

Teacher readiness for curriculum reform in Vietnam: understanding, attitudes, and self-efficacy

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ABSTRACT

In the context of the 2018 General Education Curriculum (GEC 2018) implementation in Vietnam, this study investigates lower secondary school teachers' understanding (UND), attitudes (ATT), and self-efficacy (SE). The research developed a survey instrument grounded in social cognitive theory (SCT). Drawing from a large-scale survey of 1,444 teachers, descriptive statistics indicate that levels of UND, ATT, and SE all significantly exceed the theoretical midpoint ($M > 2.5$). While teachers demonstrate the highest confidence in UND of periodic assessment techniques ($M = 3.98$, $SD = 1.17$), they exhibit the lowest UND of foundational legal documents ($M = 3.74$, $SD = 1.31$). Geographically, teachers in mountainous and Northern regions demonstrated a higher self-perceived UND and more positive ATT than their urban and Southern counterparts. Additionally, multiple linear regression analysis finds that UND and ATT are significant positive predictors, jointly explaining 37.2% of the variance in teachers' SE. Notably, UND emerged as the stronger predictor ($\beta = 0.371$) compared to ATT ($\beta = 0.268$). These findings suggest the importance of pivoting pedagogical transformation from technical training only toward aligning with the curriculum's core philosophy. Simultaneously, synchronized infrastructure investment is required to bridge the implementation gap between intended curriculum expectations and enacted curriculum realities.

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1. INTRODUCTION

Over the past decades, educational systems in many countries have witnessed a significant shift toward a competency-based and learner-centered model. This trend prioritizes critical thinking, problem-solving, and innovative assessment reform [1]. Aligning with this contemporary wave of reform, Vietnam enacted the 2018 General Education Curriculum (GEC 2018), reflecting a strategic pivot from knowledge transmission to a competency-based approach. However, international evidence consistently indicates that the mere issuance of policy does not equate to actual change in the classroom. The gap between the intended curriculum and the enacted curriculum is often substantial, driven by institutional and cultural barriers, and particularly by teacher-related factors [2], [3].

Within this reform process, teachers are recognized as central agents of change [4], [5]. Curriculum implementation is not a passive adoption of mandates but rather a sense-making process, where teachers actively interpret and operationalize reform principles within their daily instructional contexts [3]. Accordingly, the success of reform depends closely on the interaction among understanding (UND) (what teachers understand), attitudes (ATT) (how teachers feel), and self-efficacy (SE) to implement (what teachers believe they can achieve). Although a thorough UND of curriculum goals and philosophy serves as a foundational prerequisite [6], UND alone does not guarantee effective pedagogical transformation. Substantive changes require a synchronous integration of policy UND, positive ATT toward innovation [7], and the SE necessary to overcome practical challenges [8], [9].

In Vietnam, GEC 2018 imposes complex requirements regarding pedagogical transformation and competency-based assessment [10]. While previous research has established a foundation for exploring teacher adaptation to innovation, two fundamental research gaps remain. First, the literature is largely fragmented, often examining cognitive (UND), affective (ATT), or behavioral (SE) dimensions in isolation. Achieving a holistic perspective on teacher readiness thus necessitates an integrated evaluation of how these three pillars interact within the same research population. Second, there is a scarcity of large-scale empirical evidence regarding the influence of macro-level contexts on teacher readiness. Existing studies on the GEC 2018 in Vietnam have predominantly relied on localized urban samples, leaving a critical data gap concerning geographic inequality between regions (North, Central, and South) and specific working contexts (urban, rural, and mountainous). Such a deficiency leads to an under-theorization of how macro-level regional disparities mediate reform implementation [11], [12]. Consequently, the core problem addressed in this study is the inherent tension between teachers' internal psychological readiness, specifically how their UND and ATT predict their SE, and the external, systemic resource barriers they face across diverse geographic regions. This research resolves this issue by providing a predictive and regional comparative analysis, thereby proposing strategies and promoting equity within the educational reform trajectory.

Explicitly, this study makes three major contributions to the literature. First, it employs a multidimensional conceptual framework to simultaneously analyze and establish the predictive relationships among UND, ATT, and SE. Second, it utilizes a large-scale dataset with broad geographic coverage, incorporating deliberate stratification across diverse regional and working contexts in Vietnam, including the underrepresented mountainous areas. Third, it uncovers unexpected "center-periphery inversions" regarding teacher readiness, providing novel empirical evidence that challenges conventional assumptions about educational inequality in developing nations.

- What is the current status of lower secondary school teachers' level of UND, ATT, and SE to implement GEC 2018? (RQ1)
- How do regional location (North/Central/South) and working context (urban/rural/mountainous areas) affect teachers' level of UND, ATT, and SE to implement the new curriculum? (RQ2)
- To what extent do teachers' UND and ATT predict their SE in implementing the GEC 2018? (RQ3)

The shift from a content-based to a competency-based education requires substantial pedagogical transformation rather than superficial compliance. However, international research consistently shows that reform policy does not automatically translate into classroom change [13]. The enacted curriculum often diverges significantly from the intended curriculum due to institutional, cultural, and teacher-related factors [2], [3], [13]. To enhance the likelihood of successful curriculum implementation, teachers must possess a comprehensive UND of the program's objectives, expected learning outcomes, and underlying rationale, alongside the requisite pedagogical skills to effectively instruct students [6], [14]. Hence, reform success depends not only on policy design but also on how teachers interpret, internalize, and operationalize reform principles in daily practice. In other words, teachers play the role of central agents [4], [5]. Curriculum reform ultimately becomes meaningful or symbolic through teachers' classroom enactment [3]. Implementation is conceptualized as a process of sense-making in which teachers actively construct meaning from policy signals instead of passively applying directives. Ultimately, the translation of policy into practice relies heavily on a triad of teacher attributes: their conceptual grasp of the change, their emotional disposition toward it, and their confidence in executing it. As highlighted by change management literature, the extent to which educators embrace new initiatives is shaped by their assessments of the policy's logical consistency, practical viability, and resonance with their core professional identities [7], [15]. It is critical to note that purely cognitive awareness is insufficient to drive genuine pedagogical shifts. Instead, successfully actualizing a curriculum requires a holistic and active synergy between teachers' comprehension, their ATT toward the innovation, and their perceived SE.

Teachers' UND of curriculum reform is a multidimensional construct. Research on policy enactment emphasizes that teachers' sense-making of reform goals, structures, and expectations mediates how curriculum policies are interpreted, translated, and enacted in practice [13], [15]. Without policy clarity, reforms risk becoming procedural checklists instead of actually achieving pedagogical transformation.

Within a competency-based model, which typically requires student-centered approaches, formative assessment, and interdisciplinary integration [1], teachers must reconcile new pedagogical expectations with prior beliefs and routines. It is worth noting that assessment literacy remains uneven globally, and misalignment between instructional and assessment practices frequently undermines reform intentions [16]. Together, these components reflect a multidimensional construct of curriculum UND rather than a single cognitive variable. Studies show that teachers' clarity about reform goals predicts instructional enactment [3], [15]. Reform coherence, which is defined as perceived alignment among curriculum, assessment, and professional development, facilitates deeper implementation [2], [17]. However, as teachers often interpret prescribed curriculum documents through both an objective reproduction of the developers' intentions and their own subjective construction based on personal knowledge and experiences [18], they do not always possess an adequate UND of new curricula and instructional methods required for successful implementation. According to Chimbi and Jita [19], a lack of UND of the innovation process often leads teachers to appear resistant to change during the initial stages, whereas in reality they are merely under-informed about the reforms. The mere provision of new curriculum materials does not guarantee a change in classroom practices [13]; consequently, a primary policy implication is that teachers must be equipped with foundational knowledge of the innovation policy and undergo reskilling to effectively implement the change [19]. On top of that, research also documents a persistent knowledge–practice gap. Even when teachers demonstrate conceptual awareness of reform principles, they may continue traditional instructional routines [3]. Structural pressures, examination systems, and entrenched pedagogical norms often mediate enactment. Therefore, while UND is a necessary precondition for effective implementation, it is insufficient on its own. Cognitive alignment must be accompanied by positive ATT and a sense of SE to translate UND into action.

ATT toward reform represent teachers' affective and evaluative orientations regarding its value, relevance, and feasibility. In curriculum reform contexts, teachers' acceptance or resistance significantly shapes classroom enactment. Research distinguishes between reform acceptance, which is characterized by perceived relevance and professional growth, and reform resistance, often associated with workload concerns, policy overload, or misalignment with existing beliefs [20]. Teachers are more likely to support reforms they perceive as pedagogically meaningful and responsive to student needs. Perceived relevance is particularly influential. When teachers see reform goals as aligned with classroom realities, their engagement increases [17]. Conversely, reforms perceived as externally imposed or impractical may generate symbolic compliance rather than authentic change.

Frequently, educational reforms are implemented via a top-down approach and imposed upon teachers without prior consultation, despite the expectation that they alter their behavioral paradigms, and occasionally, their underlying values and assumptions [21], [22]. Teachers exhibit a natural resistance to reform, as initiating change or experimenting with novel practices frequently entails assuming the risk of failure [23]–[25]. However, certain studies challenge these commonly held perspectives, such as Chimbi and Jita [19]. Indeed, teachers' motivation and positive orientation toward educational change are significantly associated with engagement in innovative instructional practices [26], [27]. Teachers with favorable reform perceptions are more likely to experiment with new pedagogies and sustain implementation over time. Negative ATT, by contrast, predict minimal adaptation and surface-level compliance.

While teachers may possess a positive ATT and willingness, their lack of capacity to act creates a formidable barrier to the implementation of curriculum reform [19]. Consequently, alongside ATT, an individual's self-assessment regarding the adequacy of their capacity to implement the innovation is of critical importance. This concept of an individual's belief in their capacity to execute behaviors is explicitly defined by Bandura [9] as SE. A systematic review of 29 empirical studies concludes that the SE of pre- and in-service teachers plays a significant role in the successful implementation of curriculum and assessment reforms [8]. For instance, in Myanmar's basic education reform, teachers with strong SE and positive receptivity were more likely to successfully implement the new curriculum and perceive better reform outcomes [28]. Similarly, during curriculum reform in Taiwan, SE was a stronger predictor than emotions regarding teacher collaboration and learner centered teaching, both of which are core reform practices [29].

In conjunction with recognizing the roles of teachers' UND, ATT, and SE in implementing a new curriculum, numerous studies have been conducted to investigate the demographic and contextual influences on these factors. Studies show that teachers' ATT toward educational reform are shaped by a mix of demographic factors such as education level/qualification [30], age and experience [31], and gender [32]. Similarly, these demographic influences all significantly predict SE [33]. While existing literature provides a strong foundation for UND the individual and demographic determinants of reform enactment, the overarching influence of macro-level contexts remains under-theorized. Although some studies have proposed theoretical models indicating that teacher receptivity to change depends on personal cost-benefit analyses, school support, and participation in institutional decisions [11], [12], there is limited literature examining how broader macro-level regional disparities mediate these individual characteristics. Therefore,

to comprehensively understand equitable curriculum delivery, it is crucial to investigate how geographic inequality and specific working contexts intersect with teachers' internal readiness.

While demographic and contextual factors provide external conditions for reform enactment, teachers' internal cognitive processes are best understood through Bandura's social cognitive theory (SCT) [34]. Within this framework, UND (knowledge and cognitive appraisal), ATT (emotional arousal), and SE are deeply interconnected, with SE acting as the central mechanism driving behavioral change. While UND provides the cognitive framework for achieving specific results (outcome expectancy), it is insufficient to initiate action without SE, the decisive filter determining whether an individual will act, how much effort they will exert, and how long they will persevere [35]. Furthermore, SE and ATT share a reciprocal relationship. SE shapes an individual's ATT: confident individuals approach challenges, while those doubting their capabilities exhibit defensive, avoidant behaviors. Conversely, emotional arousal (e.g., anxiety or stress) serves as an informational source; if individuals attribute anxious ATT to personal inadequacy, their SE decreases, risking a cycle of self-doubt. Therefore, authentic performance accomplishments are essential to reinforce UND, bolster SE, and diminish defensive ATT [35]. In the context of curriculum reform, teachers with a deep conceptual mastery of the policy (UND) can mentally simulate successful instructional strategies, thus enhancing their perceived capability. Simultaneously, a positive affective orientation (ATT) reduces implementation anxiety, further bolstering their confidence. Consequently, based on this theoretical interplay, this study hypothesizes that both teachers' UND and their ATT serve as critical positive predictors of their SE in actualizing the new curriculum.

2. METHOD

2.1. Research design and sample

This study employs a quantitative, cross-sectional, descriptive, and correlational survey design to evaluate the UND, ATT, and SE of lower secondary school teachers in Vietnam in the context of the GEC 2018 implementation. The curriculum was adopted in 2018, initially rolled out in the 2020–2021 academic year, and officially implemented nationwide in 2021 at the lower secondary level. To ensure a robust and contextually diverse sample, quantitative data were collected via an online questionnaire in April 2025, utilizing a stratified convenience sampling technique.

The research sample (N=1,444) comprises lower secondary school teachers specializing in mathematics, literature, natural sciences, and history and geography, as shown in Table 1. Regarding demographic characteristics, female teachers represent a significant majority (78.7%), which aligns with the gender distribution within the Vietnamese education sector. Participants span all three macro-level geographical regions: the North (51.9%), the Central (37.0%), and the South (11.1%). Notably, a substantial proportion of teachers work in mountainous and remote areas (n=356, 24.7%). This robust representation is a fundamental strength of the study, as it ensures that the perspectives of teachers in disadvantaged regions are adequately captured, thereby mitigating potential geographic inequality in the empirical evidence. The demographic profile of the full sample is summarized in Table 1.

2.2. Survey instrument

The development and standardization process of the survey instrument adhered to the established scale development procedures in the social sciences [36]. This process encompassed generating an item pool derived from foundational theoretical frameworks, consulting domain experts to ensure content validity, and conducting a pilot study to empirically verify the psychometric properties. Data from the pilot study, comprising 218 teachers, were processed to assess internal consistency reliability (Cronbach's alpha) and construct validity via exploratory factor analysis (EFA), following the multivariate statistical criteria proposed by Hair *et al.* [37]. To evaluate the construct validity, the Kaiser-Meyer-Olkin (KMO) measure was calculated, reaching 0.960, while Bartlett's test of sphericity demonstrated high statistical significance ($p < 0.001$), indicating that the data were highly suitable for factor analysis. The EFA results, utilizing principal component analysis with Varimax rotation, successfully extracted three components that explained 75.816% of the total variance, aligning with the theoretical structure of the measurement scales. The internal consistency of these scales was verified using Cronbach's alpha, yielding high values for all item groups.

The final structure of the instrument comprises a total of 82 items divided into four primary sections. The first section gathers demographic information, as in Table 1. The second section measures the level of UND regarding the GEC 2018, consisting of 29 items that deeply examine teachers' comprehension of the curriculum's format, foundational perspectives, objectives, content, pedagogical methods, and assessment strategies. The third section assesses ATT toward the curriculum, including 19 items that evaluate perceived relevance, willingness to engage in the educational innovation, and perceptions regarding supportive resources. The fourth section measures SE to implement the GEC 2018, encompassing 27 items wherein teachers self-assess their capacity to develop instructional plans, organize teaching activities, and

conduct competency-based assessments. Items across the second, third, and fourth sections were all structured on a 6-point Likert scale ranging from 0 to 5. Sections two and three ranged from 0 “strongly disagree” to 5 “strongly agree”, while section four ranged from 0 “unable to perform” to 5 “very proficient”. Upon administering the official large-scale survey (N=1,444), the psychometric properties of the instrument were re-evaluated. The psychometric results for both the pilot and the official administration are presented in Table 2. All constructs demonstrated excellent internal consistency reliability (Cronbach’s alpha) and robust construct validity, consistently confirming strong adherence to multivariate statistical standards.

2.3. Data analysis

The survey data were cleaned, coded, and analyzed using IBM SPSS Statistics version 26.0. Initially, descriptive statistics, including frequencies, means (M), and standard deviations (SD), were employed to elucidate the current status of teachers’ UND, ATT, and SE to implement (RQ1). Given 6-point Likert scale (0 to 5), a value of 2.5 was established as the theoretical midpoint. A one-sample t-test (test value=2.5) was subsequently applied to determine whether the empirical M scores were statistically significantly higher than this theoretical threshold. To investigate variations in UND, ATT, and SE to implement across different teacher subgroups based on demographic characteristics, specifically regional location and working context (RQ2), the study utilized independent samples t-tests and one-way analysis of variance (ANOVA). Upon detecting statistically significant differences, post-hoc examinations, such as the Tukey honestly significant difference (HSD) test and Games-Howell tests, were administered to conduct detailed pairwise comparisons among the respective groups. Finally, to address RQ3, a multiple linear regression analysis was conducted to examine the predictive power of teachers’ UND and ATT on their SE. Prior to interpreting the regression model, assumptions of multicollinearity were evaluated using the variance inflation factor (VIF), with a conservative threshold of $VIF < 5$ ensuring the model’s robustness. The regression model was theoretically specified to directly test the core propositions of SCT, which identifies cognitive appraisal (UND) and emotional arousal (ATT) as the two proximal psychological determinants of SE. Demographic and contextual variables, while shown to produce statistically significant group-level differences in RQ2, represent distal environmental conditions rather than direct SCT-hypothesized predictors of SE. Their exclusion from the regression model was therefore a deliberate theoretical decision to maintain parsimony and to isolate the SCT-specified pathways.

Table 1. Demographic profile of respondents (N=1444)

Measure	Category	Frequency (n)	Percentage (%)
Gender	Male	308	21.3
	Female	1,136	78.7
Highest qualification	Bachelor’s degree	1,339	92.7
	Master’s degree	105	7.3
Age group	Under 25	14	1.0
	25 to <30	53	3.7
	30 to <35	188	13.0
	35 to 45	625	43.3
	>45	564	39.1
Teaching experience	<5 years	96	6.6
	5 to <10 years	152	10.5
	10 to <15 years	191	13.2
	15 to <25 years	680	47.1
	≥25 years	325	22.5
School location	Urban	523	36.2
	Rural	565	39.1
	Mountainous	356	24.7
Geographic region	North	749	51.9
	Central	534	37.0
	South	161	11.1
Position	Teacher	1,075	74.4
	Head/deputy head of department	302	20.9
	School principal	27	1.9
	Others (union/party leader)	40	2.8

Table 2. EFA of the UND, ATT, and SE scales

Statistical metric	Variable	Items	Pilot value (N=218)	Official large-scale value (N=1444)
Factor loadings range	UND	29	0.654–0.790	0.710–0.790
	ATT	19	0.606–0.792	0.608–0.805
	SE	27	0.633–0.822	0.669–0.780
Total variance explained			75.82%	84.60%
KMO/Bartlett’s test			0.960/p<0.001	0.993/p<0.001

3. RESULTS

3.1. Current status of UND, ATT, and SE to implement (RQ1)

Table 3 indicates that the mean scores for all three variables significantly exceed the theoretical midpoint ($p < 0.001$), exhibiting a negatively skewed distribution that reflects a generally positive evaluative trend across the surveyed sample. More specifically, teachers self-assessed their overall level of UND of the GEC 2018 as high ($M=3.85$, $SD=1.21$), with item means ranging from 3.74 to 3.98. An examination of specific domains reveals that the assessment of educational outcomes (Group UND5) recorded the highest overall mean score ($M=3.92$, $SD=1.18$). Within this domain, the item concerning the UND of periodic assessment techniques (UND54) achieved the highest score in the entire survey ($M=3.98$, $SD=1.17$). Conversely, the domain pertaining to the UND of the curriculum's structural representations (Group UND0) yielded the lowest overall mean among the six domains ($M=3.78$, $SD=1.29$), although it remained at a proficient level. Notably, the item measuring the UND of foundational legal documents (UND01) registered the lowest mean score across all surveyed items ($M=3.74$, $SD=1.31$). This suggests that the foundational, macro-level, and regulatory aspects of the curriculum represent the areas where teachers feel the least confident. Overall, the descriptive statistics portray a positive picture regarding teachers' UND. The teaching staff demonstrates high comprehension and confidence in dimensions directly applicable to the classroom, such as objectives, pedagogical methods, and particularly assessment. Nevertheless, more abstract and foundational aspects, such as the legal bases and overarching curricular perspectives, exhibit comparatively lower levels of UND.

Table 3. Descriptive statistics for UND, ATT, and SE

Construct/domain	No. of items	M	SD
UND (total)	29	3.85	1.21
Highest item: periodic assessment (UND54)		3.98	1.17
Lowest item: legal documents (UND01)		3.74	1.31
ATT (total)	19	3.67	1.28
Highest item: personal commitment (ATT18)		3.83	1.24
Lowest item: facilities feasibility (ATT13)		3.44	1.38
SE (total)	27	3.73	1.12
Highest item: assessment planning (SE25)		3.79	1.10
Lowest item: lesson differentiation (SE05)		3.69	1.15

Regarding ATT, the tabulated results indicate that teachers maintain relatively positive ATT toward the implementation of the GEC 2018. The mean scores across all 19 items exceed the theoretical midpoint, ranging from $M=3.44$ to $M=3.83$. A more granular analysis reveals that items pertaining to teachers' personal ATT and commitment garnered the highest ratings. Specifically, teachers demonstrate strong personal commitment and positivity ($M=3.83$, $SD=1.24$), alongside a pronounced willingness to execute the new curriculum ($M=3.80$, $SD=1.25$). Furthermore, they highly acknowledge the necessity of curricular reform ($M=3.77$, $SD=1.32$) and express strong concurrence with the delineated orientations for pedagogical methods ($M=3.74$, $SD=1.25$) and educational assessment ($M=3.76$, $SD=1.26$).

Conversely, items related to practical conditions and feasibility yielded comparatively lower mean scores, albeit still remaining above the average threshold. Teachers express the most profound concern regarding the feasibility of current physical facilities ($M=3.44$, $SD=1.38$), followed by human resources ($M=3.54$, $SD=1.30$) and supportive instructional resources ($M=3.56$, $SD=1.29$). The significant contrast between high ideological support and low perceived practical feasibility highlights a latent contradiction: teachers possess ample intrinsic motivation yet perceive a severe deficit in instrumental means.

Regarding SE to implement, the analytical results indicate that the surveyed teachers self-assessed their capabilities at a high level. Upon scrutinizing specific competency domains, the findings reveal a consistent degree of SE to implement across various instructional dimensions. Concerning the instructional planning domain, all criteria were evaluated along a spectrum from "relatively proficient" to "proficient" (mean ranging from 3.69 to 3.74), with the criterion for designing differentiated practice activities for diverse learners (SE05: $M=3.69$) recorded the lowest score within this cluster. Within the instructional organization domain, teachers demonstrated robust SE to implement, particularly regarding classroom management and interactive competencies, such as comprehensively monitoring student behavior (SE15: $M=3.75$) and deploying diverse in-class assessment modalities (SE18: $M=3.75$).

Turning to the educational assessment capacity, educators reported the utmost SE in their ability to deliver effective student feedback (SE22: $M=3.75$, $SD=1.08$). Notably, this criterion yielded the lowest SD, signifying a strong consensus regarding proficiency levels for this skill across the surveyed cohort. Finally, the subject-level curriculum planning domain registered the highest mean scores of the entire survey. Specifically, teachers felt most adept at formulating periodic assessment plans (SE25: $M=3.79$), structuring

curriculum distribution frameworks (SE24: $M=3.78$), and evaluating instructional plans for subsequent adjustment (SE26: $M=3.77$). Viewed holistically, teachers self-evaluated their capacities between “relatively proficient” and “proficient” across all operational facets of the GEC 2018 implementation, with no pedagogical domain perceived as a vulnerability.

3.2. Regional and contextual differences (RQ2)

ANOVA results for both working context (urban, rural, mountainous) and geographic region (North, Central, and South) are presented in Table 4, revealing statistically significant group-level disparities. As shown in Table 4, regarding the UND variable, because the assumption of homogeneity of variances was violated (Levene’s test, $p=0.020$), the Games-Howell post-hoc test was employed. The results demonstrate that teachers in mountainous areas ($M=4.00$) exhibited a significantly higher level of UND compared to their urban ($M=3.86$, $p=0.017$) and rural ($M=3.80$, $p=0.001$) counterparts.

A parallel trajectory was observed for ATT ($F(2, 1441)=8.13$, $p<0.001$), with the mountainous cohort displaying the most positive ATT. Interestingly, however, no statistical difference was detected regarding SE to implement ($p=0.641$). This indicates that despite divergences in UND and ATT, educators across all working areas perceive an equivalent degree of SE to implement.

Furthermore, the ANOVA results indicate a pronounced stratification by geographic region (North, Central, and South). Teachers in the Northern region achieved the highest scores, showing statistically significant differences from the other two regions in both UND ($F(2, 1441)=12.13$, $p<0.001$) and ATT ($F(2, 1441)=19.53$, $p<0.001$). Specifically, the mean difference in ATT between the Northern and Central regions was 0.29 ($p<0.001$). Nevertheless, mirroring the findings related to working context, the level of SE to implement remained statistically equivalent across all three macro-regions ($p=0.185$).

Table 4. Comparison of teachers’ perceptions by demographic factors

Factor	Group	N	UND (M±SD)	ATT (M±SD)	SE (M±SD)
Area	Urban	523	3.86±0.79 (a)	3.67±0.83 (a)	3.75±1.03
	Rural	565	3.80±0.84 (a)	3.59±0.89 (a)	3.70±1.07
	Mountainous	356	4.00±0.72 (b)	3.82±0.79 (b)	3.75±0.97
	ANOVA ($F_{(2, 1441)}$)		6.74*	8.13*	0.45 (ns)
Region	North	749	3.97±0.74 (b)	3.80±0.81 (b)	3.77±0.97
	Central	534	3.78±0.86 (a)	3.52±0.87 (a)	3.71±1.07
	South	161	3.71±0.82 (a)	3.57±0.86 (a)	3.61±1.19
	ANOVA (F)		12.13*	19.53*	1.69 (ns)

Note: ns=not significant; * $p<0.05$. Means sharing different superscript letters (a, b) within the same column differ significantly at $p<0.05$, based on Tukey’s HSD or Games-Howell post-hoc tests.

3.3. Predictors of teacher self-efficacy to implement (RQ3)

A multiple linear regression analysis was performed to investigate the extent to which teachers’ UND and ATT predict their SE to implement the GEC 2018. The ANOVA indicated that the overall regression model was highly significant ($F=428.403$, $p<0.001$), confirming that the model effectively fits the empirical data. The adjusted R^2 value was 0.372, demonstrating that UND and ATT jointly explain 37.2% of the variance in teachers’ SE. Regarding the assumption of multicollinearity, the VIF values for both independent variables were 3.144. As this value falls well below the strict diagnostic threshold of 5.0, it is concluded that multicollinearity is not a serious concern in this model. As presented in Table 5, the results of the multiple regression reveal that both independent variables are significant positive predictors of teacher SE ($p<0.001$).

Specifically, based on the standardized beta coefficients (β), teachers’ UND emerged as the strongest predictor of SE ($\beta=0.371$), followed by their ATT ($\beta=0.268$). Based on the unstandardized coefficients, the multiple linear regression equation is established, as in (1). These findings suggest that while cultivating a positive ATT is important, ensuring a deep cognitive UND of the curriculum is the most statistically predicting teachers’ confidence to implement the reform.

$$SE = 0.674 + 0.480 \times UND + 0.326 \times ATT \quad (1)$$

Table 5. Multiple linear regression analysis predictors of teacher SE

Variable	B	Beta (β)	t	p	VIF
(Constant)	0.674	—	6.273	<0.001	—
UND	0.480	0.371	10.018	<0.001	3.144
ATT	0.326	0.268	7.239	<0.001	3.144

Adjusted $R^2=0.372$; $F=428.403$, $p<0.001$. Dependent variable: SE.

4. DISCUSSION

4.1. The stability of teacher readiness for curriculum reform in Vietnam

The research findings offer a multidimensional perspective on Vietnamese teachers' preparation for the GEC 2018. Although the mean scores of all variables significantly exceed the theoretical midpoint ($M > 2.5$, $p < 0.001$), reflecting a positive receptive stance, deeper analyses reveal critical paradoxes that warrant examination. Foremost among these is the stability of teachers' SE to implement, which emerges as a compelling and positive outcome. The fact that the mean scores of all three constructs surpass the neutral threshold indicates that teachers self-evaluate their UND, ATT, and SE to implement the new curriculum at a proficient level. A particularly noteworthy finding is that the level of SE to implement remains statistically equivalent across diverse geographic regions and working contexts. This robust belief system empowers individuals to overcome complex challenges, irrespective of geographic disparities or resource constraints [35]. Teachers who possess a high degree of SE proactively experiment with novel pedagogical methods, flexibly adapt instructional activities, and maintain teaching effectiveness even within highly challenging reform contexts [38]–[40]. Drawing upon these empirical results, policymakers should formulate strategies that reinforce this stable psychological construct, such as promoting pedagogical experimentation. It is imperative to encourage and institutionally safeguard teachers when they proactively trial innovative teaching methodologies and flexibly adjust their instructional practices. However, as subsequent analyses reveal, this intrinsic foundation remains under-leveraged, significantly constrained by systemic boundaries.

4.2. The paradox of “exam-oriented” understanding vs. policy philosophy

A critical paradox revolves around the divergence in teachers' UND, heavily driven by exam pressures and entrenched professional habits. As presented in the results, the findings reveal a notable disparity: teachers demonstrate a markedly higher UND of practical applications, such as assessment techniques and pedagogical methods, compared to their limited comprehension of foundational policy documents. This stratification suggests a pronounced focus on specific instructional practices rather than macro-level philosophies and objectives. Teachers' UND of the new curriculum's goals, content, and philosophy serves as the foundational condition that governs and directs how curriculum change is interpreted and enacted in practice [15]. Educational reform literature consistently posits that for substantive change to occur, teachers must internalize curriculum documents or reform policies, actively interpreting and applying them within their instructional realities [2]. Consequently, a deficit in UND the general orientations within legal documents poses a severe risk of implementation drift, wherein teachers adopt new techniques without aligning them with the core philosophy of the overarching curriculum. When educators lack sufficient UND or encounter difficulties in interpreting the new curriculum's demands, they tend to maintain familiar teaching routines or implement reforms through symbolic compliance, thereby restricting any substantive impact [3], [41].

The prioritization of practical assessment knowledge can be fundamentally attributed to a pervasive exam-oriented culture. In Vietnam, akin to several other East Asian nations, periodic and high-stakes transitional examinations play a decisive role in evaluating student competencies and determining the prestige of both teachers and schools [42], [43]. The survey for the current study was conducted during the fifth academic year of the overall GEC 2018 implementation, a juncture at which critical local and national examinations had already been distinctly institutionalized. The acute institutional focus on examination outcomes has compelled teachers to engage in self-improvement, thereby significantly enhancing their UND and confidence regarding their assessment capacities. The pressure to meet examination demands forces educators to gravitate toward specific instructional and testing methods to optimize scores and guarantee educational outputs. This results in a substantial increase in their UND of this specific domain, often at the expense of engaging with abstract educational philosophies.

While a competency-based curriculum intrinsically emphasizes formative assessment [1], the transition toward competency-based evaluation typically necessitates formative feedback, performance tasks, and criterion-referenced assessment [44]. The observation that Vietnamese teachers predominantly focus on periodic, paper-based assessments, which target specific competencies and fail to capture all behavioral manifestations, indicates that the comprehensive objectives of the curriculum have yet to be fully realized. At the macro-level, this phenomenon reflects a systemic feature commonly observed in highly centralized education systems, where strong top-down governance and accountability structures inherently orient teachers toward standardized outcomes. Research on teachers' conceptions of assessment has consistently shown that accountability purposes, particularly those tied to high-stakes examinations, tend to dominate teachers' assessment beliefs, often at the expense of broader improvement-oriented or philosophical orientations [16], [43].

Regarding the limited UND of regulatory and theoretical frameworks, general education teachers in Vietnam traditionally rely heavily on textbook content and direct administrative directives from immediate management, rather than analyzing national-level strategic documents. Furthermore, professional

development modules for the new curriculum were deployed at a very early stage, often before many teachers had begun directly instructing the new content. The temporal gap between theoretical reception and practical application has caused their UND of legal frameworks and foundational principles to gradually decay or receive diminished psychological priority due to the lack of immediate application.

This study outlines critical implications for refining the educational reform implementation trajectory. Professional development programs must transcend mechanical, technical training by integrating situated learning approaches. To bridge the persistent gap between teachers' practical implementation procedures and their limited grasp of the curriculum's core philosophy, training modules should shift away from passive, theoretical lectures on legal documents. Instead, policymakers and school leaders should employ case-study analyses, which ground abstract macro-level policies into real-world instructional scenarios. Furthermore, schools should institutionalize professional learning communities utilizing the lesson study model. By collaboratively designing, observing, and refining lessons, educators can actively contextualize the overarching philosophy of the GEC 2018 into their daily practices. This approach establishes a sustainable mechanism of practice-feedback-reflection. Furthermore, the regression analysis identifies UND as a stronger predictor of SE than ATT. This finding empirically validates the theoretical premise that while affective states matter, cognitive mastery is the strongest statistical predictor of SE in the present sample. This empirical evidence sends a crucial message to policymakers: while psychological encouragement is beneficial, the findings suggest that equipping teachers with a deep conceptual comprehension of the curriculum may be the most impactful lever for supporting SE, though longitudinal and experimental evidence is needed to confirm this directional relationship.

4.3. Ideological consensus vs. systemic resource barriers

Another significant finding emerges between teachers' positive ATT and the inadequate infrastructure available for implementation. One of the most salient findings is the stark contrast between teachers' highly supportive ATT toward the reform's core philosophy and their low confidence in the physical facilities required for execution. This result indicates that Vietnamese teachers exhibit a strong ideological consensus regarding the educational innovation. This represents a highly positive, foundational advantage for the reform trajectory, as teacher resistance to change typically constitutes a formidable barrier. However, while educators possess positive ATT and psychological readiness, they harbor deep anxieties regarding the material infrastructure necessary to meet the new curriculum's demands. This reflects a substantial systemic barrier within the pedagogical environment, precipitating a pronounced implementation gap. Fundamentally, psychological readiness is only sustainable when educators believe the change is practically feasible within their specific instructional contexts. Furthermore, the high variance in these responses underscores significant educational inequality between institutions. Drawing upon these empirical insights, the study yields an urgent need for an investment trajectory commensurate with ideological expectations. The government must prioritize allocating resources for physical facilities and instructional equipment in synchrony with the pace of professional development training. Cultivating positive ATT and robust SE to implement remains sustainable only when teachers are convinced that the reform is viable within their actual instructional realities. Concurrently, policy interventions must strategically target under-resourced schools to safeguard teachers' intrinsic motivation and proactively prevent teacher burnout stemming from a deficit in instrumental means.

4.4. The center-periphery inversion and contextual drivers

A counterintuitive finding is the center-periphery inversion. This presents a notable finding that challenges conventional assumptions regarding educational inequality. Fullan [2] theoretical framework posits that educational change is substantially shaped by contextual interactions. The phenomenon where teachers in mountainous regions exhibit higher scores reflects the efficacy of sustained professional development initiatives targeted at disadvantaged areas. This inversion can be attributed to several contextual factors. Urban teachers are frequently distracted by the pressures of large class sizes, shadow education (private tutoring), and a multitude of competing extracurricular activities. Conversely, educators in remote areas often perceive new curriculum training sessions as rare and invaluable opportunities for professional growth, as they possess fewer alternative resources. Consequently, they demonstrate superior UND and more positive ATT. These results imply that recent support policies for disadvantaged regions have been highly effective in elevating teachers' UND and ATT. It is crucial to distill these empirical lessons to inform strategies for urban areas, where teachers' attention is fragmented by systemic pressures. Simultaneously, mechanisms must be established to incentivize urban educators to treat curriculum training as profound professional development opportunities rather than mere administrative obligations.

Finally, the methodological contribution of this study, achieved through geographic stratification and the systematic inclusion of mountainous-area teachers, addresses a critical gap. Securing a substantial

mountainous subsample (24.7%) represents a deliberate methodological effort to amplify the voices of marginalized regions. This underscores the paramount importance of capturing feedback across all teacher demographics to formulate equitable, empirically grounded educational policies that foster comprehensive UND, constructive ATT, and robust SE to implement nationwide. This contributes a potential empirical framework for global education, particularly in developing and centralized contexts, highlighting that sustainable reform relies on resolving the systemic tensions between high-stakes accountability, resource equity, and teacher agency.

4.5. Limitations and future research directions

While this study provides valuable multidimensional insights into teacher readiness for the GEC 2018, several limitations must be acknowledged. First, the research employs a cross-sectional survey design conducted in April 2025, which captures only a specific snapshot in time. Consequently, although the multiple regression analysis successfully identifies significant predictors, it cannot establish causal relationships. Second, the findings are derived entirely from self-reported data. This methodological reliance makes the results susceptible to social desirability bias, wherein teachers might overestimate their SE or conceptual grasp to align with perceived policy expectations. Third, as all constructs were collected simultaneously from the same respondents using a single questionnaire, common method variance may have inflated the observed relationships among variables. To address these constraints, future research should employ longitudinal designs to monitor how teacher readiness and emotional states evolve throughout the entire curriculum implementation cycle or integrate qualitative approaches, such as in-depth classroom observations and ethnographic studies to triangulate self-reported survey data with the actual enacted curriculum in real-world instructional settings. Furthermore, the regression model was theoretically constrained to the two SCT-specified proximal predictors. The potential moderating or mediating roles of demographic and geographic variables on the UND–SE and ATT–SE pathways remain to be examined in future hierarchical regression or path-analytic models.

5. CONCLUSION

This study provides a comprehensive and systematic overview of Vietnamese lower secondary school teachers' readiness for the GEC 2018 across three dimensions: UND, ATT, and SE to implement. Drawn from the empirical analysis of 1,444 educators, several primary conclusions emerge. Vietnamese teachers exhibit robust overall levels of SE to implement and UND, affirming a highly positive receptive stance toward the educational innovation. Crucially, the study establishes that while maintaining a positive ATT is important, a deep cognitive UND of the curriculum serves as the strongest predictor of teachers' SE in implementing the reform, as indicated by the regression analysis. Nevertheless, a notable cognitive divergence persists: while educators demonstrate high confidence in practical competencies such as periodic assessment, they exhibit a constrained UND of regulatory mandates and foundational philosophies.

Furthermore, the research identifies a critical implementation gap. Although teachers hold highly positive ATT toward the curriculum's new philosophy, they harbor significant doubts regarding local physical facilities and supportive resources. This dichotomy suggests that the most significant barrier currently impeding the reform is a deficit in technical and material infrastructure. Another notable finding is that teachers situated in mountainous and Northern regions display superior UND and more positive ATT compared to their urban and Southern counterparts, challenging conventional geographic assumptions. In summary, the preparatory phase for the GEC 2018 in Vietnam has yielded substantial achievements in cultivating teachers' UND and SE to implement, particularly within disadvantaged regions. However, to successfully translate this psychological readiness into tangible instructional efficacy, educational policies must prioritize closing the resource gap, and restructuring professional development initiatives. These programs should synergize strong philosophical engagement with highly contextualized practical applications. Ultimately, this study contributes a vital empirical framework for educational administrators to monitor, evaluate, and calibrate the trajectory of educational reforms in developing nations.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : Conceptualization

M : Methodology

So : Software

Va : Validation

Fo : Formal analysis

I : Investigation

R : Resources

D : Data Curation

O : Writing - Original Draft

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CONFLICT OF INTEREST STATEMENT

The authors declare that they have no potential conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

This study was conducted in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments.

DATA AVAILABILITY

The data that support the findings are available on request from the corresponding author, [PTB], upon reasonable request.

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