image through targeted media campaigns and international trade exhibitions.
Deployment	Cascading the branding roadmap to Marketing, OEM Sales, and Customer Relationship Management (CRM) divisions.
Learning	Analysis of the B2B Satisfaction Index and client feedback to dynamically recalibrate service strategies.
Integration	Holistic integration of branding efforts with quality assurance, innovation, and sustainability strategies.

3. ADLI Scoring Perspective: Process Maturity Levels

The ADLI framework evaluates the maturity of organizational processes. The following table delineates the progression from reactive operations to strategic integration.

Table 7

ADLI-Based Process Maturity Levels and Organizational Performance Characteristics

Maturity Level	ADLI Process Characteristics	Overall Assessment
Reactive	Inconsistent or undocumented Approach; Deployment is sporadic and localized.	Operations are primarily event-driven and lack proactive planning.
Systematic	Defined and repeatable Approach is evident; Deployment is systematically implemented across key areas.	Strategic alignment begins to yield consistent and predictable results.
Aligned	All ADLI dimensions are harmonized and directly linked to organizational strategies.	Cross-functional synergy is achieved with a focus on continuous refinement.
Integrated Excellence	ADLI is deeply embedded in the organizational culture and DNA.	High-performance innovation, adaptive learning, and strategic sustainability are realized.

Note. Adapted from Baldrige Performance Excellence Framework (NIST, 2021).

4. Summary Matrix: ADLI Assessment per Strategic Pillar

This section synthesizes the assessment of each strategic pillar, identifying core strengths and areas for optimization based on the ADLI criteria.

Table 8

Consolidated ADLI Assessment Matrix Across the Five Strategic Pillars

Strategic Pillar	A	D	L	I	Overall Level	Key Strengths	Areas for Improvement
Competitiveness Enhancement	✓ ✓	✓ ✓	✓	✓ ✓	Systematic	Robust digital systems and stringent quality standards.	Absence of structured feedback loops for mid-level management.
Innovation & R&D	✓ ✓ ✓	✓ ✓	✓ ✓	✓ ✓ ✓	Aligned	Strong collaborative research networks and partnerships.	Lack of KPIs to measure market impact and commercial viability.
Sustainability & ESG	✓ ✓	✓	✓	✓ ✓	Reactive	Formalized ESG policies are in place.	Insufficient quantification and assessment of environmental outcomes.
Human Capital	✓ ✓	✓ ✓ ✓	✓ ✓	✓ ✓	Systematic	Consistent execution of professional training programs.	Lack of comprehensive post-training impact measurement systems.

Strategic Pillar	A	D	L	I	Overall Level	Key Strengths	Areas for Improvement
Branding & Trust	✓ ✓	✓	✓	✓	Reactive	Clear strategic branding roadmap.	Deficiencies in internal strategic communication and brand buy-in.

5. Conceptual Synthesis and Policy Recommendations

The ADLI-based assessment provides a structured mechanism for evaluating the quality of strategy formulation and execution within Thailand’s health and beauty OEM industry. Through the four dimensions of Approach, Deployment, Learning, and Integration, organizations can systematically identify strengths and structural gaps in their strategic processes.

Table 9

ADLI Process Quality Assessment Matrix for Strategic Pillars

Strategic Pillar	Dimension	Quality Assessment Criteria	Score (1-5)	Weight (%)	Weighted Score	Policy Recommendations & Improvements
1. Competitiveness	A	Roadmap for Smart OEM Factory and global quality standards.	4	25	1.00	Transition toward Lean-Digital and AI-driven production.

Strategic Pillar	Dimension	Quality Assessment Criteria	Score (1-5)	Weight (%)	Weighted Score	Policy Recommendation s & Improvements
	D	Pervasive cascading of KPIs to Production, R&D, and QC units.	4	25	1.00	Implement Real-time Dashboards for performance monitoring.
	L	Feedback loops and production efficiency data analytics.	3	25	0.75	Establish an internal Knowledge Sharing Platform.
	I	Linkage with sustainability and client-centric quality goals.	4	25	1.00	Integrate with ESG frameworks and Carbon Footprint tracking.
Total Score					3.75 (Very Good)	Systematic Improvement Required
2. Innovation & R&D	A	Collaborative research management with academia and institutes.	5	25	1.25	Sustain partnerships and augment R&D budgetary allocations.
	D	Cross-functional transition to R&D,	4	25	1.00	Initiate Joint R&D ventures with

Strategic Pillar	Dimension	Quality Assessment Criteria	Score (1-5)	Weight (%)	Weighted Score	Policy Recommendations & Improvements
		Marketing, and OEM clients.				international private sectors.
	L	Utilization of consumer insights for iterative innovation.	4	25	1.00	Develop a Global Health & Beauty Trend Intelligence database.
	I	Integration into OEM branding and export-led strategies.	4	25	1.00	Promote ODM/OBM transitions to maximize value-added.
Total Score					4.25 (Excellent)	Strategic Excellence Sustained
3. Sustainability & ESG	A	Green OEM policies and carbon reduction roadmaps.	4	25	1.00	Enhance environmental metrics within the supply chain.
	D	Operationalization across Procurement,	3	25	0.75	Mandate Annual ESG Disclosure and reporting.

Strategic Pillar	Dimension	Quality Assessment Criteria	Score (1-5)	Weight (%)	Weighted Score	Policy Recommendation s & Improvements
		Energy, and Environment.				
	L	Learning from environmental outcomes for process refinement.	3	25	0.75	Create a Continuous Improvement system for energy intensity.
	I	Strategic alignment with brand trust and corporate image.	4	25	1.00	Formalize within CSR and ESG Integrated Reports.
Total Score					3.50 (Good)	Developing System

Note. Human Capital and Branding sections follow the same academic structure as above

6. Aggregate Score Interpretation and Policy Implications

The interpretation of mean scores and organizational maturity levels is adapted from the evaluation principles of the Baldrige Performance Excellence Framework, which classifies process maturity according to the extent of systematic approach, deployment, organizational learning, and strategic integration (Baldrige Performance Excellence Program, 2021).

Table 10

*Mean Score Interpretation and Organizational Maturity Classification
Based on ADLI Assessment*

Mean Score Range	Interpretation	Organizational Maturity Level
4.01–5.00	Strategically integrated processes characterized by continuous innovation and strong systemic alignment.	Strategic Excellence
3.51–4.00	Stable and well-defined processes with systematic development and moderate integration.	Systematic Improvement
3.01–3.50	Partial implementation; requires enhanced learning mechanisms and stronger strategic alignment.	Developing System
1.00–3.00	Limited strategic alignment and weak process integration; predominantly reactive management practices.	Reactive / At Risk

Based on the synthesis of empirical evidence and multidisciplinary research including marketing management, innovation studies, ESG sustainability, and ethical leadership grounded in the Buddhist principles of Iddhipāda IV and Brahmavihāra IV the following sections further analyze how these elements can be integrated within the ADLI framework to strengthen strategic development in Thailand’s health and beauty OEM industry.

7. Analysis of Research Linkages to ADLI Dimensions

This study identifies that OEM enterprises operating within the Samut Sakhon industrial cluster and direct-selling networks demonstrate

alignment with the ADLI framework through the following observations:

7.1 Approach (A)

Organizations employ ethical leadership principles namely Iddhipāda IV and Brahmavihāra IV as foundational approaches for human capital management. Marketing strategies are systematically formulated based on the 7Ps Marketing Mix, while ESG principles are increasingly adopted as part of the organizational policy framework.

7.2 Deployment (D)

Strategic policies are deployed across functional units, particularly within R&D and production departments, as illustrated in the SCG Grand case study. This implementation focuses on achieving high levels of employee satisfaction while enhancing service process efficiency.

7.3 Learning (L)

Evidence of organizational learning is demonstrated through the systematic analysis of B2B client and consumer satisfaction data. These insights are utilized to improve product attributes and distribution channels, contributing approximately 48.5% to organizational performance improvement.

7.4 Integration (I)

A developing level of integration is observed between production innovation such as herbal tea product development and the enhancement of competitive capabilities to respond to global health and wellness trends.

Strategic Assessment and Enhancement Matrix (Integrated Research Perspective)

Table 11

Strategic Transformation Matrix: From Research-Based Strengths to ADLI-Driven Enhancement

Strategic Pillar	Research-Based Strengths (Current State)	ADLI-Driven Enhancement (Next Step)
Innovation & R&D	Advanced herbal research and manufacturing innovation significantly contributing to competitiveness.	(L – Learning): Establish a <i>Trend Monitoring Intelligence System</i> to enhance R&D responsiveness to global market changes.
Human Capital	Application of <i>Iddhipāda IV</i> and <i>Brahmavihāra IV</i> to foster organizational compassion and employee satisfaction.	(I – Integration): Integrate Digital Leadership with individualized KPIs to support the transition toward the OEM 4.0 paradigm.
ESG & Sustainability	A strong desired state for sustainability exists, although current implementation remains moderate.	(A – Approach): Develop clear Green OEM standards. (D – Deployment): Enforce implementation across the entire supply chain.
Branding & Trust	High levels of satisfaction regarding personnel expertise and operational processes.	(I – Integration): Integrate the “Thai OEM Standard” with ESG reporting to strengthen international institutional trust.

Policy Conclusion: From “Contract Manufacturer” to “Strategic Partner” To propel Thai health and beauty OEM enterprises toward Integrated Excellence (ADLI score ≥ 4.25), the following strategic transformations are recommended:

1. Transforming the Approach

Organizations should transition from a traditional “Build-to-Order” model toward a “Value Co-Creation” model, where Digital Leadership acts as the primary driver of innovation and collaborative product development.

2. Strengthening Systematic Learning

Organizations should move beyond conventional satisfaction surveys and establish a structured “Lessons Learned System” to capture and analyze operational experiences, marketing feedback, and strategic outcomes.

3. Achieving Holistic Integration

Financial performance should be aligned with a customized ESG Scorecard and ethical governance framework. This integrated approach will support the development of a “Happy and Sustainable Organization”, enabling Thai OEM firms to maintain long-term resilience and competitiveness in the global health and beauty industry.

3.1 Strategic Analysis Based on the ADLI Framework

A comprehensive meta-synthesis of the literature, grounded in performance excellence theory and organizational learning frameworks (Baldrige Performance Excellence Program, 2021; Porter & Kramer, 2011; Argyris & Schön, 1978), provides the analytical foundation for examining strategic operational processes within the health and beauty OEM industry. The ADLI framework, originally conceptualized within the Baldrige Excellence Model, offers a structured perspective for evaluating process maturity across four dimensions: Approach, Deployment, Learning, and Integration.

Building upon these foundational theories, related longitudinal and contextual research within Thailand’s OEM sector (Worapongpat, 2024;

2025a) further refines the analysis by incorporating empirical insights from the Samut Sakhon industrial cluster. This integrative approach enables the categorization of strategic development into five critical dimensions.

3.1.1 Competitiveness Enhancement Strategy

Approach and Deployment: Empirical evidence indicates that pricing strategies and production management significantly influence competitive advantage (Worapongpat, 2025b). Most organizations have established a robust Approach (A) by adopting international standards such as GMP certification and industrial automation systems. These strategies are systematically Deployed (D) across production and quality control (QC) departments (Worapongpat, 2025c).

Learning and Integration: The transition toward a Smart OEM Factory requires advanced Learning (L) derived from real-time production data and digital dashboards, which support waste reduction through Lean Manufacturing practices. Furthermore, these processes must be strategically Integrated (I) with global export objectives to enhance international market penetration (Worapongpat, 2025d).

3.1.2 Innovation and R&D Strategy

Product differentiation particularly through specialized herbal tea products and customized nutraceutical formulations serves as a key driver of competitiveness in the health and beauty OEM sector (Worapongpat, 2025e).

ADLI Perspective: The Approach (A) of establishing joint R&D collaborations with universities and research institutions represents a major organizational strength. However, a critical gap remains in the Integration (I) dimension. Market intelligence and consumer insight data should be more

effectively incorporated into the early stages of research and development to promote market-driven innovation that directly responds to consumer demand.

3.1.3 Sustainability and ESG Integration Strategy

Although stakeholders express a high Desired State regarding Environmental, Social, and Governance (ESG) practices, the current level of implementation remains moderate (Worapongpat, 2025f).

ADLI Perspective

Significant improvement is required in the Deployment (D) dimension by implementing “Green OEM” standards across the entire supply chain (Worapongpat & Chaoluang, 2024). Additionally, Learning (L) mechanisms should be institutionalized through systematic ESG reporting to provide measurable assessments of environmental and social impacts.

3.1.4 Human Capital Development Strategy

A distinctive strength of Thai OEM organizations lies in the integration of Buddhist ethical principles, particularly Iddhipāda IV (Paths to Success) and Brahmavihāra IV (Sublime States of Mind), which are strongly associated with high levels of employee satisfaction (Worapongpat & Charoensuk, 2023).

ADLI Perspective

1) Approach (A): Management applies ethical values such as compassion, perseverance, and dedication as a framework for merit-based task delegation.

2) Integration (I): Future strategic development should combine these ethical foundations with Digital Leadership (Worapongpat et al., 2024). This integration aims to transform employee satisfaction into

measurable productivity gains within the OEM 4.0 era through transparent and competency-based performance evaluationsystems.

3.1.5 Trust and Branding Strategy

High levels of B2B client satisfaction, particularly regarding personnel expertise and service delivery processes, constitute the foundation of organizational trust (Worapongpat, 2023).

ADLI Perspective

The Approach (A) should evolve from traditional contract manufacturing (OEM) toward strategic brand partnerships, including ODM and OBM models. By Learning (L) from client satisfaction metrics, organizations can develop a compelling brand storytelling strategy. This narrative should be strategically Integrated (I) with safety standards and corporate social responsibility initiatives to establish the “Thai OEM Standard” as a globally recognized symbol of excellence.

3.2 Critical Discussion: Path toward Organizational Excellence

The ADLI-based strategic analysis of the health and beauty OEM industry highlights three critical themes necessary for achieving global excellence.

3.2.1 Integrating Ethical Leadership with Digital Productivity

The finding that Thai OEM executives successfully integrate Iddhipāda IV and Brahmavihāra IV to enhance employee satisfaction (Worapongpat, 2025h) aligns with theories of Servant Leadership and Humanistic Management.

However, from the Integration (I) perspective, ethical leadership alone is insufficient for sustaining long-term competitive advantage. Organizations must combine ethical leadership with Digital Leadership to transform employee satisfaction into measurable productivity

outcomes. Such a data-driven approach is essential within the Operations category of the Thailand Quality Award (TQA) framework.

3.2.2 Bridging the Gap between ESG Awareness and Implementation (The ESG Gap)

Recent research highlights a significant gap between the high Desired State of ESG commitment and the moderate Current State of operational implementation. This discrepancy reflects weaknesses in the Deployment (D) and Learning (L) dimensions of the ADLI framework.

Drawing on Porter and Kramer's Creating Shared Value (CSV) theory, ESG should not be treated merely as a corporate social responsibility initiative. Instead, it should be embedded within the organization's core strategic Approach (A).

Practical applications may include:

- 1) Herbal waste valorization
- 2) Circular production systems
- 3) Systematic carbon footprint reduction

Strengthening these mechanisms will enhance the Integration (I) dimension and reinforce international trust in environmentally regulated export markets.

3.2.3 Transitioning from Inspection-Based Management to Proactive Learning

Within the Learning (L) dimension, many Thai OEM firms primarily rely on customer satisfaction surveys, reflecting a form of reactive learning.

In contrast, high-performing organizations operating under frameworks such as the Thailand Quality Award (TQA) or the Malcolm

Baldrige Excellence Framework emphasize proactive organizational learning systems. These systems integrate R&D innovation with a formal Lessons Learned process derived from operational experiences and performance analytics.

Such practices establish a continuous improvement cycle consistent with the Plan–Do–Check–Act (PDCA) model. Advancing toward this level of maturity can reduce vulnerability to price-based competition, which has been identified as a major constraint on marketing performance. Instead, firms can shift toward value-based differentiation strategies.

Conclusion and Policy Recommendations

Based on the synthesis of this research, three primary recommendations are proposed to guide the Thai health and beauty OEM industry toward Strategic Excellence.

1) Enterprise Level: Organizations should adopt the ADLI framework as a quarterly self-assessment tool, with particular emphasis on integrating employee well-being (ethical leadership) with operational efficiency (digital leadership).

2) Industry Network Level: The establishment of an OEM Knowledge Platform is recommended to facilitate the sharing of Learning (L) outcomes, herbal innovation research, and manufacturing best practices among industry participants. Such collaboration would shift the competitive landscape from price-based competition toward product differentiation.

3) Policy Level: Government agencies should provide targeted research funding to support ESG integration among SME OEM enterprises. In addition, a national certification system such as a “Thai OEM Seal of

Excellence” based on ADLI process quality standards should be introduced to strengthen international confidence in the Thai OEM industry.

Conclusion

The assessment of process quality through the ADLI framework serves as a critical strategic instrument for guiding the transformation of Thailand’s health and beauty OEM industry. By systematically evaluating Approach, Deployment, Learning, and Integration, organizations are able to identify structural strengths and operational gaps that influence long-term competitiveness.

The findings suggest that the industry must move beyond traditional price-based competition toward a more sustainable model grounded in innovation, ethical leadership, and ESG-oriented governance. The integration of Buddhist ethical principles, particularly Iddhipāda IV, with modern management practices contributes to enhanced employee engagement, organizational learning, and operational productivity. When aligned with Environmental, Social, and Governance (ESG) frameworks, these ethical foundations further strengthen corporate credibility and international trust.

Moreover, the ADLI-based assessment highlights the importance of strengthening the Learning and Integration dimensions, particularly through the utilization of data-driven decision-making, innovation ecosystems, and strategic alignment across organizational functions.

Overall, this study provides a conceptual and practical roadmap for entrepreneurs, executives, and policymakers to conduct organizational self-assessments, identify strategic development gaps, and implement

systematic improvements. Ultimately, the framework encourages Thai health and beauty OEM enterprises to address a critical strategic question:

New Body of Knowledge (NBOK)

The systematic examination of process quality assessment in relation to the management and development strategies of the health and beauty OEM industry has generated a novel conceptual contribution. This New Body of Knowledge (NBOK) is synthesized into an integrated model that links process excellence with strategic management to enhance organizational competitiveness and sustainability.

The proposed framework conceptualizes organizational development through the four dimensions of the ADLI model: Approach, Deployment, Learning, and Integration. These dimensions collectively form a dynamic system that drives organizational excellence within the health and beauty OEM sector.



Figure 1

The Impact of Process Quality Assessment on Strategic Management and Development for the Health and Beauty OEM Industry

As illustrated in Figure 1, the synergy between process quality assessment and strategic management generates a systematic organizational mechanism consisting of four interrelated dimensions:

1. Core Philosophy (Approach – A)

The foundation of the framework is the integration of Buddhist ethical principles, particularly Iddhipāda IV and Brahmavihāra IV, as the philosophical basis of the organizational Approach (A). These principles promote perseverance, ethical leadership, compassion, and organizational harmony, contributing to the development of a “Happy and Value-Based Organization.” Such ethical foundations strengthen employee engagement and foster a supportive organizational culture conducive to long-term productivity.

2. Strategic Deployment (Deployment – D)

The Deployment (D) dimension emphasizes the systematic implementation of strategic initiatives across organizational units. This includes the operational integration of R&D innovation, digital manufacturing technologies, and “Digital OEM” standards into core business processes. Effective deployment enables organizations to respond efficiently to evolving market demands, particularly within B2B markets and direct-selling distribution networks.

3. Continuous Evolution (Learning – L)

The Learning (L) dimension focuses on the continuous improvement of organizational processes through data-driven learning mechanisms. By leveraging data analytics, customer insights, and ESG performance indicators, organizations can identify opportunities for innovation and operational

refinement. This ongoing learning process supports adaptive capability and strengthens long-term competitive advantage.

4. Strategic Integration (Integration – I)

The Integration (I) dimension highlights the alignment of organizational systems, strategies, and performance indicators. Through the holistic integration of innovation, sustainability initiatives, human capital development, and branding strategies, organizations can establish the “Thai OEM Standard” as a globally recognized benchmark of quality and reliability. This integration reinforces international brand credibility and institutional trust.

Overall, this New Body of Knowledge demonstrates that the advancement of the health and beauty OEM industry cannot rely on isolated improvements in individual functions. Instead, sustainable transformation requires a comprehensive and systematic assessment of organizational processes guided by the ADLI framework. Through the integration of ethical leadership, innovation management, and ESG-oriented governance, the industry can achieve high competitiveness, cutting-edge innovation, and sustainable long-term growth in the global marketplace.

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Path Optimization of Sino-Thai Education Collaborative Talent Cultivation Based on OBE Theory*

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Received 1 February 2026; Revised 25 March 2026; Accepted 26 March 2026

Abstract

Against the backdrop of the deep integration of China's Belt and Road Initiative and Thailand's 4.0 Initiative, Sino-Thai educational cooperation has stepped into a high-quality development stage. However, the traditional cooperation model faced prominent bottlenecks, including the disconnection between educational objectives and industrial demands, insufficient cross-school curriculum synergy, and a rigid single evaluation system. These issues have hindered the cultivation of interdisciplinary talents. Taking Zhejiang Yuexiu University (ZYU) as a case study, this paper explored the optimization paths of Sino-Thai educational collaborative talent cultivation under the guidance of Outcome-Based Education (OBE) theory. The research identified four optimization paths, namely (1) anchor collaborative education goals based on OBE's goal orientation, (2) co-construct curriculum system based

* This project is a 2025 teaching research project of Zhejiang Yuexiu University (Project No.: 2505270008) and also one of the research achievements of its Northeast Asia Research Center.

on OBE's outcome-oriented instructional design, (3) innovate teaching models based on OBE's student-centeredness, and (4) improve multi-evaluation mechanism based on OBE's continuous improvement. Furthermore, each path is elaborated with specific practices. Guided by the core tenets of OBE, namely goal orientation, student-centeredness, and continuous improvement, the four optimization paths realized the precise alignment of talent quality assurance system. The practical practices of the university verified the effectiveness of the OBE-based optimization paths. Furthermore, the university provided cultivation with Sino-Thai industrial needs, the deep integration of Sino-Thai educational resources, the effective improvement of cross-cultural teaching effectiveness, and the construction of a closed-loop talent cultivation a replicable practical paradigm for Sino-Thai educational cooperation and the cultivation of international compound talents in higher education institutions.

Keywords: OBE Theory, Sino-Thailand Education Cooperation, Talent Cultivation, Collaborative Education, Path Optimization

Introduction

The deep alignment of China's Belt and Road Initiative with Thailand's 4.0 Initiative has driven Sino-Thai educational cooperation to form a multi-field and diversified development pattern (Li, 2019; Cui & Wen, 2022). The China Education Modernization 2035 Plan explicitly emphasized the need to create a new pattern of educational opening-up, enhance international educational exchange and cooperation, and advance the high-quality development of Sino-foreign cooperative education (The State Council of the People's Republic of China, 2025). As important partners

along the Belt and Road, China and Thailand accumulated rich achievements in academic education, language training, and scientific research cooperation, with regular joint training, student exchange programs, and frequent cultural and academic exchanges (Ren, 2024).

With the deepening of regional economic and trade cooperation, the inherent shortcomings of the traditional Sino-Thai educational cooperation model became increasingly prominent. Hence, these issues restricted the quality of collaborative talent cultivation (Wang, 2019; Luo et al., 2021; Xiao & Tian, 2024; Ding, 2025). Specifically, first, the cultivation objectives were not closely aligned with market demands in key areas of Sino-Thai cooperation, including trade, tourism, the digital economy, and agriculture. Meanwhile, the curriculum design of joint training programs was disconnected from the practical needs of industry. These discrepancies have resulted in inadequate employability and adaptability of students. Second, the forms and content of cooperation were relatively single, the cross-school collaboration was inadequate, and teaching resources were scattered. These issues have led to the inadequate development of interdisciplinary research cooperation in the humanities, social sciences, and arts. Third, the evaluation system overemphasized academic performance and failed to fully assess students' comprehensive qualities like cross-cultural communication, practical innovation, and teamwork. Fourth, practical challenges (such as the unbalanced development of regional educational service trade, cultural disparities, language barriers, and irrational human resource allocation) and budget allocation further restricted the deepening of cooperation. Fifth, there is an urgent need to optimize the talent structure of Sino-Thai educational cooperation, expand the scale of scientific research

cooperation, improve the quality of cooperative education programs, and strengthen the qualification assessment of cooperative institutions and the supervision of teaching management.

1. Principles and Rationale

Outcome-Based Education (OBE), first proposed by American scholar Spady in 1981, has emerged as a mainstream theory guiding global higher education reform due to its proven application effects (Spady, 1994). Centered on students' ultimate learning outcomes, OBE emphasizes aligning educational objectives with social needs, diversifying learning effect assessments, and continuously improving educational systems (Spady, 1994; Kaliannan & Chandran, 2012; Jia & Jing, 2020). The outcome-orientation, student-centeredness, and sustainable development are three key elements of OBE. As educational philosophy, it was summarized as “student-centered, outcome-oriented, and continuous improvement” (Wang et al., 2025). Furthermore, this concept has been further extended to four core implementation elements: explicit learning outcomes, outcome-oriented instructional design, diversified teaching and evaluation methods, and a closed-loop mechanism for continuous improvement (Feng, 2016; Zhou & Zhou, 2018; Wang et al., 2026). At its core, OBE ensures that educational activities closely align with social needs, enabling students to acquire career-relevant and socially applicable knowledge, skills, and competencies through systematic learning (Venkatesh & King, 2021).

International research on transnational higher education has advanced around collaborative talent cultivation, curriculum development, digital-enabled OBE, and industry-driven reform. These studies have confirmed that OBE is highly relevant to Sino-Thai educational cooperation.

For example, Knight (2023) emphasized that high-quality transnational cooperation relies on aligning talent cultivation goals with regional industrial demands and establishing government-enterprise-university collaborative mechanisms. For cross-border curriculum development, Xi (2022) found that according to the talent training program of professional courses, curriculum resources are optimized, cases are selected, PBL teaching method is applied, classroom interaction and curriculum thinking and politics are combined to enhance the professional knowledge level and strengthen the quality training of students. In this way, students can become responsible talents. In digital empowerment, Bower (2024) noted that digital platforms break geographical barriers to build immersive cross-border teaching scenarios, while Mahrishi et al. (2025) highlighted that combining digital technology with OBE enhances students' practical innovation and cross-cultural communication abilities. Gonzalez et al. (2025) further underscored enterprise participation in the entire talent cultivation process as the core of OBE-based industry-university collaboration.

In contrast, research on Sino-Thai educational cooperation has mainly focused on macro-level analyses of the progress, dilemmas, and optimization strategies of bilateral cooperation (Cui & Wen, 2022; Li, 2024; Ren, 2024). However, there are some notable gaps, such as insufficient micro-level case studies on specific universities, inadequate analysis of how OBE's core tenets guide collaborative talent cultivation paths, and limited integration with international achievements in digital empowerment and industry-driven reform (Knight, 2023; Bower, 2024; Gonzalez et al., 2025). These research gaps have led to the formulation of less targeted optimization strategies.

The core tenets and implementation logic of OBE align highly with the practical requirements of Sino-Thai educational collaborative talent cultivation. Specifically, (1) its goal orientation addresses the misalignment between traditional cultivation objectives and industrial demands; (2) student-centeredness promotes cross-cultural teaching innovation and enhances students' comprehensive qualities; and (3) the emphasis on sustainable development drives the construction of multi-subject evaluation and feedback mechanisms for continuous optimization of collaborative education systems. To fill existing research gaps, this study aimed to explore the specific implementation path of OBE-based Sino-Thai collaborative talent cultivation and verify its effectiveness through practice for enriching case-based research on Sino-Thai educational cooperation by taking Zhejiang Yuexiu University (ZYU) as a case study. Finally, provide a replicable paradigm for integrating OBE theory with transnational collaborative talent cultivation.

2. Scope of the Study

Zhejiang Yuexiu University in Shaoxing, China, was selected as the research subject of this study. Founded in 1981, ZYU is a full-time undergraduate institution featuring foreign language education and interdisciplinary development. It became a bachelor's degree-granting university in 2008 and was designated as a candidate institution for master's degree programs in Zhejiang Province in 2017. Currently, the university offers 17 foreign language programs (including Thai) spanning six major disciplinary areas, with approximately 17,000 undergraduate students enrolled as of 2026 (Zhejiang Yuexiu University, 2026). The university has prominent advantages in international education and multilingual talent cultivation. In

particular, its Foreign Language and Literature discipline is a first-class discipline in Zhejiang Province, and several programs have been selected as national or provincial first-class undergraduate majors, while the literature discipline has consistently ranked among the top in China's private universities in independent evaluations (Zhejiang Yuexiu University, 2025). ZYU places great emphasis on internationalization, having established cooperative relationships with over 180 universities in more than 30 countries and sending hundreds of students on overseas exchange programs annually. The university accumulated solid practical experience in Sino-Thai educational cooperation, and built a multi-dimensional cooperation system covering basic education, higher education, and government-enterprise collaboration. Importantly, the university is a typical representative for studying the optimization of OBE-based Sino-Thai educational collaborative talent cultivation paths (Zhejiang Yuexiu University, 2026).

The research objective of this paper was to explore the optimized path of Sino-Thai educational collaborative talent cultivation based on OBE theory by taking ZYU as a case, so as to solve the practical predicament of cross-regional collaborative education in Sino-Thai educational cooperation, improve the quality of talent cultivation, and provide talent support for Sino-Thai industrial cooperation.

3. Research Methods

This study employed a qualitative, empirical case study approach, taking Zhejiang Yuexiu University as the research subject. As a Thai language instructor at the School of Oriental Languages, Zhejiang Yuexiu University (SOL-ZYU), the researcher collected research-related information by leveraging professional experience, institutional resources, and authoritative

sources (e.g., the university's official website and institutional reports). The researcher integrated first-hand practical experience in Sino-Thai educational cooperation and talent cultivation with the university's internal documents (e.g., talent cultivation plans, cooperation reports) and official institutional publications, thereby ensuring the authenticity, objectivity, and practical validity of the research. ZYU was selected for its distinctive foreign language education strengths, mature Thai language talent cultivation system, rich Sino-Thai cooperation experience, and systematic OBE-based explorations, providing a typical practical sample, while the researcher's frontline identity ensured access to in-depth first-hand information.

The research data were analyzed using a qualitative content analysis approach, with a specific focus on the OBE-guided optimization of Sino-Thai collaborative talent cultivation paths. After sorting, classifying and eliminating invalid information, data were coded by four OBE-themed dimensions (including goal anchoring, curriculum co-construction, teaching innovation, evaluation improvement) to extract the university's specific measures and effects. The logical connection between these measures and OBE tenets was further analyzed to clarify the causal relationship between OBE implementation and cultivation quality improvement, and summarize the systematic optimization path. The trustworthiness of the research was ensured through the researcher's insider perspective, cross-verification of tripartite data, and the derivation of conclusions from the analysis of practical materials.

Sino-Thai Education Collaboration Path Optimization in ZYU

Taking "Foreign Language Plus" concept as the core guidance, ZYU

built a multi-dimensional Sino-Thai cooperation system. The system covers basic education, higher education and government-enterprise collaboration under the background of the deep integration of China’s Belt and Road Initiative and Thailand’s 4.0 Initiative. Specifically, (1) in basic education, the university built practical bases in Thai schools and sent Chinese Language Education majors to Thailand for teaching practice every year; (2) in higher education, the university deepened cooperation with Thai universities, like Thammasat University and Chiang Mai Rajabhat University, and upgraded the joint training model from “language+culture” to “language+skills”; (3) in government-enterprise collaboration, the university established cooperative relations with Thai government agencies and enterprises, and built overseas practice bases to lay a market-oriented foundation for talent cultivation (Zhejiang Yuexiu University, 2025).

The university focuses on expanding the depth and breadth of Sino-Thai educational cooperation and improve the quality of collaborative talent cultivation. The university employed the core tenets of OBE theory as the guidance, and systematically optimized the implementation path of Sino-Thai educational collaborative talent cultivation from four dimensions. There were goal anchoring, curriculum co-construction, teaching innovation and evaluation improvement. Each optimization path was closely linked to the core elements of OBE. Importantly, the implementation of the path effectively solved the practical dilemmas of traditional Sino-Thai educational cooperation, and realized the high-quality development of collaborative talent cultivation.

1. Anchor Collaborative Education Goals Based on OBE’s GoalOrientation

OBE’s core tenet of goal orientation requires that educational

objectives must be closely aligned with social and industrial needs, and the setting of talent cultivation objectives must be based on in-depth research on market demand (Spady, 1994; Venkatesh & King, 2021). However, the traditional Sino-Thai educational cooperation model has the disconnection between cultivation objectives and industrial demands. To address this, the university took “in-depth research on social needs” as the core measure, and realized the precise anchoring of Sino-Thai educational collaborative talent cultivation objectives. This path was primarily implemented through industry-university collaboration and inter-institutional partnerships. This path can be taken as a direct application of OBE’s goal orientation in Sino-Thai educational cooperation. Moreover, the university laid a fundamental foundation for the follow-up curriculum design, teaching innovation, and evaluation system construction.

1.1 Industry-University Joint Market Research to Capture Industrial Talent Demand

The university cooperated with enterprises engaged in Sino-Thai industrial cooperation to conduct in-depth market research, and to determine the core competencies that Sino-Thai compound talents should possess. The university regards enterprises as the primary stakeholders in reflecting industrial demand. Taking Zhejiang SLING Automobile Bearing Co., Ltd. for example. It is a leading enterprise in China’s automotive bearing industry, has built a production base in Thailand’s Ayutthaya Industrial Park, and would like to further expand its business in the ASEAN market. The enterprise had an urgent demand for compound talents who are proficient in Thai and familiar with Southeast Asian culture and industrial rules (School of Oriental Languages of Zhejiang Yuexiu University, 2021). In April 2025, SOL-

ZYU held a symposium with the enterprise, and in July 2025, the research team of SOL-ZYU visited the enterprise’s Thai production base for on-site investigation and in-depth discussion (School of Oriental Languages of Zhejiang Yuexiu University, 2025a).

The in-depth cooperation between ZYU and SLING was an OBE-based practice of “industrial demand guiding educational objectives”. Through the investigation and discussion, the university accurately captured the industrial demand for Thai language compound talents in key fields, such as Sino-Thai finance, logistics, and purchasing. The university also clarified that the core cultivation objectives of Thai language majors are to master professional Thai application skills, understand Southeast Asian cultural norms, and possess cross-border industrial practical ability. On this basis, the university optimized the “language+skill” training model of Thai language majors, and added practical teaching content related to cross-border logistics, international trade, and enterprise management. The university realized the precise alignment of talent cultivation objectives with industrial demands. At the same time, the cooperation also provided high-quality employment platforms for graduates of the university. Moreover, the university laid a solid foundation for the deepening of the industry-university collaborative education mechanism.

1.2 Cross-School Exchange with Thai Universities to Align Sino-Thai Cultivation Standards

To accurately grasp the industrial development trends and talent market demand characteristics of both China and Thailand, as well as to realize the alignment of Sino-Thai educational collaborative talent cultivation standards, the university sent a delegation to visit Khon Kaen

University and Huachiew Chalermprakiet University in Thailand in 2025 (School of Oriental Languages of Zhejiang Yuexiu University, 2025a). The exchange and discussion with Thai universities was an important measure for the university to anchor collaborative education goals based on OBE theory. The university could avoid the one-sidedness of talent cultivation objectives caused by a single perspective, and further ensure that the cultivated talents can adapt to the development needs of both Chinese and Thai markets.

In the exchange with Khon Kaen University, the university conducted in-depth discussions on the construction of undergraduate student exchange channels, the coordination of teacher title promotion mechanisms, the innovation of the “3+1” and “foreign language plus” compound talent cultivation model, the optimization of curriculum system connection, and joint scientific research projects. At present, a graduate of the university has successfully enrolled in Khon Kaen University for a master’s degree. This laid a practical foundation for the inter-university talent cultivation cooperation and the alignment of cultivation standards. In the exchange with Huachiew Chalermprakiet University, the university focused on discussing the quality improvement of the “3+1” segmented training model, and clarified that the cooperation model would be expanded from the traditional “language+culture” basic training framework to the interdisciplinary direction of “language+professional skills (especially finance, business)”. This adjustment of the cooperation model was based on the joint judgment of the talent demand of the two countries’ markets. Additionally, the university was a concrete embodiment of OBE’s goal orientation in guiding the setting of Sino-Thai collaborative talent cultivation

objectives.

2. Co-Construct Curriculum System Based on OBE's Outcome-Oriented Instructional Design

OBE's outcome-oriented instructional design requires that the curriculum system must be designed around the expected learning outcomes of students, and the curriculum content must be closely linked to the core competencies that students need to master. However, traditional Sino-Thai educational cooperation model has the problems of scattered teaching resources and insufficient cross-school curriculum synergy (Feng, 2016; Wang et al., 2025). To respond to this challenge, the university built a three-dimensional integrated curriculum module of “language foundation+ professional empowerment+cultural competence”.The university took “curriculum system iteration and optimization” as the core approach, and reconstructed the curriculum content according to the demands of Sino-Thai cooperation. This path was an application of OBE's outcome-oriented instructional design in Sino-Thai educational cooperation. It ensured the deep integration of Sino-Thai educational resources and laid a curriculum foundation for the cultivation of students' core competencies required for Sino-Thai cooperation.

2.1 Build a Three-Dimensional Integrated Curriculum Module

The university took the iteration of the curriculum system as the core, and built a three-dimensional integrated curriculum module of “language foundation+professional empowerment+cultural competence”. First, it broke the traditional single language curriculum system. Second, it ensured the all-round upgrade of talent cultivation from knowledge imparting to cross-cultural literacy cultivation. This curriculum module

design is fully in line with OBE's outcome-oriented instructional design principle. In particular, (1) the language foundation module was designed to cultivate students' Thai language application ability. It was the basic competency for Sino-Thai cooperation; (2) The professional empowerment module was designed to cultivate students' professional skills in finance, business, tourism and other fields. It was the core competency for Sino-Thai industrial cooperation; (3) The cultural competence module was designed to cultivate students' cross-cultural communication and cultural adaptation ability. It was the key competency for cross-border cooperation. The three modules were interrelated and mutually supportive, and together form a complete curriculum system for the cultivation of Sino-Thai compound talents.

2.2 Reconstruct Curriculum Content to Align with Sino-Thai Cooperation Demands

On the basis of building the three-dimensional integrated curriculum module, the university reconstructed the curriculum content of each module according to the actual demands of Sino-Thai cooperation. The university ensured that the curriculum content was highly consistent with the expected learning outcomes of students and the practical needs of Sino-Thai cooperation. For the language foundation module, the university focused on practical scenarios and added special courses such as Business Conversation, Tourism Thai, and Business Thai Interpretation for Thai language majors. The university effectively enhanced students' Thai language application ability in professional scenarios. For the professional empowerment module, the university deepened the reform of case-based teaching. For example, it introduced typical Sino-Thai cooperation cases in

the Selected Readings of Current Affairs Articles course. So that students can realize the deep connection between professional knowledge and practical application. For the cultural competence module, the university innovated the practical training model, offered Thai cultural practice courses such as the production of traditional Thai food and handicrafts, and organized cultural experience activities such as the Loy Krathong Festival (School of Oriental Languages of Zhejiang Yuexiu University, 2024). The university broke down cross-cultural cognitive barriers through immersive experiences.

2.3 Build a Cross-Regional Teaching Resource Sharing Ecosystem

To break the geographical constraints of Sino-Thai educational cooperation and realize the sharing of high-quality teaching resources, the university took the digital empowerment of OBE as the starting point, and built a hybrid online and offline course of Thai Society and Culture based on the Wisdom Tree platform. This practice was an important exploration of combining digital technology with OBE-based curriculum co-construction in Sino-Thai educational cooperation. The university effectively expanded the coverage and influence of Sino-Thai cultural education curriculum. As of January 31, 2026, the course had been running stably for 12 semesters, with a total of 7,639 students participating in the learning and more than 27,281 interactive behaviors, covering 226 universities in China. Moreover, there are 10 universities incorporated the course into their credit management system, making it a benchmark shared resource in the field of Sino-Thai cultural education in Chinese universities (Wisdom Tree, 2026).

3. Innovate Teaching Models Based on OBE's Student-Centeredness

OBE's student-centered tenet requires that teaching activities must take students as the main body, focus on the cultivation of students'

practical ability and comprehensive quality, and adopt diversified teaching models to meet the individual learning needs of students (Kaliannan & Chandran, 2012; Wang et al., 2026). However, the traditional Sino-Thai educational cooperation model is plagued by several issues, including rigid traditional teaching methods, a disconnect between knowledge instruction and practical application, and the inadequate development of students' cross-cultural perspectives. To tackle these issues, ZYU upheld the practical and cross-cultural characteristics of language disciplines, and built a diversified new teaching system integrating project-based learning, government-enterprise-school collaborative teaching, cross-border synchronous classrooms, and practical teaching system construction. This practice was a concrete application of OBE's student-centeredness in Sino-Thai educational cooperation. It effectively enhanced the effectiveness of cross-cultural teaching and promoted the all-round development of students' core competencies.

3.1 Deepen Project-Based Learning (PBL) to Cultivate Students' Problem-Solving Capabilities

Guided by Dewey's "learning by doing" theory and based on OBE's student-centeredness, the university innovatively designed cross-cultural collaborative PBL projects by leveraging the situational and practical characteristics of language disciplines. The core of this teaching model is to take students as the main body of the project, and cultivate students' problem-driven abilities, cross-cultural communication abilities, and teamwork abilities. The cultivation of abilities can be achieved through the whole process of project design, implementation, and evaluation. The university paired Thai interns from Huachiew Chalermprakiet University (who

interned at ZYU for one year) with Thai language majors, and guided them to jointly plan and implement themed events such as Thai calligraphy competitions and Thai dubbing contests. In the process of project implementation, students improved their Thai listening, speaking, reading and writing skills in a real bilingual interactive context. They gained an in-depth understanding of Thai social thinking logic through cooperation with Thai peers, and also accumulated practical abilities such as communication and coordination, team management beyond textbooks.

It can further expanded the application scenarios of the PBL model to teaching practice co-construction, transnational sports events, thematic translation services, and cultural sharing salons. It is worthwhile to establish a regular cross-cultural collaborative learning mechanism. This expansion made the PBL model more in line with OBE's student-centeredness, and provided more diverse practical scenarios for students. The expansion effectively promoted the transformation of students' knowledge into practical ability.

3.2 Deepen Government-Enterprise-School Collaborative Teaching to Empower Classroom with Industry Experts

With the deepening of Sino-Thai economic and trade cooperation, the demand for compound talents in cross-border e-commerce and other fields became increasingly urgent. Based on OBE's student-centeredness and the requirement of aligning educational outcomes with industrial needs (Gonzalez et al., 2025), the university deepened the government-enterprise-school collaborative teaching model, and introduced industry experts to participate in classroom teaching. The university effectively solved the problem of the disconnection between classroom teaching and industrial

practice. In July 2021, the university invited the Thai Chinese Cross-Border E-Commerce Association and Jincheng E-Commerce Co., Ltd. to hold a Summer Training Camp on Southeast Asian Cross-Border E-Commerce Operations for teachers and students (Zhejiang Yuexiu University, 2021).

The training camp adopted a three-step progressive model of “case study - practical practice - concentrated review”. It focused on the core job requirements of cross-border e-commerce. Importantly, it systematically covering the entire chain of core skills such as industry theory, business model, operation strategy, logistics and customs clearance. Industry experts combined their practical experience to teach, making the teaching content more targeted and practical. Students directly faced the practical operation scenarios of the industry front line. It not only accurately master professional knowledge, but also formed a three-dimensional understanding of the cross-border e-commerce industry ecosystem. This government-enterprise-school collaborative teaching model took students’ practical ability cultivation as the core, and it was an important practice of OBE theory in guiding the integration of industry and education in Sino-Thai educational cooperation.

3.3 Create Cross-Border Synchronous Classrooms to Build Cross-Cultural Immersive Teaching Scenarios

Based on OBE’s student-centeredness and the digital empowerment of OBE (Bower, 2024), the university relied on mature online teaching platforms to create cross-border synchronous classrooms. It can help to break the geographical constraints of Sino-Thai educational cooperation, as well as upgrad the traditional “one-way knowledge transmission” to “two-way cultural integration”. There are 3 cores of this cross-border synchronous classroom, nemyaly (1) to build real-time

interactive teaching scenarios for Chinese and Thai teachers and students; (2) to enhance the immersion and interactivity of cross-cultural teaching; and (3) to take the deep integration of “language+culture” as the teaching goal. It is consistent with OBE’s requirement of cultivating students’ comprehensive cross-cultural quality.

The university regularly held online lectures with senior experts from Thai universities in cross-border synchronous classrooms. For example, the university invited Dr. Kaowta Chantranuson from Khon Kaen University to give an online lecture on Thai naming culture for teachers and students of the Thai Language Department in 2025. Dr. Kaowta elaborated on the traditional customs and modern evolution of Thai naming culture, and the interactive Q&A session after the lecture further stimulated students’ interest in Thai culture (School of Oriental Languages of Zhejiang Yuexiu University, 2025b). Through the interpretation of Thai native experts, students could directly explore the essence of Thai language and culture, deepen their understanding of Thai language and culture in academic exchanges. Besides, their cross-cultural communication ability was effectively improved. On the one hand, the cross-border synchronous classroom enriched the forms of Sino-Thai cross-cultural teaching. On the other hand, it was an important innovation of digital technology combined with OBE theory in Sino-Thai educational cooperation.

3.4 Strengthen the Construction of Practical Teaching System to Realize Hierarchical and Progressive Education

Based on OBE’s student-centeredness and the requirement of sustainable development of students’ abilities, the university strengthened the construction of a practical teaching system, and built a diversified

practical education path for students. It realized the hierarchical and progressive cultivation of students' practical ability and cross-cultural communication ability. This practice confired to take students' ability development as the core, and provide students with multi-level and multi-scenario practical opportunities. It is in line with OBE's requirement of cultivating students' lifelong learning ability and practical innovation ability.

Furthermore, the university took three specific measures to build a practical teaching system. To be specific, (1) organized students to participate in volunteer translation work for major international events and Sino-Thai economic, trade and cultural exchange activities (such as the Asian Games, the Global Digital Trade Expo). It realized the precise matching between theoretical knowledge and practical application; (2) Formed the "Han-Thai Harmony" overseas teaching practice team, and send students to primary and secondary schools in Thailand to carry out Chinese language teaching practice. It systematically enhanced students' cross-cultural communication and teaching practice abilities; (3) Deepened industry-university collaboration in education, and established internship and practice base cooperation with domestic and overseas enterprises. This practice fully covered students' domestic and international internship and practice needs. The hierarchical and progressive practical teaching system ensured that students' practical ability could be continuously improved in different learning stages, and it laid a solid practical foundation for the cultivation of Sino-Thai compound talents.

4. Improve Multi-Evaluation Mechanism Based on OBE's Continuous Improvement

OBE's sustainable development core tenet requires the

establishment of a diversified evaluation mechanism and a closed-loop feedback system. The purpose is to comprehensively assess students' learning outcomes, and realize the continuous optimization of the educational system through the analysis and application of evaluation results (Spady, 1994; Mahrishi et al., 2025). But, there are problems of the single evaluation subject, the overemphasis on academic performance, and the lack of feedback and application of evaluation results in the traditional Sino-Thai educational cooperation model. To address this issue, the university has taken multi-evaluation as the core, process control as the means, and feedback iteration as the support, and has further constructed a full-chain evaluation and assurance system. The system includes multi-subject collaborative evaluation, process evaluation methodology reform, and closed-loop feedback iteration mechanism. This practice was an application of OBE's continuous improvement core tenet in Sino-Thai educational cooperation. It built a closed-loop defense line for the quality of Sino-Thai educational collaborative talent cultivation, and realized the continuous optimization of the collaborative education system.

4.1 Build a Multi-Subject Collaborative Evaluation System to Achieve Full Coverage of Evaluation Dimensions

Based on OBE's requirement of comprehensive evaluation of students' learning outcomes, the university broke the limitation of a single evaluation subject in traditional education. The university established a four-dimensional collaborative evaluation system of "student self-evaluation - peer evaluation - teacher evaluation - enterprise evaluation". This evaluation system took the mastery of knowledge as the basis, and took the core competencies required for Sino-Thai cooperation as the key evaluation

indicators. Finally, formed a comprehensive “knowledge+ability” evaluation model. It is worth mentioning that core competencies including teamwork ability, problem-solving ability, cross-cultural communication ability. This evaluation system solved the problem that the traditional evaluation system overemphasizes academic performance and cannot fully assess students’ comprehensive quality.

To enhance the effectiveness of practical ability evaluation, the university further established a phased internship evaluation mechanism under the guidance of OBE theory. It required students to complete a professional awareness internship in the freshman summer and a professional practice internship in the sophomore summer. The internship results were presented in the form of practice reports and project achievements, and jointly evaluated by university supervisors and corporate trainers. The dual evaluation perspective of universities and enterprises ensured the objectivity and authenticity of the internship evaluation results. Additionally, it made the evaluation results more in line with the industrial demand for talents. Through the multi-subject collaborative evaluation system, the university can realize the full coverage of the evaluation dimensions of Sino-Thai compound talents, and lay a foundation for the continuous improvement of the collaborative talent cultivation system.

4.2 Revamp Process Evaluation Methodology to Realize the Transformation of Evaluation Model

Based on OBE’s requirement of process evaluation of students’ learning outcomes, the university broke through the limitation of the traditional summative test paper assessment, and built a diversified process assessment system adapted to different course types. The university aimed

to realize the assessment goal of “combining examination with learning and promoting learning through examination”. The core of the process evaluation methodology reform is to take students’ learning process and practical ability as the core of evaluation, and adopt different evaluation methods for different types of courses. This path ensured comprehensively and dynamically assess students’ learning outcomes.

For language skills courses, the university adopted contextualized ability assessment methods, and dynamically evaluated students’ language application ability through tasks, such as Thai dubbing, conversation performance, and video content summary. The university offers Thai traditional art training courses (such as Thai cuisine preparation, Krathong design and production, Thai traditional painting) for Thai language majors. For these Thai traditional art training courses, the university adopted outcome presentation evaluation, and assessed students’ learning outcomes through concrete works. For Thai tourism courses, the university adopting the traditional on-site scenario-based evaluation method. The university organized students to deliver Thai-language guided tours of iconic buildings and scenic spots. Students’ performance has been comprehensively evaluated in terms of language expression, cultural understanding, and emergency response capabilities. The diversified process assessment system fully reflects OBE’s student-centeredness, and it effectively promoted the improvement of students’ practical ability and comprehensive quality. A typical case is that a junior student of the university independently led a Thai tour group of more than ten people during the internship. It fully demonstrated the practical application effect of classroom learning, and further verified the effectiveness of the process

evaluation methodology reform.

4.3 Establish a Closed-Loop Feedback Iteration Mechanism to Enhance the Application Effectiveness of Evaluation Results

Based on OBE's continuous improvement core tenet, the university established a regular evaluation feedback mechanism, and formed a closed-loop management process. The management process designed as "evaluation - feedback – optimization". This practice not only realized the deep integration of evaluation and teaching, but also ensured that the evaluation results could be effectively applied to the optimization of the curriculum system and teaching strategies. This is the key link to realize the sustainable development of Sino-Thai educational collaborative talent cultivation. What's more, it is one of the core embodiments of OBE's continuous improvement in Sino-Thai educational cooperation.

Additionally, the university organized regular student forums, lecturer teaching-research meetings, and Sino-Thai school-enterprise collaborative education seminars every semester, and collected multi-source feedback from students, teachers, and enterprises. The university systematically analyzed the feedback information, accurately identified the pain points and blockages in the teaching process, and provided empirical evidence for the adjustment of teaching strategies and the optimization of the curriculum system. For example, based on the job requirement feedback from Thai cooperative enterprises, the university added applied course modules such as Business Thai Interpreting, All-Media Operations Training, Thai New Media Operations, and Cross-Border E-Commerce Practice to the Thai language teaching curriculum system. This practice ensured precise alignment between talent cultivation and industry needs. The closed-loop

feedback iteration mechanism made the Sino-Thai educational collaborative talent cultivation system of the university form a positive cycle of “evaluation-optimization-improvement”. Finally, it effectively promoted the continuous high-quality development of collaborative talent cultivation.

Practical Effects of OBE-Based Path Optimization

Based on OBE theory, this study explores the path optimization of Sino-Thai educational cooperation at the university. The talent cultivation practices implemented by the university have achieved results, verifying the effectiveness of OBE theory and its causal correlation with the improvement of talent cultivation quality. By implementing OBE’s core tenets across goal anchoring, curriculum co-construction, teaching innovation, and evaluation improvement, the university effectively resolved traditional cooperation bottlenecks and achieved high-quality talent cultivation. Academically, The university ranked first in the 2026 China Private Undergraduate Universities Research Competitiveness Ranking (Humanities and Social Sciences) (Zhejiang Yuexiu University, 2026). In graduate employment, 2025 Thai language program graduates achieved a 100% employment rate, earning wide employer recognition for their job adaptability and core competitiveness. Internationally, three students are pursuing exchange studies at Huachiew Chalermprakiet University, while the university is expanding cooperation with Chulalongkorn University Language Institute and Walailak University, deepening and broadening Sino-Thai educational collaboration.

Conclusion

Against the backdrop of China’s Belt and Road Initiative and Thailand’s 4.0 Initiative, Sino-Thai educational cooperation is shifting from scale expansion to quality improvement. However, the traditional cooperation models are confronted with prominent bottlenecks, including misaligned talent cultivation objectives, inadequate curriculum synergy, inflexible evaluation systems, and a disconnect between teaching and practice. Taking ZYU as a case, this study explored OBE-based optimization paths for Sino-Thai collaborative talent cultivation and clarified the theory’s guiding logic.

This study identified four OBE-aligned core paths driving high-quality development, each of which has a clear causal correlation with the improvement of talent cultivation quality. In short, there were (1) anchor collaborative education goals based on OBE’s goal orientation, (2) co-construct curriculum system based on OBE’s outcome-oriented instructional design, (3) innovate teaching models based on OBE’s student-centeredness, and (4) improve multi-evaluation mechanism based on OBE’s continuous improvement. What’s more, each path is elaborated with specific practices.

The practical practices of the university verified the effectiveness of the OBE-based optimization paths. To be specific, the university realized the shift from “language+culture” to “language+skills” compound talent cultivation, with a 100% employment rate for 2025 Thai-language graduates and enhanced research competitiveness and international influence. The university’s practice provides a replicable paradigm for similar institutions. As a key carrier for Sino-Thai cultural exchanges and community-building,

Sino-Thai educational cooperation requires further optimization. Future efforts should focus on expanding the scope of bilateral cooperation, deepening government-industry-university collaboration, strengthening digital empowerment in cross-cultural teaching practices, and addressing key challenges. It is expected that more universities will engage in collaborative innovation to cultivate international interdisciplinary talents, supporting the China-Thailand comprehensive strategic partnership and high-quality regional development under the Belt and Road Initiative.

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Development of Chinese Vocabulary Learning Media via Instagram for Upper Secondary School Students in Science, Mathematics, and Technology Programs

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Received 11 February 2026; Revised 23 March 2026; Accepted 28 March 2026

Abstract

With China's growing influence in the global economy, trade, and technological innovation, proficiency in the Chinese language has become an essential competency, particularly for students in science, mathematics, and technology programs who require specialized vocabulary. Within the context of educational technology, this study aimed to: (1) design and develop digital Chinese vocabulary learning media via Instagram that integrate daily-life and science–mathematics–technology content, achieving an efficiency criterion of 70/70 (E1/E2); (2) examine the effectiveness of the developed media by comparing students' learning achievement before and after instruction; and (3) investigate learners' satisfaction with the Instagram-based learning media. The participants were 120 upper secondary school students from Triamudomsuksanomklao Nakhonratchasima School, selected through purposive sampling. A mixed-methods research approach was

employed. Quantitative data were collected through achievement tests and satisfaction questionnaires, while qualitative data were obtained from semi-structured interviews. Data analysis involved descriptive and inferential statistics as well as content analysis.

The findings indicated that: (1) the developed digital learning media demonstrated high instructional efficiency, with E1/E2 values of 87.08/77.33, exceeding the established criterion; (2) students' post-test scores were significantly higher than their pre-test scores at the .01 level ($t = -35.7$, $df = 119$, $p < .001$); and (3) learners reported a high level of satisfaction with the media ($\bar{x} = 3.73$, $S.D. = 0.79$). These results suggest that Instagram-based Chinese vocabulary learning media represent an effective educational technology tool that enhances learning outcomes and meets the learning needs of upper secondary students in science, mathematics, and technology programs.

Keywords : Educational technology, Instagram-based learning, Chinese vocabulary learning, Digital learning media, Upper secondary education

Introduction

Language functions as a fundamental tool for communication and cross-cultural learning, while foreign language education plays a vital role in expanding academic, economic, and social opportunities. Among foreign languages, Chinese has become increasingly important due to China's growing influence in global economic, commercial, and technological sectors. As a result, Chinese language instruction has been increasingly emphasized within the Thai educational system. Nevertheless, many learners continue to experience difficulties in acquiring, retaining, and

effectively using Chinese vocabulary, which is a core component of language proficiency. Conventional instructional approaches that rely heavily on rote memorization often fail to respond to the learning characteristics of adolescents in the digital era, leading to low motivation, limited engagement, and insufficient long-term vocabulary retention.

In the context of educational technology, digital learning media have been widely recognized as effective tools for enhancing learner engagement and learning outcomes. Social media platforms, particularly Instagram, offer distinctive affordances such as concise content presentation, visual attractiveness, interactivity, and high accessibility through mobile devices. These features align well with the learning behaviors and preferences of contemporary students. When systematically designed as instructional media, Instagram-based learning resources have the potential to support meaningful vocabulary learning by enhancing learners' motivation, comprehension, and memory retention. Therefore, the integration of Instagram into Chinese vocabulary instruction represents a promising approach to technology-enhanced language learning.

Moreover, the development of Chinese vocabulary learning media via Instagram contributes academically by integrating language pedagogy with modern educational technology, providing an innovative instructional model for social media-based language learning. From the learner's perspective, such media support upper secondary students in science, mathematics, and technology programs by offering access to vocabulary relevant to both daily communication and discipline-specific academic contexts, enabling learners to apply their language knowledge in authentic learning situations. In addition, Chinese language proficiency is increasingly

important for students in science- and technology-oriented programs, as China hosts numerous leading universities and research institutions in these fields. Thai students with Chinese language skills are more likely to access scholarships, pursue further studies, and engage with Chinese-language academic resources, including scientific documents and research publications. Consequently, the integration of Instagram-based digital learning media into Chinese vocabulary instruction not only enhances language learning effectiveness but also strengthens students' academic potential and competitiveness in an increasingly globalized and technology-driven educational environment.

Research Objectives

1. To develop Chinese vocabulary learning media via the Instagram platform for upper secondary school students in science, mathematics, and technology programs at Triamudomsuksanomklao Nakhonratchasima School.
2. To examine the effectiveness of the developed Instagram-based learning media by comparing students' learning achievement before and after instruction at Triamudomsuksanomklao Nakhonratchasima School.
3. To investigate students' satisfaction with the Chinese vocabulary learning media delivered through Instagram at Triamudomsuksanomklao Nakhonratchasima School.

Research Scope

This study focuses on the development and evaluation of Chinese vocabulary learning media delivered through the Instagram platform for upper secondary school students in science, mathematics, and technology

programs at Triamudomsuksanomklao Nakhonratchasima School. The scope of the study covers the design of digital learning media that integrates daily-life and discipline-specific vocabulary, examines learning effectiveness in terms of instructional efficiency and learning achievement, and investigates learners' satisfaction with the developed media. The research emphasizes the application of educational technology and social media-based learning in language education, particularly within the context of technology-enhanced vocabulary learning in a Thai upper secondary school setting.

1. Conceptual Framework

The conceptual framework of this study is grounded in the integration of educational technology and Chinese language learning at Triamudomsuksanomklao Nakhonratchasima School. Instagram-based Chinese vocabulary learning media serve as the independent variable, designed as digital instructional content incorporating visual presentation, concise explanations, and interactive elements suitable for students in science, mathematics, and technology programs. Through repeated engagement with the media on mobile devices, learners are expected to demonstrate enhanced motivation, attention, and vocabulary retention. The dependent variables consist of learning achievement, instructional efficiency (E1/E2), and learners' satisfaction. It is assumed that well-designed social media-based learning media will positively influence learning outcomes and learner perceptions within the context of a Thai upper secondary school.

2. Literature Review

2.1 Educational Technology and Digital Learning Media in Secondary Education

Educational technology has been widely applied to enhance learning effectiveness by promoting learner engagement, accessibility, and flexibility. Digital learning media enable learners to access instructional content beyond traditional classroom boundaries and support learner-centered, self-directed, and mobile learning environments (Selwyn, 2016; Biggs & Tang, 2011). In secondary education, the integration of digital learning media is particularly important for addressing the learning characteristics of Generation Z learners, who are accustomed to using mobile devices and digital platforms in their daily lives.

In the Thai educational context, several studies have emphasized that digital learning environments play a crucial role in supporting 21st-century learning skills, learner autonomy, and active engagement (Pahe, 2018). Thai scholars have also highlighted that the systematic design of digital instructional media contributes to improved learning outcomes when learning objectives, content, activities, and assessment are appropriately aligned (Promwong, 2013). Therefore, the application of educational technology in upper secondary education, including at institutions such as Triamudomsuksanomkiao Nakhonratchasima School, is essential for responding to contemporary learning needs and enhancing instructional effectiveness.

2.2 Social Media-Based Learning and Instagram as a Learning Platform

Social media platforms have increasingly been recognized as potential learning environments due to their accessibility, interactivity, and alignment with learners' digital behaviors (Johnson et al., 2019). Social media-based learning emphasizes informal learning, learner participation, and knowledge construction through interaction and content sharing. When

integrated into educational contexts, social media platforms can promote learner motivation, engagement, and self-directed learning.

Instagram, in particular, offers distinctive affordances for learning, including visual-based content presentation, short-form information delivery, and interactive features such as stories, hashtags, and content sharing. Previous studies have indicated that Instagram can be effectively used as a learning platform when instructional content is intentionally designed to support learning objectives (Lee & Chen, 2021). In the Thai context, research has shown that the use of social media in education can enhance learner participation and positive learning attitudes, especially among secondary school students who are familiar with these platforms (Wandeesutthinan & Boonruang, 2020). These findings support the use of Instagram as an appropriate learning platform for students at Triamudomsuksanomklao Nakhonratchasima School, where learners demonstrate high levels of digital familiarity.

2.3 Technology-Enhanced Vocabulary Learning

Vocabulary knowledge is a fundamental component of language proficiency and serves as the foundation for meaningful communication (Nation, 2013). Technology-enhanced language learning supports vocabulary acquisition by providing multimodal input, repeated exposure, and contextualized learning opportunities, which are essential for vocabulary retention and application (Huang & Kuo, 2018). Digital and mobile learning environments allow learners to encounter vocabulary in varied contexts and at their own pace, thereby supporting deeper processing and long-term memory.

Thai educational research has similarly emphasized that the use of multimedia and digital learning tools can enhance vocabulary learning by increasing learner engagement and reducing cognitive barriers, particularly for beginners (Khammani, 2017). The integration of visual elements, pronunciation guides, and contextualized examples aligns with learner-centered instructional principles and supports effective vocabulary learning in foreign language education.

2.4 Chinese Language Learning for Science and Technology Students

For students in science, mathematics, and technology programs, acquiring discipline-specific Chinese vocabulary is increasingly important due to China's prominent role in scientific research, technological innovation, and higher education. Chinese language proficiency enables learners to access academic resources, research publications, international study opportunities, and scholarships at leading Chinese universities (Wang & Li, 2020). Discipline-specific vocabulary knowledge is particularly critical for understanding scientific concepts and engaging with academic content in Chinese.

In the context of Thai upper secondary education, strengthening Chinese language skills among science- and technology-oriented students aligns with national and institutional goals to prepare learners for global academic and professional environments. At Triamudomsuksanomkiao Nakhonratchasima School, the integration of Chinese vocabulary learning with science, mathematics, and technology content supports both communicative competence and academic language development. This approach reflects the broader educational objective of developing learners

who are linguistically proficient and academically prepared for participation in international and interdisciplinary contexts.

Research Methodology

1. Population and Sample

The population of this study consisted of Thai upper secondary school students enrolled in science, mathematics, and technology programs. The sample comprised 201 upper secondary school students from Triam udomsuksanomklao Nakhonratchasima School, selected through purposive sampling. The selected students represented learners who were studying in science-, mathematics-, and technology-oriented learning tracks and had access to mobile devices and social media platforms for learning purposes.

2. Research Variables

2.1 Independent Variable

The independent variable was the Instagram-based Chinese vocabulary learning media, which included vocabulary for daily communication as well as discipline-specific vocabulary related to science, mathematics, and technology.

2.2 Dependent Variables

The dependent variables consisted of:

2.2.1 The instructional efficiency of the developed learning media.

2.2.2 Students' learning achievement as measured by pre-test and post-test scores.

2.2.3 Students' satisfaction with the Instagram-based Chinese vocabulary learning media.

2.3 Control Variables

The control variables included:

2.3.1 Upper secondary education level.

2.3.2 Enrollment in science–mathematics–technology

programs.

3. Research Instruments

3.1 Learning Media Development Tools

The learning media were developed using Instagram as the primary learning platform, with supporting digital tools including Canva for visual content design and CapCut for video editing.

3.2 Quantitative Data Collection Instruments

Quantitative data were collected using:

3.2.1 A pre-test and post-test consisting of 20 four-option multiple-choice items.

3.2.2 Formative tests administered during the learning process.

3.2.3 A learner satisfaction questionnaire based on a five-point Likert scale.

3.3 Qualitative Data Collection Instrument

Qualitative data were collected through semi-structured interviews conducted with selected participants to obtain in-depth feedback on learning experiences and perceptions of the Instagram-based learning media.

3.4 Instrument Development and Validation

3.4.1 The achievement tests were validated by subject-matter experts, with an Index of Item-Objective Congruence (IOC) value of at least 0.50.

3.4.2 The Chinese vocabulary learning media consisted of 10 content categories covering 70 vocabulary items. The media were pilot-tested with 120 students and revised according to the instructional efficiency criterion of 70/70 (E1/E2).

3.4.3 The learner satisfaction questionnaire was reviewed and validated by experts to ensure content validity and clarity.

4. Data Collection Procedure

Data were collected following these steps:

4.1 The sample group completed a pre-test via Google Forms consisting of 20 items.

4.2 Students engaged in learning activities through the Instagram-based Chinese vocabulary learning media.

4.3 After completing the learning activities, students took a post-test via Google Forms consisting of 20 items.

4.4. Learner satisfaction questionnaires and interview data were collected to supplement quantitative findings.

5. Data Analysis

5.1 The instructional efficiency of the developed learning media was analyzed using the 70/70 (E1/E2) efficiency criterion.

5.2 Learning achievement was analyzed using a paired-sample t-test to compare pre-test and post-test scores.

5.3 Learners' satisfaction levels were analyzed using descriptive statistics, including mean (\bar{x}) and standard deviation (S.D.), and interpreted based on a five-level rating scale.

Research Results

1. Results of the Development of Instagram-Based Chinese Vocabulary Learning Media

The development of the Instagram-based Chinese vocabulary learning media focused on vocabulary for daily communication and discipline-specific terminology related to science, mathematics, and technology for upper secondary school students in science–mathematics–technology programs. The learning media were delivered through the Instagram platform and designed to present each vocabulary item with Chinese characters, pinyin, Thai pronunciation guides, example sentences, and Thai translations to facilitate comprehension and retention.

The instructional content was organized into ten thematic categories comprising a total of 70 vocabulary items. The first category focused on greetings and basic expressions, including 你好 (hello), 谢谢 (thank you), 不客气 (you're welcome), 对不起 (sorry), and 再见 (goodbye). The second category addressed basic question forms, such as 这是什么? (What is this?), 多少钱? (How much is it?), 你好吗? (How are you?), 你叫什么名字? (What is your name?), and 哪里? (Where?). The third category covered places, including 学校 (school), 商店 (shop), 医院 (hospital), 火车站 (train station), and 机场 (airport). The fourth category consisted of common objects, such as 书 (book), 笔 (pen), 手机 (mobile phone), 桌子 (table), 椅子 (chair), 衣服 (clothes), 钱包 (wallet), 电脑 (computer), 钥匙 (key), and 杯子 (cup). The fifth category focused on occupations, including 老师 (teacher), 医生 (doctor), 护士 (nurse), 工程师 (engineer), and 警察 (police officer). The sixth category addressed pronouns, namely 我 (I), 你 (you), 他 (he), 她 (she),

and 我们 (we). The seventh category included adjectives such as 好 (good), 快 (fast), 慢 (slow), 贵 (expensive), and 便宜 (cheap). The eighth category focused on verbs, including 吃 (eat), 喝 (drink), 看 (see/watch), 听 (listen), and 走 (walk). The ninth category addressed time expressions, such as 今天 (today), 明天 (tomorrow), 昨天 (yesterday), 现在 (now), and 时候 (time/when). The tenth category emphasized science, mathematics, and technology vocabulary, comprising 20 key academic terms, including 理科 (science), 数学 (mathematics), 物理 (physics), 化学 (chemistry), 生物 (biology), 科学 (science), 实验 (experiment), 实验室 (laboratory), 能量 (energy), 电路 (electric circuit), 分数 (score), 公式 (formula), 解题 (problem solving), 编程 (programming), 算法 (algorithm), 数据库 (database), 源代码 (source code), 加密 (encryption), 云计算 (cloud computing), and 区块链 (blockchain). This category was designed to support students' academic language development and enable them to connect Chinese vocabulary learning with content knowledge in science and technology fields.

2. General Characteristics of the Sample Group

The sample group consisted of 120 upper secondary school students from Triamudomsuksanomklao Nakhonratchasima School. In terms of gender, the majority of participants were female students (62.50%), while male students accounted for 37.50% of the sample. The participants were evenly distributed across grade levels, with equal representation from Grade 10 (Matthayom 4), Grade 11 (Matthayom 5), and Grade 12 (Matthayom 6), each comprising 33.33% of the total sample.

Regarding academic tracks, most students were enrolled in the science–mathematics program (70.00%), while the remaining participants

studied in the science–mathematics–digital program (30.00%). Concerning Instagram usage behavior, the majority of students reported using Instagram on a daily basis, followed by those who used the platform four to six days per week. The most frequently reported time for Instagram usage was between 18:00 and 22:00 hours, indicating that students commonly engaged with social media during evening hours. In terms of content preferences, entertainment-related content was the most frequently followed category, followed by educational content, technology-related content, and science-related content, respectively. These findings indicate that Instagram is a familiar and frequently used platform among the participants, supporting its suitability as a learning medium.

3. Instructional Efficiency of the Learning Media

The instructional efficiency of the Instagram-based Chinese vocabulary learning media was evaluated using the 70/70 (E1/E2) criterion. The results indicated that students achieved high performance during the learning process, with an instructional efficiency (E1) value exceeding the specified criterion. Similarly, post-instruction performance (E2) demonstrated that learners were able to retain and apply the acquired vocabulary knowledge effectively. Overall, the efficiency values surpassed the established benchmark of 70/70, indicating that the developed learning media were effective in terms of both instructional delivery and learning retention. These findings confirm that the Instagram-based learning media possess high instructional quality and are suitable for supporting Chinese vocabulary learning among upper secondary students in science–mathematics–technology programs.

4. Comparison of Pre-Test and Post-Test Learning Achievement

A comparison of students' learning achievement before and after using the Instagram-based learning media revealed a substantial improvement in vocabulary knowledge. Prior to the intervention, students demonstrated relatively low baseline vocabulary knowledge, as reflected in modest pre-test scores. After engaging with the learning media, students' post-test scores increased markedly, indicating significant learning gains. The mean post-test score was considerably higher than the pre-test score, with a mean increase of 8.92 points. Statistical analysis using a paired-sample t-test showed that the difference between pre-test and post-test scores was statistically significant at the .01 level ($t = -35.7$, $df = 119$, $p < .001$). Notably, all students demonstrated improvement, with no participant showing a decrease in performance. These results provide strong evidence that the Instagram-based learning media were highly effective in enhancing Chinese vocabulary knowledge for both daily communication and science–mathematics–technology contexts.

5. Learners' Satisfaction with the Instagram-Based Learning Media

The evaluation of learners' satisfaction revealed that overall satisfaction with the Instagram-based Chinese vocabulary learning media was at a high level ($\bar{x} = 3.73$, $S.D. = 0.79$). Satisfaction was assessed across three dimensions: content quality, design and presentation, and usability. Among these dimensions, usability received the highest mean score, indicating that learners found the media easy to access, navigate, and use across different devices. Content quality was also rated highly, particularly in terms of alignment with learning objectives and appropriateness of difficulty level.

Design and presentation were positively evaluated, with students and experts highlighting the clarity, visual appeal, and systematic organization of the learning materials. The relatively narrow range of standard deviation values suggests consistent agreement among evaluators, reflecting the overall quality and effectiveness of the developed learning media.

6. Qualitative Analysis of Learners' Feedback

Qualitative data obtained from semi-structured interviews with 15 students provided further insights into learners' experiences with the Instagram-based learning media. The findings were categorized into four main themes. First, students reported clear learning benefits, including the acquisition of new vocabulary related to school subjects, increased confidence in using Chinese for communication, and improved ability to connect language learning with scientific knowledge. Second, participants emphasized the suitability of Instagram as a learning platform, noting its familiarity, ease of access, and features that support content saving and sharing. Third, students highlighted the attractiveness of the instructional design, particularly the use of visuals, color schemes, and the inclusion of pinyin and Thai pronunciation guides, which facilitated comprehension and memory retention. Finally, learners provided constructive suggestions for further development, such as incorporating live question-and-answer sessions, differentiating content by difficulty levels, and adding interactive games or supplementary activities.

Overall, the qualitative findings indicate that Instagram-based digital learning media support active engagement, self-directed learning, and knowledge construction among upper secondary students. The integration of social media into vocabulary instruction effectively reduces learning

barriers for beginners and promotes meaningful interaction with learning content.

Discussion of Results

The findings of this study indicate that the Instagram-based Chinese vocabulary learning media were effective in enhancing students' vocabulary knowledge, learning achievement, and satisfaction. These results can be systematically interpreted through the frameworks of Mobile-Assisted Language Learning (MALL), Multimedia Learning Theory, and Social Media-Based Learning, while also aligning with instructional design and learner-centered learning principles emphasized in both international and Thai educational research.

From the perspective of Mobile-Assisted Language Learning (MALL), the significant improvement in students' post-test scores supports the effectiveness of mobile technologies in facilitating flexible and self-directed language learning. MALL emphasizes accessibility, portability, and learner autonomy, enabling learners to engage with instructional content beyond traditional classroom constraints (Kukulska-Hulme & Shield, 2008; Sharples et al., 2007). In the Thai educational context, digital learning environments have been found to support learner engagement and skill development aligned with 21st-century learning competencies (Pahe, 2018). The use of Instagram as a mobile learning platform in this study allowed students to access vocabulary content repeatedly and at their own pace, which contributed to the observed learning gains.

In terms of instructional efficiency, the high E1/E2 values exceeding the 70/70 criterion reflect the effectiveness of the systematic design of the

learning media. This finding is consistent with instructional media development principles that emphasize efficiency-based evaluation to ensure both effective instruction and knowledge retention (Promwong, 2013). The results suggest that Instagram-based learning media, when developed through a structured instructional design process, can function as effective educational technology tools in language learning contexts.

The effectiveness of the learning media can also be explained through Multimedia Learning Theory. According to Mayer (2009), learners process information more effectively when verbal and visual information are presented in an integrated manner that reduces cognitive load and supports dual-channel processing. In this study, Chinese characters, pinyin, Thai pronunciation guides, visual elements, and example sentences were systematically combined, enabling learners to form meaningful associations between linguistic forms and meanings. This approach aligns with learner-centered instructional principles emphasizing multiple representations and active knowledge construction (Khammani, 2017).

Furthermore, the high level of learner satisfaction supports the relevance of Social Media-Based Learning in secondary education. Instagram's familiar interface, visual orientation, and interactive features contributed to positive learner perceptions, particularly in terms of usability and engagement. These findings are consistent with studies indicating that social media platforms can enhance learner motivation and participation when intentionally designed for educational purposes (Johnson et al., 2019; Wandeesutthinan & Boonruang, 2020). The ability to save, revisit, and share learning content further promoted self-directed learning and peer-supported knowledge construction.

The qualitative findings also revealed that learners perceived the instructional design as visually appealing and easy to understand, reflecting principles of active and constructivist learning. Active learning environments encourage learners to construct knowledge through interaction, participation, and reflection (Dechakup, 2016). Students' suggestions for incorporating live interactions, differentiated difficulty levels, and interactive activities further support the need for adaptive and participatory learning environments in technology-enhanced language instruction.

Overall, the discussion of results demonstrates that the integration of Instagram-based learning media into Chinese vocabulary instruction is pedagogically sound and theoretically supported. By integrating international frameworks such as MALL, Multimedia Learning Theory, and Social Media-Based Learning with instructional design and learner-centered principles derived from Thai educational scholarship, this study confirms that social media platforms can serve as effective educational technology tools for enhancing vocabulary acquisition and learner engagement among upper secondary students in science, mathematics, and technology programs.

Recommendations

Based on the findings and discussion of this study, several recommendations can be proposed for educational practice and future research. First, educational institutions and language teachers should consider integrating social media platforms, particularly Instagram, as supplementary learning media for Chinese vocabulary instruction. Given its accessibility, familiarity, and mobile-friendly features, Instagram can effectively support Mobile-Assisted Language Learning by enabling learners to engage with

vocabulary content beyond classroom boundaries and according to their own learning pace. Teachers are encouraged to design instructional content that aligns with learners' digital behaviors while maintaining clear learning objectives and systematic instructional design.

Second, the design of Instagram-based learning media should emphasize multimedia principles to enhance learning effectiveness. The integration of Chinese characters, pinyin, pronunciation guides, visual elements, and contextualized example sentences should be carefully planned to reduce cognitive load and promote meaningful learning. Educators should apply multimedia learning principles to ensure that visual and verbal elements complement one another rather than overwhelm learners. In addition, instructional content should be organized into thematic categories with increasing levels of complexity to accommodate learners with different proficiency levels.

Third, learning activities delivered through social media platforms should incorporate interactive and participatory elements to strengthen learner engagement. Features such as live question-and-answer sessions, short quizzes, discussion prompts, and gamified activities can further promote active learning and learner interaction. These strategies align with social media-based learning and constructivist learning principles, which emphasize learner participation, collaboration, and knowledge construction through meaningful interaction.

Fourth, educational administrators and curriculum developers may consider integrating Instagram-based or social media-supported learning activities into formal language curricula as supplementary or blended learning components. Such integration can enhance learner motivation,

promote self-directed learning, and support the development of digital literacy skills alongside language competence. Clear guidelines and professional development opportunities should be provided for teachers to ensure effective and responsible use of social media in educational contexts.

Finally, future research should expand the scope of this study by examining the long-term effects of Instagram-based language learning on vocabulary retention and language proficiency. Comparative studies across different social media platforms, educational levels, or learner groups may provide deeper insights into the effectiveness of social media-based learning environments. Further research may also explore additional variables such as learner motivation, digital literacy, learning strategies, and teacher roles to better understand how technology-enhanced learning environments can be optimized for foreign language education.

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Thai Cursing Rituals and Anti-Corruption: Symbolic Strength and Social Function

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Received 1 March 2026; Revised 23 March 2026; Accepted 29 March 2026

Abstract

Cursing rituals in Thai society signify culturally ingrained symbolic activities that are increasingly utilized in reaction to perceived corruption and institutional inadequacy. This study seeks to analyze the role of these rituals as instruments of symbolic authority and informal accountability in modern anti-corruption frameworks. The study utilizes a qualitative interpretative research design, employing a multiple-case approach grounded in publicly documented ritual acts linked to corruption claims. Data were gathered from media reports, public pronouncements, and digital sources, and analyzed using thematic and interpretive discourse analysis guided by the theoretical frameworks of symbolic power and accountability.

The findings indicate that cursing rituals function as mechanisms of moral framing, converting technical accusations of corruption into culturally significant tales of guilt, justice, and moral violation. These strategies create

emotional engagement and public visibility through symbolic classification, performative language, and ritual dramatization. Media amplification broadens their influence, allowing ritualized condemnation to serve as a mechanism of informal accountability by exerting reputational pressure on the accused individuals and institutions. Nonetheless, the study reveals that these rituals are fundamentally limited by their absence of legal authority, reliance on collective belief systems, and susceptibility to political interpretation.

This study enhances the interdisciplinary comprehension of governance by illustrating that ritual behaviors can function as culturally rooted, yet context-specific, instruments of informal accountability. It further posits that successful anti-corruption programs must amalgamate institutional reform with a focus on the symbolic and communicative aspects of public trust and legitimacy.

Keywords: Cursing rituals, Corruption, Symbolic power, Thai culture, Anti-corruption

Introduction

Cursing rituals are a deeply ingrained cultural tradition in Thailand and throughout mainland Southeast Asia, where ritual, religion, and socio-political life are intricately interconnected. Aside from their connection to supernatural beliefs, such rituals serve as symbolic public performances that express moral judgment, dramatize social conflicts, and establish claims to justice within culturally significant frameworks (Geertz, 1973; Turner, 1969). In modern Thailand, ritual practices such as curse invocations, oath-taking, and symbolic acts with sacred elements have periodically surfaced in

political protests, illustrating the intersection of cosmological belief systems with legal awareness and political conflict (Engel, 2016; Rajah, 2005). These practices function not only at the level of individual conviction but also as communication acts in public arenas, capable of galvanizing collective sentiment and redefining moral discourse.

Academic examinations of Thai political protests reveal that symbolic and ritualistic actions, especially those including blood symbolism and curse invocations, can convert abstract concerns into morally persuasive public spectacles that contest institutional legitimacy (Cohen, 2012). From a theoretical standpoint, these behaviors can be comprehended via the notion of symbolic power, which denotes the ability to influence perceptions and categorizations of social reality through culturally acknowledged systems of meaning (Bourdieu, 1989, 1991). In ritual contexts, symbolic power is manifested through sacred objects, performative speech acts, and culturally significant symbols that delineate moral classifications of individuals as virtuous or immoral, thus shaping public interpretation beyond formal legal frameworks (Austin, 1962; Geertz, 1973; Turner, 1969).

Corruption in Thailand is a well-documented systemic concern linked to patronage networks, elite capture, and the politicization of accountability mechanisms (Mutebi, 2008; Phongpaichit & Baker, 2016). Notwithstanding the creation of legal frameworks and anti-corruption organizations, the efficacy of formal accountability procedures has frequently been hindered by institutional constraints and diminishing public trust (Dalpino, 1991; Rothstein & Teorell, 2008). In these circumstances, informal practices—such as public shaming, civic mobilization, and symbolic protest—may arise as alternative means for individuals to express moral demands and seek justice

(Fox, 2007; Schedler, 1999). Cursing rituals can be located within the broader range of informal accountability practices, serving as culturally ingrained forms of moral censure in circumstances where official responses are seen insufficient.

Although there is an expanding corpus of work on corruption and governance, there has been insufficient academic focus on the distinctive function of ritual practices—especially cursing rituals—as instruments of informal accountability. Previous research has investigated the cultural aspects of protest and the interaction between law, religion, and symbolic action in Thailand (Engel, 2016; Rajah, 2005), but the role of ritualized denunciation in anti-corruption rhetoric is still inadequately researched. This difference is important because ritual practices can offer culturally relevant means to convert technical accusations of corruption into emotionally compelling moral tales that influence public perception and collective reaction.

This study fills this gap by contextualizing Thai cursing practices within the analytical frameworks of symbolic power and accountability theory. It analyzes how ritual acts create narratives of guilt, moral transgression, and justice in circumstances marked by perceived institutional breakdown. The study examines the degree to which ritualized condemnation functions as an informal accountability mechanism by creating social pressure outside formal legal frameworks, together with its structural and normative constraints concerning institutional governance processes. This research enhances the understanding of the interaction between culturally rooted symbolic practices and modern issues of corruption, legitimacy, and public

confidence by incorporating concepts from political anthropology, sociology of law, and anti-corruption studies.

Research Objectives

This study investigates cursing practices as culturally ingrained mechanisms of symbolic authority and informal accountability within anti-corruption frameworks in Thailand. The explicit aims are:

1. To examine the symbolic and communicative aspects of Thai cursing rituals in the formation of meanings related to guilt, moral violation, and justice.
2. To investigate ritualized denunciation as a mechanism of informal accountability in situations of perceived institutional inadequacy.
3. To assess the advantages and drawbacks of cursing rituals in comparison to formal anti-corruption measures.

Research Scope

1. Literature Review

1.1 Ritual, Symbolic Power, and Social Influence

1.1.1 Conceptualizing Ritual

Ritual has historically been acknowledged as a systematic kind of symbolic behavior integrated into religious, political, and social spheres. Instead of being merely a superstition or repetitive ceremony, ritual serves as a structured kind of communication that generates shared meanings and strengthens community identities. Modern ritual theory posits that rituals are performative actions that create social realities, delineate moral limits, and structure authority relations (Bell, 1997; Collins, 2004). From a sociological

standpoint, ritual produces emotional energy and cohesion, enhancing group consciousness and reinforcing normative order (Durkheim, 1912/1995; Turner, 1969).

Recent scholarship has redefined ritual as a dynamic and contentious practice, particularly in politically heated contexts. Political rituals, such as protest performances and symbolic dramatizations, function not just as expressive acts but also as processes that recontextualize political concerns in moral terms (Kertzer, 1988; Alexander, 2011). In these circumstances, ritual acts as a conduit between emotion, conviction, and authority, converting abstract assertions—such as injustice or corruption—into publicly discernible moral tales.

1.1.2 Symbolic Power

Bourdieu's (1989, 1991) concept of symbolic power offers a theoretical framework for analyzing the role of ritual within systems of domination and legitimacy. Symbolic power denotes the ability to influence perceptions and classification systems in ways that seem natural or self-evident. In contrast to coercive power, symbolic power operates through recognition, persuading individuals to embrace specific interpretations of reality without the use of overt force.

In ritual contexts, symbolic power is enacted through sacred objects, performative speech acts, and culturally meaningful symbols that construct moral classifications of individuals as virtuous or immoral (Geertz, 1973; Austin, 1962; Turner, 1969). Ritualized condemnation, including cursing behaviors, serves as a mechanism for morally categorizing individuals and reinforcing communal standards. Such techniques are especially effective in

communities whose cosmological beliefs are integrated with public life, enabling symbolic actions to affect reputational status and social validity.

1.1.3 Ritual and Social Control

Ritual may also be perceived as a mechanism of societal regulation. Utilizing Foucault's (1977) examination of disciplinary authority, researchers contend that ritual performances facilitate the creation of normative individuals by reinforcing moral expectations and penalizing noncompliance. Mary Douglas (1966) also highlighted how symbolic systems of purity and pollution delineate moral boundaries and stigmatize transgressions. In this context, ritualized cursing may serve as a mechanism of moral tagging that publicly identifies persons alleged to have committed misconduct.

Ritual has been utilized at the political level to both bolster and challenge authority. Kertzer (1988) illustrated the utilization of ritual symbols by political actors to reinforce legitimacy, whereas Scott (1990) emphasized that symbolic rituals may function as covert transcripts of resistance. When institutional mechanisms are regarded as inadequate, ritualized protest can convert individual dissatisfaction into a collective moral spectacle.

1.1.4 Ritual and Social Solidarity

Ritual is essential in fostering communal togetherness. Turner (1969) introduced the term *communitas* to denote the profound sense of collective connection generated by ritual performance. Recent interaction ritual theory posits that emotionally intense assemblies enhance group bonding and stimulate ongoing collective activity (Collins, 2004). In situations characterized by corruption scandals or political crises, ritualized

condemnation may cultivate solidarity among citizens who view themselves as morally united against unjust power.

Nonetheless, the efficacy of ritual is not boundless. The processes of modernization and rationalization may diminish the social effectiveness of ritual symbols, especially in contexts where bureaucratic and legal reason prevail in public discourse (Weber, 1922/1978; Giddens, 1991). Moreover, ritual authority may be disputed in pluralistic communities because conflicting value systems undermine religious or cosmological credibility (Asad, 1993). Consequently, the impact of ritual is contingent upon collective belief systems, media exposure, and overarching political circumstances.

1.2 Cursing Beliefs in the Thai Cultural Context

Thailand offers a unique environment where ritual, religion, and political life converge. Anthropological research has recorded the amalgamation of Buddhism, animism, and Brahmanical traditions within Thai cosmology, resulting in a moral cosmos where supernatural endorsement is culturally comprehensible (Keyes, 1987; Pattana, 2012). Rituals that include oath-taking, spirit invocation, and imprecation have traditionally served to confirm loyalty, resolve conflicts, and indicate moral violation.

In modern politics, ritual symbolism has sometimes infiltrated protest groups. Research on Thailand's public protests has revealed the utilization of blood rituals, sacred symbols, and cosmological references to emphasize injustice and contest state legitimacy (Cohen, 2012; Engel, 2016; Rajah, 2005). These performances recontextualized political conflict in moral and spiritual dimensions, thus broadening the interpretive scope beyond mere legal discourse.

Cursing rituals aimed against purportedly corrupt individuals might be contextualized within this extensive tradition of moral cosmology. They signify not only manifestations of wrath but also culturally significant efforts to summon transcendent justice when institutional justice is deemed inadequate.

1.3 Corruption in Thailand: Context and Consequences

Corruption has been extensively analyzed in the political science and governance literature as a chronic structural problem in Thailand. Notwithstanding the creation of monitoring bodies and legal reforms, enforcement has frequently been impeded by elite networks, patron-client dynamics, and the politicization of anti-corruption institutions (Mutebi, 2008; Phongpaichit & Baker, 2016). Previous analysis highlighted Thailand's persistent challenge in institutionalizing accountability under democratic governance (Dalpino, 1991).

In addition to institutional design, corruption significantly undermines public trust. Reports from Transparency International and comparative governance studies indicate that perceived corruption undermines trust in legal institutions and diminishes citizens' inclination to utilize official avenues for redress (Rothstein & Teorell, 2008). In these circumstances, informal accountability measures such as media scrutiny, civic activity, and public shaming may become more significant (Fox, 2007).

1.4 Cursing Rituals and Anti-Corruption: Moral Legitimacy and Informal Accountability

The nexus between ritual censure and anti-corruption activity is inadequately examined. Nonetheless, theoretical perspectives from accountability research offer a valuable foundation. Accountability methods are classified

into formal (judicial processes, supervisory bodies) and informal (public opinion, media exposure, civil society mobilization) categories (Schedler, 1999). When formal institutions are regarded as compromised or ineffectual, informal processes emerge as vital venues of conflict.

Cursing rituals may serve as culturally distinctive mechanisms of informal accountability by creating moral narratives that stigmatize accused individuals and incur reputational consequences. Symbolic dramatization and ritual performances convert intricate accusations into emotionally impactful moral assertions. Media amplification can elevate localized ritual behaviors to the level of national political discourse, hence intensifying institutional pressure to respond (Cohen, 2012).

Nonetheless, ritual sanction lacks binding legal authority. The efficacy is contingent upon public perception, symbolic significance, and the political environment. In the absence of institutional transformation, ritual condemnation may articulate frustration without effecting structural change. Consequently, ritualized anti-corruption movement occupies an equivocal stance: potent in moral symbolism yet constrained in formal enforcement capability.

Research Methodology

1. Research Design

This research employs a qualitative interpretative design based on a multiple-case study methodology. Considering that the research seeks to elucidate the role of cursing rituals as symbolic performances in anti-corruption contexts, an interpretive technique is suitable for examining meaning-making processes, moral framing, and mechanisms of informal

accountability. The study emphasizes the examination of how ritual behaviors establish narratives of guilt, mobilize social sentiment, and generate public pressure, rather than statistically quantifying causal influence.

The qualitative case study approach facilitates comprehensive contextual examination of ritual performances as socially entrenched occurrences within distinct political and cultural contexts.

2. Case Selection

The research used purposive sampling to find recorded instances of ritualized cursing or symbolic denunciation publicly aimed at persons or institutions alleged to be corrupt or abusive of power in Thailand. Cases were chosen according to the subsequent criteria: The ceremonial performance was directly associated with accusations of corruption or misbehavior. The event garnered public attention via national media coverage or extensive online dissemination. The ceremony featured discernible symbolic components, such as curse invocation, oath-taking, sacred artifacts, blood symbolism, or cosmological allusions. Ample documented evidence was accessible to facilitate methodical study. The objective of case selection was not statistical representativeness but rather analytical profundity and theoretical significance.

3. Data Sources

Data were obtained from publicly available sources, including: National and regional newspaper articles. Television and internet media coverage. Public declarations and addresses regarding protests. Video recordings and documentation via social media. Official reactions from governmental institutions (where applicable). Secondary academic analyses of pertinent protest incidents. The utilization of numerous sources facilitated

triangulation, hence augmenting the credibility and interpretive validity of the results.

4. Analytical Framework and Procedure

Data analysis employed a synthesis of thematic analysis and interpretive discourse analysis, informed by the theoretical framework of symbolic power and informal accountability. The analytical procedure consisted of four stages: (1) Identification of Ritual Elements, wherein ritual components, including language, symbols, gestures, objects, and spatial arrangements, were recognized and classified. (2) Coding of Moral Narratives: Textual and visual materials were coded to find patterns that have to do with guilt, wrongdoing, justice, legitimacy, and institutional failure. (3) Analysis of Symbolic Power The analysis investigated the manner in which ritual performances formulated classifications of moral order and how these classifications endeavored to attain public acknowledgment. (4) Assessment of Accountability Effects: The study examined media amplification, public reactions, and institutional responses to determine if ritual behaviors produced discernible social pressure.

The investigation focused on the interplay between ritual performances and overarching governance frameworks and political circumstances.

5. Validity and Trustworthiness

To improve analytical rigor, the study utilized various qualitative validity strategies: (1) Data triangulation, which involves looking at different types of media and documents to see how they compare. (2) Theoretical triangulation, using both symbolic power theory and accountability literature to make sense of the results. (3) Analytical transparency, clearly delineating

coding and interpretative methodologies. The study does not assert statistical generalizability; instead, it seeks theoretical generalization, offering conceptual insights into the nexus between ritual performance and informal accountability.

6. Ethical Considerations

The research utilized just publicly available data, no direct human participants were engaged. Still, the study doesn't make personal attacks and instead looks at symbolic processes instead of moral judgments about people. Ritual practices are regarded as culturally significant phenomena rather than subjects of derision or conventional rejection.

Research Results

1. Ritual as Moral Framing: Constructing Narratives of Guilt and Justice

The investigation shows that Thai cursing rituals work as a way to frame morals in anti-corruption situations by turning claims of wrongdoing into stories of guilt, wrongdoing, and justice that people from that culture can understand. These ritual performances do not represent leftover superstition; instead, they serve as public symbolic actions that categorize participants, dramatize misconduct, and establish moral authority that transcends institutional protocols. In this regard, cursing rituals illustrate symbolic power: they influence perceptions of corruption by establishing categories of moral assessment that are socially acknowledged and emotionally resonant (Bourdieu, 1989, 1991). Ritual practices reframe public perceptions of legitimacy and responsibility by portraying corruption as a breach of both legal and moral or cosmological order, especially in situations

where formal accountability is viewed as ineffective or compromised (Dalpino, 1991; Mutebi, 2008).

1.1 Symbolic Classification of the Accused

In all of the cases, ritual performances always put accused officials or institutions in moral categories that were linked to impurity, betrayal, and social harm. By using curse invocations, oath-like statements, and culturally significant artifacts and locations, participants symbolically changed the way they saw alleged corrupt people from “morally polluted” characters to just “administrative wrongdoers”. This categorization is important because accusations of corruption are typically made in technical or procedural language that not everyone understands. Ritual performance turns those accusations into physical indications that audiences can easily understand as moral deviation. This kind of symbolic classification shows how powerful ritual can be in forcing people to come up with ways to explain things, such as who is to blame and why, using culturally acceptable ways of expressing themselves (Bourdieu, 1989; Douglas, 1966).

In this process, moral typologies are utilized to frame the accused in public, which raises the stakes for their reputation. The ritual act creates a visible moral judgment that can spread through communities and media ecosystems. This allows condemnation to continue even if there is no formal legal decision. This dynamic is similar to research on Thai public protest and morality, which has shown that symbolic acts and culturally coded performances can impact political interpretation and social appraisal outside of official channels (Rajah, 2005).

1.2 Ritual Language and Moral Cosmology

A fundamental aspect of these rites is in their moral-cosmological lexicon. Participants often employ concepts such as karmic retribution, merit–demerit, and transcendent punishment to contextualize purported corruption within a more extensive moral framework. Ritual discourse supports the idea that misbehavior can’t be totally contained within procedural legality by bringing up cosmological justice. Instead, corruption is shown as a moral break that goes beyond state-centered punishment. This trend aligns with studies examining the intersections of Buddhism, law, and ritual symbolism in Thailand, illustrating how moral cosmologies influence legal consciousness and societal perceptions of justice (Engel, 2016).

Ritual language does not merely mimic religious idioms; it frequently amalgamates moral cosmology with current governance issues—such as integrity, public trust, and accountability—thereby allowing ritual to resonate with both culturally rooted and politically relevant audiences. In this manner, the ritual does not vie with legal discourse as an alternative court; instead, it establishes a distinct moral framework through which corruption is perceived as ethical contamination and a betrayal of communal expectations.

1.3 Emotional Intensification and Public Dramatization

The results also show how powerful rituals may be in making corruption “felt” by the people. Corruption is often talked about in abstract and impersonal bureaucratic terms, but ritual performance makes accusations real by involving everyone in the process, using theatrical gestures, and using emotionally charged language. These kinds of performances heighten moral emotion and turn complaints into shows, allowing people to see corruption as a group problem instead of just a problem with one

person in charge. This corresponds with extensive examinations of symbolic action in Thai protest contexts, wherein ritualistic components—especially those entailing blood and imprecation—have demonstrated the capacity to transform political assertions into morally charged public spectacle (Cohen, 2012).

From a micro-sociological standpoint, the emotional energy derived from communal ritual participation can bolster unity and encourage ongoing involvement by fostering a collective moral opposition to perceived injustice (Collins, 2004). Thus, cursing rituals do not only “express” rage; they structure fury into socially comprehensible forms, intensify indignation, and establish a transient moral community that positions the anti-corruption campaign as an issue of morality and justice. In conclusion, these findings illustrate that cursing rituals operate as a form of symbolic power by delineating moral reality: they publicly establish who is culpable, what constitutes transgression, and the conceptualization of justice—frequently preceding or existing independently of formal adjudication (Bourdieu, 1989, 1991). Through symbolic classification of the accused, cosmological-moral discourse, and emotional dramatization, ritual performances redefine corruption as moral contamination and legitimacy failure. This elucidates the emergence of such practices with notable intensity in contexts characterized by perceived institutional fragility: when legal accountability is regarded with skepticism or deferred, ritual transforms into a culturally potent instrument for generating moral judgment, amplifying public scrutiny, and perpetuating assertions of justice (Dalpino, 1991; Mutebi, 2008).

2. Ritualized Condemnation as Informal Accountability

The results indicate that cursing rituals in anti-corruption settings function as culturally ingrained systems of informal accountability, especially when official institutions are regarded as ineffectual, politicized, or unattainable. Instead of taking the place of legal processes, ritualized condemnation becomes a new place where moral judgment is made public and reputational consequences are enforced. This dynamic corresponds with overarching divisions in accountability theory between formal mechanisms—such as courts and oversight agencies—and informal mechanisms based on public opinion, civil society, and symbolic sanction (Schedler, 1999; Fox, 2007).

2.1 Emergence under Perceived Institutional Failure

A general pattern observed in the analyzed examples is that ritualized denunciation typically emerges in contexts of perceived institutional failure. People often said that their routine activities were a response to investigations that took too long, a lack of openness, or the belief that politics were getting in the way of anti-corruption efforts. This view of institutional failure created a legitimacy vacuum, and ritual performance filled that gap as a moral correction. Political science research on Thailand has extensively recorded systemic issues within the nation's anti-corruption framework, such as elite capture, patronage networks, and the politicization of oversight institutions (Mutebi, 2008; Phongpaichit & Baker, 2016). When people think that formal accountability systems are weak or only sometimes used, they lose faith in institutional justice (Rothstein & Teorell, 2008). In these situations, ritual actions of denunciation may become culturally

comprehensible substitutes for expressing moral assertions and indicating public discontent.

Ritualized condemnation does not inherently signify a repudiation of law. Instead, it is a symbolic call for justice in cases where people don't believe that legal enforcement will work. By invoking cosmic or moral sanction, participants in a ritual assert that misbehavior will not go unpunished, even if institutional systems fail to bring immediate penalties. In this context, ritual transforms into a mechanism of moral escalation induced by perceived institutional stagnation.

2.2 Public Visibility and Media Amplification

The data further illustrate that ritualized denunciation acquires accountability primarily via public awareness. Media coverage, whether traditional or digital, is very important for turning local rituals into bigger political conversations. When ritual performances are recorded and shared, they go beyond the people who are there and become part of national discussions about corruption, legitimacy, and justice.

Research on Thai protest movements demonstrates that symbolic performances can be magnified through media depiction, transforming ritual gestures into politically significant moral declarations (Cohen, 2012). Social media platforms amplify this process by facilitating swift dissemination, criticism, and reinterpretation among varied audiences. Digital circulation can give ritual activities that start in local contexts national importance, changing the way people think about corruption claims by putting them in emotionally charged symbolic stories.

This process of amplification is key to understanding ritual as a way to hold people accountable informally. Ritual is just a local symbolic act

without visibility; with visibility, it puts pressure on discourse. Media reproduction changes the ritual from a limited cultural event into a public accountability performance that can change how people see reputations and how institutions respond.

2.3 Social Pressure and Reputational Cost

The results show that ritualized denunciation can lead to reputational damage, even if there is no explicit legal punishment. By publicly labeling accused individuals as morally deviant, ritual performances can undermine symbolic capital—such as honor, credibility, and perceived integrity—thereby inflicting indirect costs (Bourdieu, 1989). Reputational damage functions as a mechanism of social coercion. Public naming, moral exaggeration, and collective denunciation may force the accused people or organizations to make statements, start investigations, or do anything else to protect themselves. Ritual, while devoid of coercive power, has the potential to transform the symbolic context in which political actors function. According to accountability research, informal mechanisms frequently work by making inaction or denial more damaging to one's image (Schedler, 1999; Fox, 2007). But the responses of institutions are different. In certain cases, ritualized criticism may elicit symbolic actions from authorities, such as public clarification or further investigation; conversely, it may be regarded as theatrical or politically driven. The efficacy of ritual pressure is contingent upon contextual elements, such as media intensity, political polarization, and the prevailing credibility of monitoring institutions. In conclusion, Ritual as Informal Accountability, these results show that cursing rituals are culturally distinctive ways of holding people informally accountable. They arise in situations where institutions are seen as weak,

gain power through media amplification, and create societal pressure by imposing reputational costs. Ritualized condemnation works through symbolic punishment and moral dramatization, while formal responsibility relies on legal compulsion and bureaucratic procedure.

This analysis does not imply that ritual supplants institutional reform. Instead, it shows how symbolic actions can momentarily make up for a lack of responsibility by making moral judgments clear to everyone. In this way, ritual is part of the larger system of accountability processes that affect governance and public trust in modern Thailand (Rothstein & Teorell, 2008).

3. Limits of Ritual Sanction: Structural and Normative Constraints

The findings indicate that cursing rituals can serve as culturally significant forms of informal accountability; yet, they also highlight significant structural and normative limitations. Ritualized condemnation has a powerful symbolic effect, but it can't bring about long-term changes in institutions or the law. A fair evaluation necessitates an analysis of both the mobilizing power of ritual and the constraints under which it functions.

3.1 Absence of Legal Coercive Authority

The primary restriction of ritual sanction is its absence of official coercive authority. Ritual performances cannot inflict legal fines, demand testimony, or mandate institutional change, unlike courts, anti-corruption commissions, or prosecutorial authorities. Formal accountability methods depend on written rules, standards for evidence, and punishments that the state may implement (Schedler, 1999). In contrast, ritual works in the realm of symbolic judgment rather than legal enforcement.

This difference shows that moral censure and legal accountability are not the same in terms of their structure. Ritual can publicly announce guilt,

but it can't officially decide it in a court of law. Because institutions don't have the power to enforce rules, ritualized denunciation might put more pressure on the public without changing the results of bureaucratic processes. As governance research indicates, informal accountability systems frequently rely on their ability to indirectly affect formal institutions rather than supplant them (Fox, 2007).

Additionally, the rational-legal authority inherent in contemporary bureaucratic regimes prioritizes procedural legality over symbolic penalty (Weber, 1978). In situations with a lot of rules, authorities may see ritual as just a performance or a way to express culture, not anything that has real meaning. As a result, its effect on formal processes is not assured but rather conditional.

3.2 Dependency on Public Belief and Media Attention

A second barrier has to do with how rituals depend on common beliefs and the ability to communicate. Symbolic power functions via recognition, necessitating that audiences acknowledge the validity of the evoked symbolic framework (Bourdieu, 1989, 1991). When faith in cosmological justice or moral sanction is feeble, the ability of ritual to inflict reputational consequences wanes. Modernization and the diversification of value systems may disrupt the moral consensus that rituals inherently rely upon (Giddens, 1991). In circumstances characterized by social diversity or significant secularization, ceremonial language referencing supernatural vengeance may not resonate uniformly among audiences. Because of this, its metaphorical power may not be spread out evenly.

The role of media amplification is just as important. As shown by studies of Thai protest movements, symbolic performances have more

political power when they are shared and mediated extensively (Cohen, 2012). Without media presence, whether through traditional journalism or social media platforms, ritual behaviors remain confined and possess a restricted ability to impact broader discourse. So, informal accountability depends on both moral framing and the infrastructure for communication. This reliance engenders susceptibility: should media focus shift, public interest diminish, or other narratives prevail, ritual condemnation may falter. Because of this, its effects are frequently short-lived rather than long-lasting.

3.3 Political Polarization and Instrumentalization

Another limitation comes from the fact that ritual could be used for political purposes. In politically divided settings, symbolic actions may be perceived not as impartial moral interventions but as partisan tactics. Studies on Thai political conflict indicate that symbolic performances are often integrated into larger contests on legitimacy and authority (Rajah, 2005; Phongpaichit & Baker, 2016).

In these circumstances, ritualized condemnation may be reconceptualized as a mechanism of factional rivalry rather than a universal ethical assertion. This new way of looking at it can make it seem less fair and less able to provide cross-cutting accountability pressure. Instead of bringing people together around a common value against corruption, ritual may unintentionally make ideological divides stronger. Political actors may also use ritual symbols to help them reach their strategic goals. When ritual is used for practical purposes, it can lose its moral authority. Accountability research stresses that informal punishment works best when people believe it is fair and credible (Rothstein & Teorell, 2008). If ritual denunciation is commonly seen as politically motivated or aimed at specific groups, its

credibility may suffer. In conclusion, Balancing Power and Constraint, these data suggest that ritualized denunciation holds a contradictory role within the framework of accountability systems. It has a lot of symbolic power on the one hand: it can change the way people think about corruption, bring people together emotionally, and put pressure on people’s reputations. On the other hand, it doesn’t have the power of the law to force people to do things, relies significantly on common beliefs and media coverage, and is still open to political division and being used for other purposes. This dual nature shows how important it is to be precise with your ideas. Ritual should neither be idealized as a transformative substitute for institutional reform, nor should it be regarded as an ineffectual display. It should be seen instead as a temporary and context-dependent type of informal responsibility that can have a big impact on moral discourse but is limited in its potential to bring about long-lasting changes in institutions.

Table 1

Comparative Dimensions of Ritualized Condemnation in Anti-Corruption Processes

Dimension	Ritual as Moral Framing	Ritual as Informal Accountability	Limits of Ritual Sanction
Core Function	Frames corruption as a moral and cosmological violation rather than just legal wrongdoing	Acts as a culturally grounded system of informal accountability when institutions are weak	Reveals the constraints and limits of ritual in producing real institutional change
Mechanism of Action	Uses symbolic classification, ritual	Operates through public visibility,	Limited by lack of legal authority,

Dimension	Ritual as Moral Framing	Ritual as Informal Accountability	Limits of Ritual Sanction
	language, and emotional dramatization	media amplification, and reputational pressure	dependence on belief, and political context
View of Corruption	Seen as moral contamination and betrayal of social order	Seen as a public moral issue requiring social judgment	Recognition that corruption still requires formal legal resolution
Source of Authority	Derived from cultural beliefs, moral cosmology, and symbolic power	Derived from public opinion, collective participation, and media exposure	Weak because it lacks formal legal coercive power
Key Processes	<ul style="list-style-type: none"> - Moral categorization of accused - Use of karmic/religious language - Emotional engagement 	<ul style="list-style-type: none"> - Emerges under institutional failure - Amplified by media - Imposes reputational costs 	<ul style="list-style-type: none"> - No enforcement power - Depends on shared belief - Vulnerable to politicization
Impact on Society	Shapes public perception and moral judgment	Creates social pressure and reputational consequences	Produces temporary and uneven effects
Relationship with Institutions	Exists alongside but beyond legal systems	Functions as a supplement when formal systems fail	Cannot replace institutional accountability mechanisms

Dimension	Ritual as Moral Framing	Ritual as Informal Accountability	Limits of Ritual Sanction
Strengths	<ul style="list-style-type: none"> - Culturally resonant - Easily understood - Emotionally powerful 	<ul style="list-style-type: none"> - Mobilizes public attention - Encourages accountability through pressure 	<ul style="list-style-type: none"> - Highlights need for formal reform - Shows boundaries of symbolic action
Weaknesses	<ul style="list-style-type: none"> - Not legally binding - Interpretation may vary 	<ul style="list-style-type: none"> - Effect depends on media and visibility - Outcomes are inconsistent 	<ul style="list-style-type: none"> - No coercive authority - Short-lived impact - Susceptible to political misuse
Overall Role	Constructs moral narratives of guilt and justice	Acts as a symbolic enforcement mechanism	Serves as a context-dependent and limited form of accountability

4. Integrated Analytical Model

The foregoing findings can be consolidated into a cohesive analytical framework that elucidates the functioning of cursing rituals within anti-corruption contexts as culturally ingrained mechanisms of informal accountability. Utilizing the theoretical constructs of symbolic power (Bourdieu, 1989, 1991) and responsibility theory (Schedler, 1999; Fox, 2007), the research conceptualizes ritualized condemnation as a sequential and relational phenomenon rather than a mere isolated expressive act. The procedure starts with a claim of corruption, which usually includes

claims of wrongdoing, misuse of power, or illegal gain. At this point, corruption is mostly a judicial or administrative charge that is often made in technical terms. But when these kinds of claims are made along with perceived institutional failure, such as investigations that take too long, a lack of openness, or suspected political intervention, a legitimacy gap opens up. This notion of procedural inadequacy is essential; it establishes the moral and political framework that renders other forms of sanction significant (Mutebi, 2008; Rothstein & Teorell, 2008).

In this atmosphere of skepticism, ritual performance becomes a symbolic intervention. Participants perform a public judgment by calling on curses, making oath-like statements, and using artifacts and references that are culturally significant and related to the cosmos. This ritual moment exemplifies the use of symbolic power: it aims to enforce a specific classification of reality by designating the accused as morally deviant and reinterpreting corruption as a transgression of ethical and cosmic order (Bourdieu, 1989; Engel, 2016).

The next step is to build a moral story. Ritual language combines ideas like karma, justice, betrayal, and harm to the community, turning vague accusations into a narrative that people can understand emotionally. At this point, corruption goes from being a problem with the process to a moral drama that speaks to common values and beliefs. Research on Thai political symbols illustrates that these performances transform grievances into morally charged spectacles that can redefine public discourse (Cohen, 2012; Rajah, 2005).

Nonetheless, ritualized condemnation attains more political significance solely by media transmission. Traditional journalism and internet

platforms disseminate ritual acts beyond their immediate participants, enhancing symbolic messages and integrating them into national discourse. In this approach, media visibility is a structural mediator because it turns localized moral judgment into a globally accepted assertion of responsibility. Without this communication amplification, ritual stays important to culture but not to politics.

As diffusion increases, ritual performance creates social pressure, mostly through effects on reputation. When the public sees accused actors as morally compromised, it might hurt their symbolic capital, such as their credibility, honor, and perceived integrity. This makes it more costly for them to do nothing (Bourdieu, 1991; Schedler, 1999). This pressure does not work by forcing people to do things; instead, it works by making them feel bad about themselves and making them look bad in public. It embodies the fundamental mechanism of ritual as casual accountability.

The last step is when the institution only responds in a limited or conditional way. In some circumstances, increased visibility and pressure on the authorities' reputation may lead to symbolic gestures, fresh investigations, or public pronouncements. In other cases, institutions may reject or dismiss ritual acts as being done for show or for political reasons. The response is thus dependent on contextual factors, such as political polarization, media intensity, and the current legitimacy of monitoring institutions (Fox, 2007; Phongpaichit & Baker, 2016).

This analytical sequence illustrates that ritual does not supplant formal accountability systems but rather engages with them within a comprehensive governance framework. The efficacy of ritual predominantly resides in its ability to structure moral perception and produce reputational

ramifications; its constraint is its incapacity to enforce legal compliance. The integrated model bolsters the study's principal thesis: cursing rituals serve as contingent, culturally rooted mechanisms of informal responsibility that draw their efficacy from symbolic power and communicative amplification rather than legal authority.

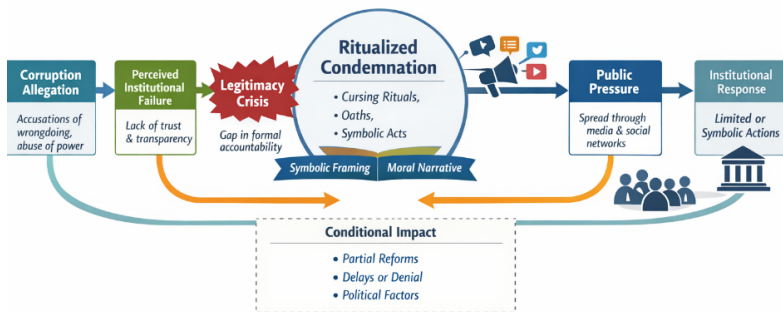


Figure 1

Ritualized anti-corruption process flow

Discussion of Results

This study aimed to investigate the role of Thai cursing rituals as culturally ingrained mechanisms of informal accountability within anti-corruption frameworks. The results indicate that ritualized denunciation functions not only as an expressive protest but also as a systematic symbolic mechanism that transforms corruption claims into morally comprehensible narratives. By combining symbolic power theory (Bourdieu, 1989, 1991) with accountability research (Schedler, 1999; Fox, 2007), the study helps us better understand how moral authority is negotiated outside of formal institutions.

1. Ritual as Symbolic Reframing of Corruption

The results show that ritual performance turns corruption from a technical legal problem into a moral drama. This change is in line with Bourdieu's (1989) idea of symbolic power, which says that agents impose classification schemes that change how people see things. By invoking curses, assigning moral labels, and referencing cosmological concepts, participants recast the accused officials as morally aberrant individuals whose acts disturb not only administrative order but also ethical and communal equilibrium.

This reframing aligns with research in symbolic politics, which underscores that political legitimacy is frequently challenged through performative activities that highlight injustice (Alexander, 2011; Kertzer, 1988). In the Thai context, ritualized condemnation serves as a cultural script that makes corruption emotionally perceptible and ethically significant (Cohen, 2012; Rajah, 2005). Instead of competing with legal speech, ritual establishes an alternative framework of judgment rooted in moral cosmology and social sentiment (Engel, 2016). By placing corruption within a larger moral context, ritual performance broadens the lens through which misconduct is assessed. This indicates that anti-corruption initiatives cannot be comprehended solely through structural analysis; they must also incorporate the symbolic and cultural aspects of moral appraisal.

2. Ritual as an Informal Accountability Mechanism

The results bolster the argument that ritualized condemnation functions as a mechanism of informal accountability. Accountability theory differentiates between vertical and horizontal control mechanisms, encompassing official institutional monitoring and informal societal pressure

(Schedler, 1999). When people think that formal institutions are weak or not working, informal processes may become more important (Fox, 2007; Rothstein & Teorell, 2008). In line with research on Thailand's anti-corruption issues (Mutebi, 2008; Phongpaichit & Baker, 2016), ritualized denunciation often arises when public confidence in procedural justice diminishes. Ritual thus occupies a symbolic void, allowing citizens to express moral assertions and inflict reputational penalties even in the absence of formal enforcement. The reputational aspect corresponds with Bourdieu's (1991) concept of symbolic capital: public designation as morally corrupt can diminish legitimacy and necessitate a reaction, even in the absence of formal consequence.

Ritualized responsibility, on the other hand, is very different from institutional accountability. It depends on being seen, having a moral impact, and being able to communicate rather than on legal force. Consequently, its efficacy relies on media diffusion and audience acknowledgment, as evidenced in research on mediated protest (Cohen, 2012). This research highlights the significance of communication infrastructures in influencing the extent of informal sanctions.

3. Structural and Normative Constraints

The research shows that ritual has symbolic power, but it also shows that it has structural boundaries. Ritual cannot force prosecution or institutional reform without coercive authority. Weber's (1978) differentiation between traditional and rational-legal authority persists in relevance: contemporary bureaucratic frameworks emphasize procedural legality above symbolic sanction. As a result, ritual denunciation may have an effect on discourse without necessarily changing the results of institutions.

Furthermore, the efficacy of rituals is contingent upon collective belief systems and moral agreement. In communities that are becoming more diverse and politically divided, symbolic gestures are more likely to be seen through partisan lenses (Rajah, 2005; Phongpaichit & Baker, 2016). When ritual is viewed as politically useful rather than ethically neutral, its validity as a vehicle for accountability may diminish. Accountability literature underscores that credibility and perceived justice are crucial to effective sanctions (Rothstein & Teorell, 2008). Ritualized denunciation occupies a paradoxical position: it can significantly influence moral discourse while being structurally limited in effecting lasting institutional change.

4. Theoretical Contributions

This research adds to three different areas of study: First, it expands symbolic power theory by illustrating the role of ritual performance in modern governance situations, rather than solely in religious or traditional spheres (Bourdieu, 1989; Alexander, 2011). Second, it enhances the literature on accountability by integrating cultural and symbolic aspects into assessments that are usually focused on institutional design (Fox, 2007; Schedler, 1999). Third, it enhances Southeast Asian political studies by elucidating the intersection of local moral cosmologies with contemporary anti-corruption efforts (Cohen, 2012; Engel, 2016). By synthesizing these viewpoints, the research proposes a hybrid framework wherein ritualized condemnation is perceived as a culturally rooted yet politically significant style of informal accountability.

5. Implications for Anti-Corruption Governance

The results indicate that successful anti-corruption programs must acknowledge the symbolic aspect of legitimacy. If people don't trust the

government, institutional improvement alone may not be enough. Policymakers ought to contemplate the interplay between transparency initiatives, civic participation, and communication techniques with culturally ingrained moral frameworks (Fox, 2007; Rothstein & Teorell, 2008). But it would be wrong to rely on ritualized censure instead of institutional reform. For anti-corruption governance to last, formal accountability systems need to be made stronger, and the moral and communicative frameworks in which they work need to be recognized.

Recommendations

The findings of this study indicate that ritualized condemnation functions as a culturally embedded form of informal accountability, capable of shaping moral discourse and generating reputational pressure in anti-corruption contexts. Nonetheless, its symbolic efficacy is inherently constrained without institutional reform. This section makes suggestions for policies, practices, and research that will help the relationship between cultural legitimacy and formal governing processes.

1. Policy Recommendations

First, anti-corruption policy frameworks ought to encompass a more comprehensive conception of legitimacy that integrates symbolic and cultural aspects. Research on governance has consistently demonstrated that public trust and perceived fairness are fundamental to institutional efficacy. When formal methods are seen as unclear or politically biased, people may use informal symbolic behaviors to make moral claims. So, policymakers should put transparency, clear procedures, and public

communication tactics that directly address trust issues at the top of their list of priorities.

Second, anti-corruption institutions should improve the ways they get people involved. Instead of calling ritualized condemnation “irrational” or “theatrical”, authorities should see these behaviors as signs of perceived accountability inadequacies. Institutional responsiveness—like timely communication, transparent investigation updates, and mechanisms for public oversight—can fill the symbolic void that allows ritual escalation to happen.

Third, policy changes should work on making institutions fairer. Structural problems like elite capture and manipulation of monitoring organizations make both formal and informal accountability less effective. To have long-lasting anti-corruption governance, we need to strengthen independent investigative authorities, protect whistleblowers, and make sure that the law is applied equally.

Lastly, governments should be aware of the communicative ecosystem in which anti-corruption talk happens. Regulation of the media should defend free speech and stop false information from spreading. Informal accountability measures depend on media amplification; thus, responsible journalism and digital transparency policies are important for keeping public conversation balanced.

2. Practice Recommendations

At the practical level, civil society organizations and community actors should use culturally relevant means of communication in a responsible way. Ritualized denunciation illustrates the significance of symbolic framing in fostering moral awareness. But these kinds of actions should not make

polarization worse or go after people without good proof. Accountability scholarship stresses that fairness and credibility are what make something legitimate.

Those who work to stop corruption should combine symbolic engagement with measures based on data. Rituals or symbolic actions may raise awareness, but real change needs campaigns to teach people about the law, working together to investigate, and organized civic monitoring. Moral dramatization and factual documentation work well together to make both the audience and the institution more credible. People who work in the media also play a very important role. Responsible reporting should put ritual acts in the perspective of bigger arguments about governance instead of making them sound exciting. Journalists can assist in turning moral anger into an educated public conversation by connecting symbolic acts to institutional critique. Schools can also help by supporting civic education programs that teach people about ethical government, how to think critically about the media, and how to get involved in a positive way in their communities. Strengthening the normative commitment to accountability can lessen the necessity for extreme symbolic escalation.

3. Further Research Recommendations

Future studies should adopt comparative and multidisciplinary methodologies to enhance the comprehension of ritualized accountability. First, comparative research in Southeast Asia or other areas would help us understand if ritualized condemnation works the same way in diverse cultural and political settings. Cross-national examination might show how differences in the strength of institutions, media systems, and belief systems affect how well rituals work.

Second, a quantitative study could examine the correlation between ritual visibility and quantifiable changes in public trust or institutional responsiveness. Survey-based studies can evaluate the impact of symbolic protest exposure on perceptions of legitimacy, corruption tolerance, or political engagement.

Third, ethnographic fieldwork would enhance comprehension of participants' motivations and interpretive frameworks. While this study relies on documented cases, in-depth interviews could reveal how actors conceptualize the relationship between ritual, morality, and governance. Fourth, future research should investigate the digital transition and ritual. Social media platforms change the size and speed of how symbols are spread, which could make both accountability pressure and polarization worse. Researching the impact of digital settings on ritual performance and reception would enhance modern governance studies.

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