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Validation and Reliability Testing of an Agile Leadership Instrument for Malaysian School Principals

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ABSTRACT

As Malaysia's education system continues to evolve amid rapid policy changes and growing complexity, school principals are expected to demonstrate greater agility in leading diverse school communities. To address the lack of a locally validated tool for measuring this capacity, this study developed and examined an Agile Leadership Instrument designed to capture principals' leadership practices based on teachers' perceptions. A threephase validation process was employed. In the first phase, seven experts in educational leadershipin cluding academics and Ministry of Education officers evaluated 34 items across five theoretical dimensions: Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking, and Evaluate Results. The Content Validity Index (CVI) indicated strong consensus (SCVI/Ave = 0.97; ICVI range = 0.71–1.00), leading to the refinement of five items and removal of two. In the second phase, eleven secondary school teachers assessed item clarity and linguistic suitability using the Face Validity Index (FVI), where all items achieved perfect agreement (IFVI = 1.00; SFVI/Ave = 1.00), confirming excellent clarity and contextual fit. Subsequently, a pilot reliability analysis involving 150 teachers demonstrated high internal consistency across all dimensions, with Cronbach's alpha coefficients ranging from 0.94 to 0.98. These results affirm the instrument's stability, internal coherence, and overall psychometric strength. The final 32item instrument offers a valid, reliable, and contextually appropriate tool for measuring agile leadership among Malaysian school principals. It provides an empirical foundation for leadership evaluation and professional development aligned with Shift 5 of the Malaysia Education Blueprint

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2013–2025, which emphasizes strengthening school leadership capacity. Future research should further validate its structure through Exploratory and Confirmatory Factor Analyses (EFA/CFA) and explore its predictive potential across diverse educational settings.

Keywords: *Content Validity Index; Face Validity Index; Agile Leadership; Malaysian Principals; Instrument Development; Reliability Analysis; Psychometric Validation*

INTRODUCTION

In an era of rapid globalization and educational transformation, school leaders face increasingly complex expectations. Beyond administrative management, they are required to navigate shifting policies, technological disruption, and diverse stakeholder demands while sustaining effective teaching and learning environments. Globally, leadership agility has emerged as a critical competency for guiding institutions through volatility, uncertainty, complexity, and ambiguity (VUCA) while fostering adaptability and continuous improvement.

In Malaysia, these challenges are particularly evident as the education system continues to evolve under the Malaysia Education Blueprint 2013–2025. One of its key priorities, Shift 5, emphasizes strengthening school leadership capacity as a catalyst for educational excellence and systemic improvement (Ministry of Education Malaysia, 2015). Principals are therefore expected to act as adaptive change leaders—capable of anticipating challenges, making timely and informed decisions, empowering collaboration, and guiding their school communities through uncertainty.

Despite growing recognition of the importance of agile leadership in enhancing school effectiveness, empirical research and validated measurement tools in the Malaysian context remain limited. Most existing leadership scales originate from corporate or Western frameworks, which may not fully capture the cultural and contextual realities of Malaysian schools. Furthermore, few studies have rigorously assessed the content validity, face validity, and reliability of leadership instruments suited to local settings.

To address these gaps, the present study aims to develop and validate an Agile Leadership Instrument tailored for Malaysian secondary schools. The instrument measures principals' leadership practices from teachers' perspectives across five dimensions: *Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking,* and *Evaluate Results*. A threephase validation approach was employed, involving (i) expert evaluation through the Content Validity Index (CVI), (ii) teacher assessment using the Face Validity Index (FVI), and (iii) a pilot reliability test using Cronbach's alpha to determine internal consistency. By ensuring theoretical rigor, linguistic clarity, and empirical reliability, this study provides a robust foundation for future research on agile leadership and offers a contextually grounded tool to support leadership development and school improvement initiatives in Malaysia.

BACKGROUND

Agile leadership has emerged as a useful lens for educational leadership as schools operate in conditions marked by volatility, uncertainty, complexity, and ambiguity (VUCA) (Aftab et al., 2022). In Malaysia, secondary school principals contend with continual policy shifts, rapid digitalisation, and varied stakeholder expectations pressures that call for leadership that is both adaptive and responsive. Within this landscape, agile leadership offers a practical approach that helps principals anticipate change, act decisively, and sustain effective learning environments.

A commonly cited model conceptualises agile leadership through five interrelated dimensions—Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking, and Evaluate Results—as articulated by Horney and O'Shea (2015). Recent scholarship links these behaviours to schoollevel innovation, particularly when leaders empower teachers, promote collaborative decisionmaking, and encourage experimentation (Porkodi, 2024; Yılmaz & Özgenel, 2023; Özdemir, 2023). Empirical work further indicates that agile principals cultivate entrepreneurial and innovative teacher behaviours that strengthen school adaptability and performance under uncertainty (Baydar, 2023; Yılmaz & Özgenel, 2023; Özdemir, 2023).

Despite this promise, evidence from Malaysian secondary schools remains limited. Many available instruments originate in Western or corporate contexts and may not transfer well linguistically or culturally to Malaysian schooling. Moreover, rigorous contentvalidity assessments are not always undertaken, even though they are essential to determine whether items adequately represent the intended construct (Connell et al., 2018; Zamanzadeh et al., 2015). Some studies also rely on very small expert panels occasionally fewer than three raters contrary to recommendations that at least three qualified experts be engaged to obtain credible contentvalidity estimates (Polit & Beck, 2006; Shrotryia & Dhanda, 2019). Transparency in reporting validation procedures is sometimes limited, and facevalidity checks with intended respondents are frequently omitted, narrowing practical applicability.

To address these gaps, the present study evaluated the content validity, face validity, and reliability of an Agile Leadership Instrument specifically developed for Malaysian secondary schools. Expert reviewers assessed the relevance and representativeness of each item using the Content Validity Index (CVI), while teachers evaluated clarity and interpretability through the Face Validity Index (FVI). A subsequent pilot reliability test using Cronbach's alpha was conducted to examine the internal consistency of the instrument.

This study was guided by the following research questions:

1. What is the level of content validity of the instrument based on expert ratings using the CVI method?

2. What is the level of face validity of the instrument as perceived by teachers using the FVI method?
3. What is the level of internal consistency reliability for the instrument based on Cronbach's alpha results?

These questions align with the study's primary objective: to establish initial validity and reliability evidence for a culturally grounded instrument that measures Malaysian principals' agile leadership across five dimensions: *Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking,* and *Evaluate Results*. Establishing these indices provides a methodological foundation for future largescale testing and construct validation (e.g., Exploratory and Confirmatory Factor Analyses) while positioning the instrument as a practical tool for leadership evaluation, professional development, and school improvement initiatives within Malaysia's evolving education system.

METHODOLOGY

Research Design

This study adopted a quantitative, multiphase validation design to examine the psychometric soundness of an Agile Leadership Instrument developed for Malaysian secondary schools. The validation process comprised three sequential phases: (1) content validation using the Content Validity Index (CVI), (2) face validation using the Face Validity Index (FVI), and (3) reliability testing through Cronbach's alpha analysis. This approach ensured that the instrument demonstrated both theoretical and empirical adequacy before largescale application.

Instrument Development

The instrument was developed based on Horney and O'Shea's (2015) AGILE Leadership Model, incorporating five theoretical dimensions: Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking, and Evaluate Results. The items were independently constructed and contextualised to reflect the leadership practices, responsibilities, educational terminology, and linguistic norms of secondary school principals in Malaysia. The initial item pool comprised 34 items distributed across the five theoretical dimensions. The instrument was subsequently subjected to content and face validation to establish its relevance, clarity, and suitability for the Malaysian educational context.

In the pilot phase, respondents rated each item using a fivepoint Likert scale measuring the frequency of leadership behaviours:

1 = Never
2 = Rarely
3 = Sometimes

4 = Mostly
5 = Always
This format allowed teachers to indicate how often their principals exhibited agile leadership practices in daily school contexts.

Phase 1: Content Validity (CVI)

Seven experts in educational leadership five senior academics from Malaysian public universities and two officers from the Ministry of Education (MOE) were purposively selected to evaluate item relevance and representativeness. Each expert rated the items using a 4point scale: 1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, and 4 = Highly relevant (Polit & Beck, 2006).

The ItemLevel Content Validity Index (ICVI) was calculated by dividing the number of experts who rated an item as 3 or 4 by the total number of experts. The ScaleLevel Content Validity Index (SCVI/Ave) was obtained by averaging the ICVI values across all items. Items with ICVI values below 0.78 were revised or removed, following the thresholds recommended by Polit and Beck (2006) and Zamanzadeh et al. (2015). Qualitative comments from experts were also used to refine the wording and improve conceptual clarity.

Phase 2: Face Validity (FVI)

After revision, the refined instrument was administered to 11 secondary school teachers to assess clarity, interpretability, and contextual appropriateness. Teachers rated each item using a 4point scale: 1 = Not clear, 2 = Somewhat clear, 3 = Clear, and 4 = Very clear (Yusoff, 2019). The ItemLevel FVI (IFVI) was computed as the proportion of teachers assigning ratings of 3 or 4, while the ScaleLevel FVI (SFVI/Ave) represented the mean of all IFVI scores. Items with values below 0.83 were reviewed and reworded accordingly.

Phase 3: Reliability Testing (Pilot Study)

The pilot reliability test involved 150 secondary school teachers from various Malaysian states selected through purposive sampling. Data collected were analyzed using SPSS version 28 to determine internal consistency reliability via Cronbach's alpha. Alpha coefficients equal to or greater than 0.70 were considered acceptable, and values exceeding 0.90 indicated excellent reliability (Nunnally & Bernstein, 1994). Reliability coefficients were computed for each subscale and for the overall instrument to confirm its internal consistency and measurement stability.

Ethical Considerations

All participants were informed about the study's objectives, confidentiality of their responses, and their right to withdraw voluntarily at any stage. Expert reviewers and teacher respondents participated with informed consent. Ethical approval was obtained from the corresponding university's research ethics committee prior to data collection.

FINDINGS

Item level Content Validity Index (ICVI)
The initial version of the instrument comprised 34 items distributed across five key dimensions of agile leadership: *Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking,* and *Evaluate Results*.
The outcomes of the content validation process demonstrated high levels of expert consensus:

1. The ICVI values ranged from 0.71 to 1.00, indicating generally strong agreement among the seven raters.
2. A total of 27 items achieved ICVI scores of 0.86 or higher, reflecting excellent content relevance and representativeness.
3. Two items IA2 and LT2 recorded ICVI values of 0.71, falling below the acceptance threshold of 0.78 (Polit & Beck, 2006); these were subsequently removed from the instrument.
4. Five items (IA5, IA7, LT1, ER5, ER7) were revised based on qualitative feedback to improve clarity, eliminate redundancy, and better align with their respective constructs.

Overall, the remaining items demonstrated strong content agreement, with ICVI scores between 0.86 and 1.00. The combination of quantitative indices and expert qualitative comments confirmed the instrument's conceptual relevance, linguistic precision, and theoretical coherence with the agile leadership framework.

The Anticipate Change dimension comprised six items (AC1–AC6). Expert evaluations demonstrated unanimous agreement, with each item achieving an ICVI of 1.00, surpassing the minimum acceptable threshold of 0.78 for a sevenmember expert panel (Polit & Beck, 2006). No items were deemed ambiguous or irrelevant; therefore, no deletions were required. The computed ScaleLevel Content Validity Index (SCVI/Ave) was 1.00, exceeding the recommended benchmark of 0.90 (Zamanzadeh et al., 2015). Collectively, these results indicate excellent content validity and a high level of expert consensus regarding the clarity, representativeness, and conceptual alignment of all items within the Anticipate Change construct (see Table 1).

Table 1: CVI on Anticipate Change

	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Experts in Agreement	Items CVI
Anticipate Change									
AC1	1	1	1	1	1	1	1	7	1
AC2	1	1	1	1	1	1	1	7	1
AC3	1	1	1	1	1	1	1	7	1
AC4	1	1	1	1	1	1	1	7	1
AC5	1	1	1	1	1	1	1	7	1
AC6	1	1	1	1	1	1	1	7	1
								SCVI/Ave	**1**

Note The heat map illustrates expert agreement levels for each item under the Anticipate Change dimension. Green cells represent agreement among experts (ratings of 3 or 4 on the relevance scale). ICVI denotes the proportion of experts who rated an item as relevant, while SCVI/Ave represents the average of all ICVI values within this dimension. Values of ***ICVI ≥ 0.78*** *(Polit & Beck, 2006) and* ***SCVI/Ave ≥ 0.90*** *(Zamanzadeh et al., 2015) indicate strong content validity*

The Generate Confidence dimension consisted of six items (GC1–GC6). All items achieved an ICVI of 1.00, exceeding the minimum acceptance threshold of 0.78 for a sevenmember expert panel (Polit & Beck, 2006). The SCVI/Ave for this dimension was also 1.00, surpassing the recommended benchmark of 0.90 (Zamanzadeh et al., 2015). These findings demonstrate excellent content validity and strong expert consensus regarding the clarity, relevance, and representativeness of all items within the Generate Confidence construct (see Table 2).

Table 2: Heat Map CVI on Generate Confidence

	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Experts in Agreement	Items CVI
Generate Confidence									
GC1	1	1	1	1	1	1	1	7	1
GC2	1	1	1	1	1	1	1	7	1
GC3	1	1	1	1	1	1	1	7	1
GC4	1	1	1	1	1	1	1	7	1
GC5	1	1	1	1	1	1	1	7	1
GC6	1	1	1	1	1	1	1	7	1
								SCVI/Ave	**1**

Note The heat map displays the level of expert consensus for each item within the Generate Confidence dimension. Greenshaded cells indicate agreement among experts (ratings of 3 or 4 on the relevance scale). ICVI refers to the proportion of experts rating an item as relevant, while SCVI/Ave represents the mean of all ICVI values for the dimension. According to Polit and Beck (2006), an ***ICVI ≥ 0.78*** *is considered acceptable when seven experts are involved, and an* ***SCVI/Ave ≥ 0.90*** *(Zamanzadeh et al., 2015) indicates strong content validity.*

The Initiate Action dimension initially comprised seven items (IA1–IA7). Expert evaluations showed that five items achieved an ICVI of 1.00, while two items (IA2 and IA7) obtained lower scores of 0.71 and 0.86, respectively. In accordance with the guideline proposed by Polit and Beck (2006), items with ICVI values below 0.78 warrant reconsideration; thus, item I2 was removed from the instrument. Items IA5 and IA7, which received marginal scores of 0.86, were retained after qualitative review and subsequently revised to enhance clarity and alignment with the construct. The computed SCVI/Ave for this dimension was 0.92, exceeding the acceptable threshold of 0.90 (Zamanzadeh et al., 2015). Overall, the results indicate adequate content validity for the Initiate Action domain, with minor revisions improving item precision and conceptual consistency (see Table 3).

Table 3: Heat Map CVI on Initiate Action

	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Experts in Agreement	Items CVI
Initiate Action									
IA1	1	1	1	1	1	1	1	7	1
IA2	1	0	1	1	1	1	0	5	0.71
IA3	1	1	1	1	1	1	1	7	1
IA4	1	1	1	1	1	1	1	7	1
IA5	1	0	1	1	1	1	1	6	0.86
IA6	1	1	1	1	1	1	1	7	1
IA7	1	0	1	1	1	1	1	6	0.86
								SCVI/Ave	**0.92**

Note. The heat map illustrates expert agreement levels for each item within the Initiate Action dimension. Cells shaded in green represent agreement (rating = 3 or 4), while unshaded cells indicate disagreement (rating < 3). ICVI denotes the proportion of experts rating an item as relevant, and SCVI/Ave represents the average of all ICVI values across items in this dimension. A value of ICVI ≥ 0.78 (Polit & Beck, 2006) and SCVI/Ave ≥ 0.90 (Zamanzadeh et al., 2015) indicates strong content validity.

The Liberate Thinking dimension comprised eight items (LT1–LT8). Expert assessments indicated that six items achieved an ICVI of 1.00, while two items (LT1 = 0.86 and LT2 = 0.71) fell below the recommended threshold of 0.78 (Polit & Beck, 2006). Accordingly, item LT2 was removed, and item LT1 was revised to enhance clarity and alignment with the construct. The computed SCVI/Ave for this dimension was 0.95, exceeding the benchmark value of 0.90 (Zamanzadeh et al., 2015). These results demonstrate acceptable content validity for the Liberate Thinking domain, with minor refinements improving item clarity and representativeness (see Table 4).

Table 4: Heat Map CVI on Liberate Thinking

	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Experts in Agreement	Items CVI
Liberate Thinking									
LT1	1	0	1	1	1	1	1	6	0.86

LT2	1	0	1	1	1	1	0	5	0.71
LT3	1	1	1	1	1	1	1	7	1
LT4	1	1	1	1	1	1	1	7	1
LT5	1	1	1	1	1	1	1	7	1
LT6	1	1	1	1	1	1	1	7	1
LT7	1	1	1	1	1	1	1	7	1
LT8	1	1	1	1	1	1	1	7	1
								SCVI/Ave	**0.95**

Note The heat map presents expert ratings for items under the Liberate Thinking dimension. Greenshaded cells indicate agreement among experts (ratings of 3 or 4 on the relevance scale), while grey cells denote disagreement. ICVI represents the proportion of experts rating an item as relevant, and SCVI/Ave refers to the average of all ICVI values across the dimension. Values of ***ICVI ≥ 0.78*** *(Polit & Beck, 2006) and* ***SCVI/Ave ≥ 0.90*** *(Zamanzadeh et al., 2015) are interpreted as evidence of strong content validity.*

The Evaluate Results domain contained seven items (ER1–ER7). Five items achieved ICVI = 1.0, while two items (ER5 and ER7) scored 0.86. Since these were above the 0.78 cutoff (Polit & Beck, 2006), they were retained with wording revisions. The domain achieved SCVI/Ave = 0.96, surpassing the 0.90 benchmark (Zamanzadeh et al., 2015). Overall, this domain demonstrated good content validity with partial agreement among experts, and revisions were made accordingly (Table 5).

Table 5: Heat Map CVI on Evaluate Results

	Rater 1	**Rater 2**	**Rater 3**	**Rater 4**	**Rater 5**	**Rater 6**	**Rater 7**	**Experts in Agreement**	**Items CVI**
Evaluate Results									
ER1	1	1	1	1	1	1	1	7	1
ER2	1	1	1	1	1	1	1	7	1
ER3	1	1	1	1	1	1	1	7	1
ER4	1	1	1	1	1	1	1	7	1
ER5	1	1	0	1	1	1	1	6	0.86
ER6	1	1	1	1	1	1	1	7	1
ER7	1	1	0	1	1	1	1	6	0.86
								SCVI/Ave	**0.96**

Note. The heat map illustrates expert agreement levels for each item within the Evaluate Results dimension. Green cells represent agreement among experts (ratings of 3 or 4 on the relevance scale), while grey cells indicate disagreement. ICVI refers to the proportion of experts rating an item as relevant, and SCVI/Ave denotes the average of all ICVI values for the dimension. According to Polit and Beck (2006), an ICVI ≥ 0.78 is acceptable for seven experts, while an SCVI/Ave ≥ 0.90 (Zamanzadeh et al., 2015) demonstrates strong overall content validity.

Questionnaire Refinement.

Expert evaluations indicated a consistently high level of content agreement across all five dimensions of agile leadership. *Anticipate Change* obtained a perfect average agreement (SCVI/Ave = 1.00), reflecting universal consensus among raters. Slightly

lower but still excellent scores were reported for *Generate Confidence* (0.95), *Liberate Thinking* (0.94), *Initiate Action* (0.93), and *Evaluate Results* (0.92). These results suggest that while all domains are wellrepresented in the instrument, experts perceived *Anticipate Change* as the most clearly articulated dimension, underscoring its conceptual strength within the Malaysian educational leadership context

The *Generate Confidence* dimension initially consisted of six items, all of which achieved full expert agreement during the content validation phase. Each item was rated as relevant or highly relevant by all seven experts, resulting in a perfect ICVI of 1.00 across all items and a corresponding SCVI/Ave of 1.00. No item was flagged for revision or removal. These findings indicate that the items within this domain were conceptually clear and effectively captured principals' ability to inspire trust, build confidence among staff, and create psychologically safe school environments. The unanimous expert agreement underscores the robustness of this dimension and its strong alignment with the theoretical framework of agile leadership.

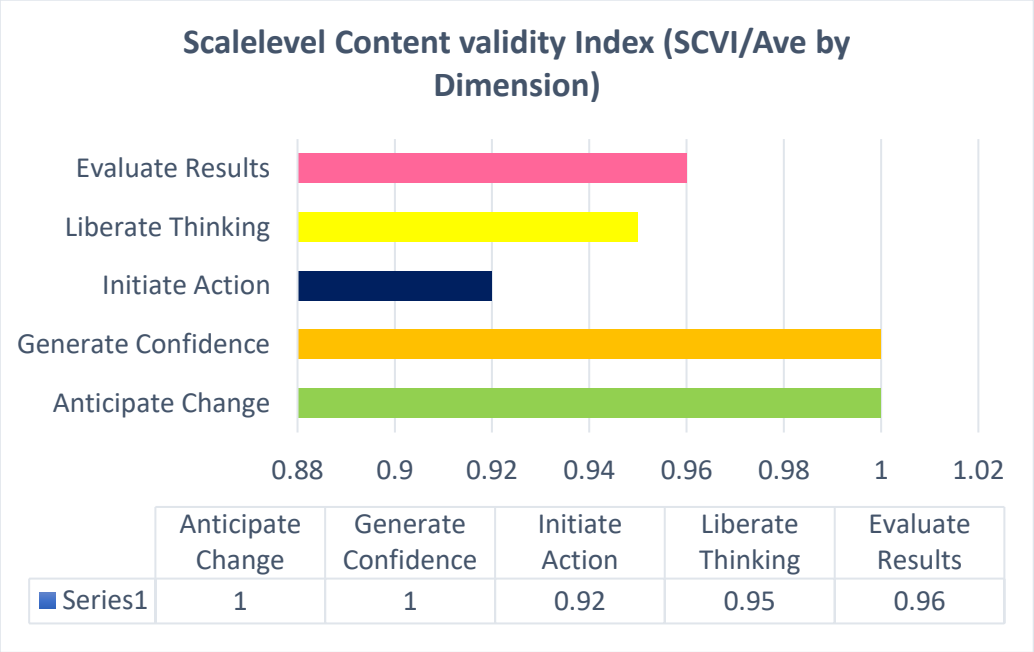
The *Initiate Action* dimension initially comprised seven items. Expert evaluation revealed that one item (IA2) obtained a lower ICVI value of 0.71, falling below the acceptable threshold of 0.78 (Polit & Beck, 2006), and was therefore removed. Two additional items (IA5 and IA7) received lower consensus levels and were subsequently revised to improve clarity and strengthen their alignment with the construct definition. The remaining items recorded ICVI values between 0.86 and 1.00, contributing to a satisfactory overall SCVI/Ave of 0.92. These results demonstrate that the *Initiate Action* domain achieved acceptable content validity, with the revisions enhancing both conceptual precision and linguistic clarity to better reflect principals' ability to make timely, decisive, and goaloriented actions in school leadership contexts.

The *Liberate Thinking* dimension originally comprised eight items. Expert evaluations revealed that one item (LT2) received a lower ICVI value of 0.71, which did not meet the minimum threshold of 0.78 (Polit & Beck, 2006). Consequently, LT2 was removed from the scale. Another item (LT1) was revised to improve clarity and reduce potential ambiguity. The remaining items demonstrated strong expert consensus, with ICVI values ranging from 0.86 to 1.00, resulting in an overall SCVI/Ave of 0.95. These findings suggest that the items within this construct were generally viewed as relevant and wellaligned with the conceptual definition of liberating thinking—a leadership quality that encourages creativity, open dialogue, and innovative problemsolving among teachers.

The *Evaluate Results* dimension initially consisted of seven items. Expert feedback indicated that while five items achieved perfect agreement (ICVI = 1.00), two items (ER5 and ER7) received slightly lower scores (ICVI = 0.86). Since these values remained above the acceptable threshold of 0.78 (Polit & Beck, 2006), both items were retained but underwent wording revisions to improve clarity and reduce redundancy. The

overall SCVI/Ave for this dimension was 0.96, exceeding the recommended benchmark of 0.90 (Zamanzadeh et al., 2015). These findings confirm that the *Evaluate Results* construct demonstrates strong content validity, effectively capturing the reflective and outcomeoriented aspects of agile leadership particularly principals' capacity to assess decisions, learn from outcomes, and refine school practices for continuous improvement. Figure 1 presents the scalelevel CVI (SCVI/Ave) for each dimension.

Figure 1: Scale level Content Validity Index (SCVI/Ave) by Dimensions



Note: Figure 1 presents the ScaleLevel Content Validity Index (SCVI/Ave) across the five dimensions, demonstrating consistently high expert agreement.

Following expert evaluation, the instrument was refined through the removal of two items (IA2 and LT2) and the revision of five items (IA5, IA7, LT1, ER5, ER7). The final version consisted of 32 items distributed across five dimensions of agile leadership. The instrument achieved an overall SCVI/Ave of 0.97, surpassing the recommended minimum threshold of 0.90 (Polit et al., 2007), indicating excellent scalelevel content validity. These results confirm that the refined instrument demonstrates strong content relevance, conceptual alignment, and linguistic clarity, thereby supporting its adequacy in capturing the intended dimensions of agile leadership within the Malaysian secondary school context.

Face Validity Index (FVI)

After incorporating expert feedback and removing two items during the content validation stage, the refined 32 item instrument was evaluated for face validity by eleven secondary school teachers. Each item was rated for clarity, comprehensibility,

and linguistic suitability using a fourpoint scale. The analysis revealed unanimous agreement across all respondents, with every item receiving an ItemLevel Face Validity Index (IFVI) of 1.00 and a ScaleLevel FVI (SFVI/Ave) of 1.00. These results confirm that all items were perceived as clear, relevant, and appropriate for the intended audience. Representative items include statements such as *"anticipates emerging challenges"* (Anticipate Change), *"builds trust with responsible parties"* (Generate Confidence), *"acts promptly to implement agreed plans"* (Initiate Action), *"encourages creative problemsolving among teachers"* (Liberate Thinking), and *"reviews outcomes to refine future decisions"* (Evaluate Results). Overall, these findings affirm that the instrument demonstrates excellent face validity and is linguistically and contextually suitable for teachers in Malaysian secondary schools.

The final version of the instrument consists of 32 validated items across five dimensions:

Anticipate Change	6 items
Generate Confidence	6 items
Initiate Action	6 items
Liberate Thinking	7 items
Evaluate Results	7 items

The CVI and FVI results provide strong evidence that the instrument is both conceptually valid and practically clear, confirming its suitability for assessing principals' agile leadership practices in Malaysian secondary schools. The purpose of this study was to evaluate the content and face validity of an agile leadership instrument designed to measure school principals' leadership practices based on teacher perceptions in the Malaysian education context. The results demonstrate that the instrument possesses strong indicators of validity at both the expert (CVI) and respondent (FVI) levels, supporting its potential for future application in empirical educational research**.**

Internal Consistency Reliability (Cronbach's Alpha)

To further establish the reliability of the Agile Leadership instrument, internal consistency analysis was conducted for each of the five dimensions using Cronbach's alpha coefficients. The results, derived from 150 valid responses, demonstrated

excellent reliability across all dimensions, as all alpha values exceeded the recommended threshold of 0.70 (Nunnally & Bernstein, 1994), indicating high internal consistency among items within each construct. According to the psychometric guidelines proposed by Nunnally and Bernstein (1994), an alpha coefficient of 0.70 is the minimum acceptable for exploratory research, while a value of 0.80 or higher is desired for applied research. The alpha values obtained in this study, all exceeding 0.94, surpass these conventional standards and fall within the range considered highly desirable for scales used in making highstakes decisions (Nunnally & Bernstein, 1994). For the Anticipate Change dimension (6 items), Cronbach's alpha was 0.944, reflecting strong coherence among items that assess principals' ability to foresee and manage change. The Generate Confidence dimension (6 items) achieved an alpha of 0.971, denoting very high reliability and consistent responses regarding trustbuilding and relationship management.

Similarly, the Initiate Action dimension (6 items) recorded a Cronbach's alpha of 0.949, confirming that the items reliably measure principals' proactive and responsive decisionmaking tendencies. The Liberate Thinking dimension (7 items) obtained an alpha of 0.977, indicating exceptional internal consistency in capturing creativity, openness, and innovationrelated leadership behaviors. Finally, the Evaluate Results dimension (7 items) demonstrated a Cronbach's alpha of 0.978, confirming outstanding reliability in assessing reflective and outcomeoriented leadership practices.

Overall, the findings affirm that all five dimensions of the Agile Leadership instrument exhibit excellent internal consistency (α = 0.94–0.98), thereby establishing the instrument's reliability and suitability for subsequent largescale validation analyses such as Exploratory and Confirmatory Factor Analysis.

Table 6: Cronbach's Alpha Reliability Coefficients for Agile Leadership Dimensions

Dimension	Number of Items	Cronbach's Alpha (α)	Interpretation
Anticipate Change	6	0.944	Excellent reliability
Generate Confidence	6	0.971	Excellent reliability
Initiate Action	6	0.949	Excellent reliability
Liberate Thinking	7	0.977	Excellent reliability
Evaluate Results	7	0.978	Excellent reliability

The high SCVI/Ave values and α = .94–.98 across dimensions collectively support the instrument's psychometric soundness.

Discussion

The results of this study provide strong empirical support for the validity and reliability of the newly developed Agile Leadership instrument tailored for Malaysian secondary school principals. The combination of content validity (CVI), face validity (FVI), and internal consistency reliability (Cronbach's alpha) demonstrates that the instrument effectively captures the multidimensional nature of agile leadership within the educational context.

The CVI results indicated excellent agreement among experts, with scalelevel averages (SCVI/Ave) ranging from 0.92 to 1.00 across the five dimensions: Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking, and Evaluate Results. These findings affirm that the instrument items are conceptually sound, contextually relevant, and theoretically aligned with the Agile Leadership model proposed by Horney and O'Shea (2015). Similarly, the FVI outcomes revealed unanimous consensus among teachers (SFVI/Ave = 1.00), confirming that all items were clear, linguistically appropriate, and easily comprehensible for the intended respondents.

Beyond validity, the Cronbach's alpha coefficients (α = 0.94–0.98) for all dimensions indicate exceptional internal consistency, far exceeding the minimum acceptable standard of 0.70 (Nunnally & Bernstein, 1994). These results show that the items within each subscale are highly coherent and measure their respective constructs consistently. This reinforces the robustness of the instrument and highlights its readiness for broader application in educational leadership research and practice.

Collectively, these findings underscore that agile leadership originally conceptualized within organizational and corporate contexts translates effectively into the educational domain. The validated instrument provides a reliable framework for assessing principals' adaptive, innovative, and reflective leadership behaviors in Malaysian schools. Furthermore, it aligns with the objectives of the Malaysia Education Blueprint 2013–2025 (Shift 5), which emphasizes strengthening leadership capacity as a driver of school improvement.

Future research may build upon this foundation by conducting Exploratory and Confirmatory Factor Analyses (EFA/CFA) to confirm the underlying structure of the instrument and by expanding data collection to a larger, more diverse sample across different school types. Such efforts would further establish the tool's generalizability and contribute to a more comprehensive understanding of agile leadership in Malaysia's dynamic educational landscape.

Theoretical and Practical Implications

The findings of this study affirm that agile leadership though originally conceptualized in corporate and organizational contexts is equally relevant and valuable within the realm of school leadership. The validated instrument offers a clear and structured

framework for assessing agile leadership practices among Malaysian school principals. It holds practical potential for guiding leadership development, informing training initiatives, and shaping evidencebased policy decisions.

This study also addresses a significant gap in local educational research, where instruments measuring agile leadership are limited and often lack rigorous validation. The findings are consistent with Shift 5 of the Malaysia Education Blueprint 2013–2025, which highlights the strengthening of school leadership capacity as a key driver of educational transformation (Ministry of Education Malaysia, 2013). By producing a contextually adapted and empirically validated tool, this study contributes to Malaysia's broader efforts to cultivate high performing, agile school leaders capable of navigating today's dynamic and complex educational landscape. The instrument may further serve as a foundation for data driven professional development, leadership evaluation, and continuous school improvement. The instrument can be applied in school leadership training, appraisal, and succession planning to promote evidence based leadership development. The combined CVI, FVI, and reliability analyses confirm the robustness of the 32 item Agile Leadership Instrument.

LIMITATIONS AND RECOMMENDATION

Although this study provides strong evidence of validity and reliability for the Agile Leadership instrument, several limitations should be acknowledged. First, the validation process focused primarily on content validity (CVI), face validity (FVI), and internal consistency reliability (Cronbach's alpha). While these methods establish the instrument's foundational psychometric soundness, further analyses such as Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are needed to confirm the underlying factor structure and assess construct validity more rigorously.

Second, the study's participants were limited to teachers from selected secondary schools, which may restrict the generalizability of the findings. Future studies should expand the sampling to include principals, district education officers, and teachers from various types of schools, including rural, urban, and fully residential institutions, to ensure broader applicability across different educational contexts.

Third, as the current study relied on self report ratings, potential response bias cannot be entirely ruled out. Subsequent research could incorporate multi source data, such as peer or supervisor assessments, to strengthen validity through triangulation.

Finally, longitudinal studies are recommended to examine how agile leadership practices evolve over time and influence school performance, teacher innovation, and student outcomes. Conducting these followup investigations will not only enhance the

robustness of the instrument but also deepen the understanding of how agile leadership contributes to sustainable educational transformation in Malaysia.

CONCLUSION

This study successfully developed and validated an Agile Leadership instrument designed to measure Malaysian school principals' leadership agility across five dimensions Anticipate Change, Generate Confidence, Initiate Action, Liberate Thinking, and Evaluate Results. The instrument demonstrated strong psychometric properties, with excellent content and face validity and high internal consistency reliability (α = 0.94–0.98) across all dimensions. These results confirm that the instrument is both conceptually sound and contextually appropriate for Malaysian educational settings.

The validated tool provides researchers and practitioners with a reliable means of assessing agile leadership practices in schools, supporting leadership development, performance appraisal, and professional training initiatives. By offering an empirically grounded measurement framework, this study contributes to the advancement of educational leadership scholarship in Malaysia and aligns with national efforts under Shift 5 of the Malaysia Education Blueprint 2013–2025 to strengthen school leadership capacity. Future research should continue to refine and extend the instrument through largescale validation, crosscultural comparisons, and longitudinal studies to further establish its generalizability and predictive potential.

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AUTHOR(S) CONTRIBUTION

All authors contributed equally to the conceptualization, writing and final approval of the manuscript.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

ETHICS STATEMENT

The authors declare no ethical approval was required for this study

ETHICS STATEMENT

This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.

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