

Primary Teachers' Readiness for Online Professional Development in Local Culture

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Abstract: This study investigates primary school teachers' readiness for online professional development (PD) in local culture-integrated instruction and examines the predictive roles of instructional competence and perceived implementation barriers. Using a quantitative survey design, data were collected from 235 primary school teachers across urban, rural, and mountainous areas of Vietnam. Descriptive statistics, Pearson correlation, and multiple regression analyses were employed to examine the relationships among the variables. The findings indicate that teachers reported high levels of instructional competence and readiness for online professional development, while perceived barriers were moderate. Correlation analysis revealed a significant positive relationship between instructional competence and readiness. Regression results further showed that instructional competence was a strong and significant predictor of readiness, whereas perceived barriers had no significant independent effect. These findings indicate that teachers' confidence in implementing local culture-integrated instruction plays a more important role in shaping readiness for professional learning than contextual constraints. The study concludes that competence-oriented and culture-responsive professional development approaches are essential for strengthening culturally grounded teaching practices. Practically, the findings support online professional development as an effective and scalable strategy for enhancing teachers' capacity to implement local culture-integrated instruction, particularly in diverse and resource-constrained educational settings.

Keywords: *Teacher readiness, Online professional development, Culturally responsive teaching, Local culture, Primary education, Educational values.*

1. Introduction

In recent years, integrating local cultural content into school curricula has become a prominent direction in educational reform, particularly in multicultural and minority contexts. Culturally responsive teaching emphasizes that instructional practices grounded in learners' cultural contexts can enhance engagement, identity development, and learning outcomes [1]. Recent empirical evidence further indicates that cultural and contextual factors play a significant role in the development of primary school students' social skills in intercultural educational settings [2]. These findings reinforce the importance of culturally responsive educational practices and highlight the need for teachers to develop the competencies required to effectively integrate local cultural content into classroom instruction.

At the primary level, where foundational cognitive, social, and cultural dispositions are developed, the integration of local culture is particularly important. A growing body of research across Asian and Latin American contexts demonstrates that culturally grounded pedagogical models and locally based learning materials can substantially improve students' reading competence, writing skills [3], scientific

attitudes and process skills [4], and scientific literacy [5]. Studies focusing on the development of culturally integrated learning resources, such as storybooks, illustrated dictionaries, and digital learning materials, consistently highlight that learning becomes more meaningful when school knowledge is situated within familiar cultural contexts [6-8]. Recent studies have also highlighted the growing role of digital cultural resources and culturally responsive learning materials in supporting students' engagement, cultural identity, and contextualized learning experiences [6, 7, 9].

Advances in educational technology have further expanded opportunities for implementing local culture-integrated instruction. Research on virtual reality (VR), augmented reality (AR), and digital learning models suggests that these technologies can enhance cultural understanding, social awareness, and learning engagement among both primary students and pre-service teachers [10, 11]. In particular, recent studies demonstrate that augmented reality-based learning environments can facilitate students' appreciation of local culture while increasing motivation and active participation in learning activities [10, 11]. Moreover, instructional models that integrate culturally responsive teaching, local wisdom, and innovative approaches such as gamification have been shown to effectively promote students' multicultural competence in primary education [12].

Despite these advances, the successful implementation of local culture-integrated instruction ultimately depends on teachers' knowledge, skills, and motivation. Min et al. [13] demonstrate that local culture and teacher efficacy significantly influence teachers' enactment of curriculum reform [13]. In rural, mountainous, and indigenous contexts, teachers often face multiple barriers, including limited access to culturally relevant materials, insufficient technological competence, heavy workloads, and inadequate institutional support [14, 15]. These constraints not only affect classroom practices but may also shape teachers' motivation and readiness to engage in professional learning.

In the context of digital transformation and in the aftermath of the COVID-19 pandemic, online professional development has emerged as a key strategy for supporting teachers' continuous learning in flexible and scalable ways. However, existing research has largely focused on evaluating the effectiveness of culturally integrated instructional models or learning materials. Recent systematic reviews in science education have also highlighted the continuing challenges teachers face in implementing innovative and culturally responsive pedagogies, particularly in relation to professional preparation and ongoing support [10, 16]. Nevertheless, relatively little attention has been paid to teachers' readiness to participate in online professional development specifically targeting local culture-integrated instruction.

Addressing this gap, the present study investigates Vietnamese primary school teachers' readiness for online professional development in local culture-integrated instruction and examines the predictive roles of two key factors: (1) teachers' self-perceived competence in integrating local culture into their teaching and (2) the barriers they perceive in implementing such practices. The findings are expected to provide empirical evidence to inform the design of context-sensitive online professional development programs and to support the effective implementation of culturally responsive education in diverse educational settings.

2. Literature Review and Hypothesis Development

2.1. Local Culture-Integrated Instruction and Teacher Competence

Local culture-integrated instruction refers to pedagogical practices that deliberately incorporate local cultural knowledge such as regional history, traditions, language, folklore, arts, and indigenous practices into formal curriculum content and classroom instruction. This approach is grounded in culturally responsive teaching theory, which posits that learning becomes more meaningful and effective when instructional content resonates with learners' cultural backgrounds and lived experiences [1]. In primary education, where students' cognitive, social, and cultural identities are actively shaped, integrating local culture has been shown to enhance engagement, comprehension, and a sense of belonging.

A substantial body of empirical research demonstrates the educational value of local culture-integrated instruction. Studies have reported positive effects on students' reading competence through culture-based storybooks [3], explanatory writing skills through locally grounded learning models [17], scientific attitudes and process skills via project-based assessments rooted in local culture [4], and scientific literacy through culturally integrated textbooks [5]. Beyond cognitive outcomes, integrating local culture has also been linked to the development of social skills, cultural literacy, and identity formation among primary school students [2, 7].

While these studies highlight instructional effectiveness, they also implicitly emphasize the central role of teachers. Implementing local culture-integrated instruction requires teachers to possess a multifaceted set of competencies. Prior research and curriculum-oriented studies suggest that teacher competence in this domain includes: (1) curriculum and cultural content knowledge, enabling teachers to align local cultural elements with national learning objectives; (2) instructional design skills, allowing teachers to construct lesson plans that meaningfully integrate academic content with cultural contexts [18]; (3) pedagogical flexibility in implementing student-centered and experiential methods such as storytelling, projects, field trips, and community engagement [4, 15, 19]; (4) the ability to locate, adapt, or develop relevant teaching resources, including digital and multimedia materials [6, 10]; and (5) assessment and reflective skills that capture both subject mastery and cultural understanding [5].

From a social cognitive perspective, teachers' self-perceived competence, or self-efficacy, in these areas is likely to shape their professional learning behavior. According to social cognitive theory, mastery experiences strengthen self-efficacy, which in turn enhances motivation to engage in further learning and professional growth [20]. Empirical research on curriculum reform supports this view, showing that teachers with higher efficacy are more proactive in enacting new instructional approaches and engaging with reform-related professional development [13]. Although it could be argued that highly competent teachers may perceive less need for training, evidence from curriculum innovation contexts suggests that competent teachers often seek advanced professional development to refine practices and remain aligned with evolving policy demands.

Therefore, in the context of increasing emphasis on local culture-integrated instruction and the expansion of online professional development, this study proposes:

Hypothesis 1: Teacher competence in local culture-integrated instruction is positively associated with readiness to participate in online professional development.

2.2. Perceived Barriers to Local Culture-Integrated Teaching

Despite policy support and demonstrated pedagogical benefits, teachers frequently encounter substantial barriers when attempting to integrate local culture into classroom instruction. Research across diverse educational contexts identifies several recurring challenges. First, curriculum-related barriers arise when teachers struggle to identify appropriate local cultural content that aligns with prescribed curriculum standards, leading to uncertainty about relevance and instructional coherence [9, 18]. Second, resource constraints, including the lack of culturally relevant textbooks, teaching guides, and digital materials, are widely reported, particularly in rural and under-resourced schools [6, 7].

Third, insufficient professional training and institutional support pose significant obstacles. Studies indicate that many teachers have not received systematic preparation in designing or implementing local culture-integrated lessons and often lack access to expert guidance or professional learning communities [14, 15]. Fourth, time pressure and workload intensification further constrain teachers' capacity to plan culturally integrated activities, which often require additional coordination, preparation, and community engagement [4].

These perceived barriers have important implications for teachers' engagement in professional development. On one hand, barriers such as limited time, resources, or institutional support may discourage participation in additional training, particularly if teachers believe that systemic constraints will prevent them from applying what they learn. This deterrent effect has been observed in studies examining voluntary professional development participation. On the other hand, some research

suggests that when professional development is closely aligned with teachers' perceived needs, such as addressing specific instructional challenges, teachers who experience more difficulties may be more motivated to participate in order to seek solutions.

Given the mixed evidence, this study adopts a conservative hypothesis consistent with barrier and workload theories, proposing that greater perceived barriers may reduce teachers' readiness to engage in additional online training:

Hypothesis 2: Perceived barriers to implementing local culture-integrated instruction are negatively associated with readiness for online professional development.

2.3. Online Professional Development and Teacher Readiness

Teacher readiness for online professional development refers to the extent to which teachers are willing, prepared, and confident to engage in learning activities delivered through digital platforms. Readiness encompasses motivational aspects (interest and perceived value), technological confidence, and beliefs about the effectiveness of online learning. Prior studies on online learning adoption indicate that teachers' readiness is influenced by digital competence, prior online learning experience, and institutional encouragement.

In Vietnam and similar contexts, the COVID-19 pandemic accelerated teachers' exposure to online teaching and learning environments, potentially increasing openness toward online professional development. For local culture-integrated instruction, online professional development offers specific advantages, including access to shared digital repositories of cultural resources, expert-led webinars, and peer exchange across regions [21]. Teachers' readiness for such programs is therefore likely shaped by both their perceived competence and their awareness of instructional challenges.

Synthesizing the literature, teacher competence and perceived barriers emerge as two critical, yet underexamined, predictors of readiness for online professional development in the domain of local culture-integrated instruction. Building on this theoretical and empirical foundation, the present study empirically tests the two hypotheses outlined above.

3. Methods

3.1. Participants

The participants were 235 primary school teachers teaching Grades 1–5 in a northern mountainous province of Vietnam. A purposive sampling strategy was employed to ensure representation of teachers from diverse school contexts, including urban, rural, and remote mountainous areas with ethnic minority populations. This contextual diversity is particularly relevant, as opportunities for integrating local culture and access to professional development may vary substantially across settings.

As presented in Table 1, the majority of participants taught in rural or mountainous schools (72.8%), while 27.2% were from town or city schools. The sample was predominantly female (83.0%), reflecting the gender distribution typical of Vietnam's primary education workforce. Regarding age, 44.3% of teachers were over 40 years old, 37.9% were between 30 and 40, and 17.9% were under 30. In terms of educational qualifications, most participants held at least a bachelor's degree or college-equivalent qualification (96.2%), with a small proportion having completed postgraduate studies (3.8%). Teaching experience varied widely: 44.3% had less than five years of experience, 9.4% had between five and ten years, and 46.4% had more than ten years of teaching experience.

Participants were also asked about their preferred mode of professional development delivery. While 25.1% preferred traditional face-to-face workshops and 29.8% favored fully online training, a substantial proportion indicated flexibility: 14.0% preferred blended formats and 31.1% reported no specific preference. This distribution suggests a generally open attitude toward online professional development among a considerable segment of the sample.

Table 1.
Demographic characteristics of the teacher sample (N = 235).

Characteristic	Category	n (%)
School location	Town/City schools	64 (27.2)
	Rural/Mountainous schools	171 (72.8)
Age	Under 30 years	42 (17.9)
	30–40 years	89 (37.9)
	Over 40 years	104 (44.3)
Gender	Female	195 (83.0)
	Male	40 (17.0)
Education level	Bachelor's degree or equivalent	226 (96.2)
	Postgraduate (Master's/PhD)	9 (3.8)
Teaching experience	< 5 years	104 (44.3)
	5–10 years	22 (9.4)
	> 10 years	109 (46.4)
Preferred PD format	In-person (face-to-face)	59 (25.1)
	Online (fully online)	70 (29.8)
	Blended (mix of online & in-person)	33 (14.0)
	No preference (any format)	73 (31.1)

3.2. Procedure

Data were collected in June 2025 using an online questionnaire. The survey link was distributed through the provincial Department of Education and Training to school principals, who then shared it with teachers at their schools. Participation was voluntary and anonymous. Before completing the questionnaire, participants provided informed consent electronically. Completion of the survey required approximately 15–20 minutes. Teachers were assured that their responses would be used solely for research purposes and would not be linked to performance evaluation or administrative decision-making.

3.3. Measures

All survey items were administered in Vietnamese using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The instrument consisted of three main constructs:

3.3.1. Teacher Competence in Local Culture-Integrated Instruction

This construct was measured using 15 items assessing teachers' self-perceived ability to design, implement, and evaluate instruction that integrates local cultural content. Items covered curriculum planning, instructional methods, use of community and digital resources, assessment, and reflective practice. The scale demonstrated excellent internal consistency (Cronbach's $\alpha = .93$). A composite mean score was used in subsequent analyses.

3.3.2. Perceived Barriers to Local Culture-Integrated Instruction

Seven items assessed teachers' perceptions of obstacles related to curriculum alignment, time constraints, lack of resources, insufficient training, technological limitations, and institutional support. Higher scores indicated stronger perceived barriers. The scale demonstrated good internal consistency (Cronbach's $\alpha = .88$).

3.3.3. Readiness for online professional development

Teachers' readiness was measured using a single direct item assessing their willingness to participate in an online professional development course focused on local culture-integrated teaching. Although single-item measures do not permit internal reliability estimation, they are commonly used

for clear and unidimensional constructs such as intention or readiness. The item showed substantial variability and a high mean value, indicating overall positive readiness. Demographic variables were collected for descriptive and exploratory subgroup analyses.

3.4. Data Analysis

Data were analyzed in SPSS 26.0. After screening for missing data and outliers, composite scores were computed by averaging items for competence and barriers. Descriptive statistics and internal consistency (Cronbach's alpha) were reported. Pearson correlations were used to examine bivariate associations among competence, barriers, and readiness. Hypotheses were tested using multiple linear regression with readiness (Q31) as the dependent variable and competence and barriers as simultaneous predictors. Standard regression assumptions were examined. Exploratory subgroup comparisons (t-tests/ANOVA) were conducted to assess differences in readiness across key demographic groups. Statistical significance was set at $\alpha = .05$ (two-tailed).

4. Results

4.1. Descriptive Statistics and Correlations

Table 2 presents the descriptive statistics and Pearson correlation coefficients for the main study variables: teacher competence in local culture-integrated instruction, perceived barriers, and readiness for online professional development.

Table 2.

Means, standard deviations, and correlations among main variables (N = 235).

Variable	Mean	SD	Competence	Barriers	Readiness
Competence (local culture integration)	4.05	0.49	—	0.09	0.50***
Perceived barriers	3.52	0.77	0.09	—	0.13*
Readiness for online PD	4.11	0.65	0.50***	0.13*	—

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ (two-tailed). Correlations of 0.13 or greater in magnitude are statistically significant at $p < 0.05$.

As shown in Table 2, teachers reported relatively high levels of self-perceived competence in local culture-integrated instruction ($M = 4.05$, $SD = 0.49$) and readiness for online professional development ($M = 4.11$, $SD = 0.65$). Perceived barriers were reported at a moderate level ($M = 3.52$, $SD = 0.77$), suggesting that teachers encountered certain challenges in implementing local culture-integrated instruction.

Correlation analysis revealed a significant positive relationship between teacher competence and readiness for online professional development ($r = 0.50$, $p < 0.001$). This finding indicates that teachers who perceived themselves as more competent in integrating local culture into teaching were also more willing to participate in online professional learning opportunities.

A weak yet statistically significant positive correlation was observed between perceived barriers and readiness ($r = 0.13$, $p < 0.05$). Although the association was small, it suggests that teachers who reported more implementation challenges were not necessarily less willing to engage in professional development. In contrast, the relationship between competence and perceived barriers was not statistically significant ($r = 0.09$, $p > 0.05$), indicating that these two variables were largely independent in the present sample.

To further contextualize teachers' readiness for online professional development, responses to the training-needs items (C28–C30) were examined descriptively. Teachers expressed strong demand for training on designing local culture-integrated lesson plans ($M = 4.3$), instructional strategies for cultural integration ($M = 4.3$), and the use of digital resources to support local culture education ($M = 4.4$). These findings further support the high level of readiness observed among participants and highlight the perceived need for continued professional learning in this area.

4.2. Regression Analysis Testing Hypotheses

A multiple linear regression analysis was conducted to examine the extent to which teacher competence in local culture-integrated instruction and perceived barriers predicted teachers' readiness for online professional development. The results of the regression analysis are presented in Table 3.

Table 3.

Multiple Regression Analysis Predicting Readiness for Online Professional Development.

Predictor	B	SE(B)	β	t	p
(Constant)	1.205	0.34	—	3.55	< 0.001***
Self-perceived competence (score)	0.65	0.076	0.49	8.58	< 0.001***
Perceived barriers (score)	0.077	0.048	0.09	1.6	0.111

Note: Dependent variable: Readiness for online professional development. $R^2 = 0.254$, Adjusted $R^2 = 0.248$. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The overall regression model was statistically significant, $F(2, 232) = 39.56$, $p < 0.001$, explaining 25.4% of the variance in teachers' readiness for online professional development ($R^2 = .254$; Adjusted $R^2 = .248$).

As shown in Table 3, teachers' self-perceived competence was a significant positive predictor of readiness ($B = 0.650$, $SE = 0.076$, $\beta = 0.49$, $p < 0.001$). This result indicates that higher levels of self-perceived competence in local culture-integrated instruction were associated with greater readiness to participate in online professional development. Therefore, hypothesis 1 was supported.

In contrast, perceived barriers did not significantly predict readiness when teacher competence was included in the model ($B = 0.077$, $SE = 0.048$, $\beta = 0.09$, $p = 0.111$). Although the regression coefficient was positive, the effect was not statistically significant. Therefore, hypothesis 2 was not supported.

Overall, the results indicate that self-perceived competence was the strongest predictor of readiness for online professional development, whereas perceived barriers contributed little additional explanatory power beyond competence.

4.3. Additional Observations

Additional exploratory analyses were conducted to examine whether readiness for online professional development varied across demographic groups. The results indicated no statistically significant differences in readiness by school location, gender, age, or teaching experience (all $p > 0.05$).

Specifically, teachers working in rural or mountainous schools reported readiness levels comparable to those of teachers in urban schools ($M = 4.13$ vs. $M = 4.05$), and the difference was not statistically significant, $t(233) = 0.81$, $p = 0.42$. Similarly, no significant differences were observed between female and male teachers ($p > 0.05$). In addition, neither age nor teaching experience was significantly associated with readiness for online professional development (all $p > 0.10$).

The relationship between teachers' self-perceived competence and perceived barriers was also examined. As reported in Table 2, the correlation between the two variables was positive but not statistically significant ($r = 0.09$, $p > 0.05$), indicating that self-perceived competence and perceived barriers were largely independent in the present sample.

Finally, readiness was compared across teachers' preferred professional development formats. Teachers who preferred fully online professional development reported the highest readiness scores ($M \approx 4.3$), whereas those who preferred face-to-face formats reported slightly lower readiness scores ($M \approx 3.9$). Nevertheless, readiness scores across all preference groups remained above the midpoint of the scale, indicating generally positive attitudes toward participation in online professional development.

Overall, the findings suggest that teachers' readiness for online professional development was consistently high across different demographic and professional backgrounds.

5. Discussion

5.1. Overview of Key Findings

This study examined predictors of Vietnamese primary teachers' readiness to engage in online professional development (PD) on local culture-integrated instruction. The results indicate that teachers' self-perceived competence in local culture-integrated instruction is a strong and significant predictor of readiness, whereas perceived barriers do not reduce readiness once competence is controlled for.

These findings extend the literature on local culture-integrated instruction at the primary level, which has largely focused on student learning outcomes [4, 8], by shifting attention to teachers' professional learning motivation.

5.2. The Central Role of Teacher Competence

The findings strongly support hypothesis 1, indicating that teachers who perceived themselves as more competent in designing, implementing, and assessing local culture-integrated instruction reported higher readiness for online PD.

This finding is consistent with previous research emphasizing that culturally integrated instruction requires a complex set of competencies, cultural knowledge, lesson design, pedagogical strategies, and resource use [18, 22]. Teachers with stronger foundational competence may be more aware of the instructional challenges involved and may therefore be more inclined to seek professional development opportunities.

This interpretation is also consistent with research on culturally integrated learning materials and models, where teacher competence is identified as a critical factor in translating curricular innovations into effective classroom practice [3, 4, 7].

5.3. Perceived Barriers and Motivation for Professional Development

Contrary to hypothesis 2, perceived barriers did not have a significant negative effect on readiness once teacher competence was included in the model. This suggests that barriers in this context do not function as deterrents to PD participation, but rather reflect teachers' awareness of practical challenges.

This finding is consistent with studies on culturally integrated and technology-supported instruction, which report that teachers often clearly recognize constraints related to resources, time, and infrastructure, yet still express strong demand for relevant professional support [10, 16]. This is particularly likely when PD is explicitly designed to address the difficulties teachers encounter.

Nevertheless, the absence of a negative effect on readiness does not imply that barriers are unimportant. Prior research on instructional innovation suggests that barriers may exert a stronger influence on post-PD implementation rather than on the initial decision to participate.

5.4. High Readiness for Online Professional Development

The high and relatively uniform readiness across teacher subgroups suggests that online PD is increasingly perceived as a feasible and appropriate modality, even among teachers in rural and mountainous areas. This finding aligns with research on teacher PD in underserved contexts, where online formats are viewed as expanding access to professional learning opportunities [14].

For local culture-integrated instruction, which requires contextual sensitivity and flexibility, online professional development may also facilitate the sharing of practices and resources across different localities, thereby enriching teachers' pedagogical repertoires.

5.5. Theoretical and Practical Implications

Theoretically, the study reinforces the importance of teacher competence as a key driver of professional learning motivation, while suggesting that barriers do not necessarily diminish PD readiness. This adds nuance to existing models of teacher professional development.

Practically, the findings highlight the need for PD programs that build on teachers' existing competencies and directly address the challenges they face in implementing local culture-integrated instruction.

5.6. Limitations and Future Research

Several limitations should be acknowledged. First, the study relied on self-reported data, which may be subject to social desirability and response biases. Second, readiness for online professional development was measured using a single-item indicator, which limits the assessment of measurement reliability. Third, the cross-sectional design does not allow causal inferences regarding the relationships among competence, perceived barriers, and readiness. Future studies could employ longitudinal designs and more comprehensive measures of readiness to provide a deeper understanding of teachers' professional learning engagement.

6. Conclusion

This study examined Vietnamese primary school teachers' readiness to participate in online professional development (PD) focused on local culture-integrated instruction, with particular attention to the roles of teacher competence and perceived implementation barriers. Using survey data from 235 teachers, the findings provide empirical evidence on the factors shaping teachers' willingness to engage in targeted online PD within a context of ongoing curriculum reform.

The results indicate that teachers' self-perceived competence in local culture-integrated instruction is a strong and significant predictor of readiness for online PD. Teachers who reported higher levels of competence across lesson planning, instructional implementation, resource use, and assessment were substantially more willing to participate in online training. In contrast, perceived barriers, such as limited resources, insufficient time, or lack of prior training, did not significantly reduce teachers' readiness once competence was taken into account. These findings suggest that readiness for professional learning may be influenced more by teachers' confidence in their instructional capacity than by the presence of contextual constraints.

Overall, the study reveals a consistently high level of readiness for online professional development among participating teachers. Vietnamese primary teachers demonstrate a high level of openness to online professional development on local culture integration, regardless of differences in school location, age, or teaching experience. From a theoretical perspective, the findings reinforce the importance of teacher competence as a central motivational factor for professional learning engagement. From a practical standpoint, they suggest that online PD initiatives focusing on local culture-integrated instruction are likely to attract broad participation, particularly when they build on teachers' existing competencies and directly address classroom-relevant needs.

Future research could extend this work by tracking teachers' actual participation and learning outcomes in online PD programs, examining changes in competence and perceived barriers over time, and exploring how different types of barriers (e.g., internal versus external) interact with professional learning engagement. Such efforts would further inform the design of effective, scalable professional development models that support culturally responsive teaching in diverse educational contexts.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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