



Harmonizing Minds and Words: Multiple Intelligences and Vocabulary Learning Styles in an Upland Secondary School Toward CIFUL Framework

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ABSTRACT: This study explored the interplay between Multiple Intelligences (MI) and English Vocabulary Learning Styles (VLS) among junior high school learners at PAIMA National High School, a rural upland high school in the Province of Nueva Vizcaya, Philippines. Utilizing a descriptive-correlational research design and total enumeration, data were gathered from 74 respondents (Grade 7 = 42; Grade 8 = 32) using validated MI and VLS questionnaires. Findings revealed that Interpersonal ($\bar{x} = 2.79$) and Naturalist ($\bar{x} = 2.74$) intelligences were the most dominant, while Kinesthetic (46%) and Visual (26%) strategies were the most preferred modalities for vocabulary acquisition. Correlation analysis demonstrated a significant relationship between social-environmental intelligence domains and active-sensory learning styles. These results served as the foundation for the Contextualized Instructional Framework for Upland Learners (CIFUL), which advocates for place-based, socially-mediated, and multi-modal pedagogical strategies to bridge the verbal-linguistic gap in rural secondary education.

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1. INTRODUCTION

The pedagogical landscape of English language teaching is increasingly defined by a shift from one-size-fits-all instruction toward personalized learning frameworks. At the heart of this shift are two critical constructs: Multiple Intelligences (MI) and Vocabulary Learning Styles (VLS). Multiple Intelligences theory, pioneered by Gardner (1983), suggests that learners possess a unique spectrum of cognitive strengths—ranging from linguistic and logical abilities to naturalist and interpersonal skills—rather than a single, fixed intelligence. Simultaneously, Vocabulary Learning Styles represent the internal preferences and sensory “anchors” (visual, auditory, kinesthetic, or tactile) that students utilize to acquire and retain the building blocks of language.

Gardner’s (1983) Multiple Intelligences Theory revolutionized educational psychology by positing that “intelligence” is not a single entity but a spectrum of eight distinct modalities. Studies in rural contexts often highlight that students in these areas develop strong Naturalist and Bodily-Kinesthetic intelligences due to their frequent interaction with the environment and manual labor.

Oxford (1990) and Brown (2000) emphasize that vocabulary acquisition is the cornerstone of language learning, serving as the critical infrastructure upon which all other linguistic skills are built. Vocabulary Learning Styles (VLS) refer to the internal sensory preferences—Visual, Auditory, Kinesthetic, or Tactile—that learners utilize to encode, store, and retrieve new words.

In the Philippine context, research consistently indicates that secondary learners thrive when instruction moves beyond traditional rote memorization. According to Alieto (2021), Filipino learners often exhibit a strong preference for visual and kinesthetic modalities, which are deeply rooted in the highly social and expressive nature of Philippine classroom culture. Furthermore, Paredes and Alieto (2022) found that in public school settings, the integration of physical movement and graphic organizers significantly outperforms translation-based methods in terms of long-term lexical retention. These findings are echoed by Dequifna and Ortiz (2024), who noted that for Filipino junior high school students, the use of localized visual aids and “embodied”

learning activities helps bridge the gap between their native dialects and English proficiency, making the language more accessible and less intimidating.

The “alignment hypothesis” suggests that a student’s dominant intelligence serves as a gateway to their learning style, acting as a cognitive preference that dictates how information is most efficiently processed. For example, a student with high Interpersonal intelligence will likely prefer learning vocabulary through social interactions, peer-to-peer discussions, or group games, which often manifest as a Kinesthetic or Social VLS (Armstrong, 2009; Mustafa, 2023). Conversely, a student with Visual-Spatial strength will rely heavily on mental images, color-coded notes, and graphic organizers to anchor new lexical items in their long-term memory (Arispe & Blackburn, 2021; Gardner, 1983). This theoretical alignment implies that when instructional strategies match the learner’s dominant intelligence, the “memory trace” of new vocabulary is significantly strengthened (Teng, 2020).

For junior high school learners, particularly those at PAIMA National High School in the rural upland community of Purok 6, Paitan, Bayombong, these two variables are not just theoretical concepts but practical determinants of academic success. These Grade 7 and 8 students come from diverse socio-economic and linguistic backgrounds, which significantly influence their proficiency levels and engagement with the English language. In an environment where access to traditional educational resources may be limited by geographic challenges, understanding the innate cognitive profiles and learning preferences of the 74 junior high school respondents is essential for developing effective instructional strategies.

This study explores how the diverse intelligences of these learners—such as their strong interpersonal and naturalist traits—intersect with their preferred methods of learning new words, such as through visual aids or kinesthetic actions. By identifying these patterns, the research aims to establish a data-driven basis for differentiated instruction tailored to the authentic classroom conditions of a mountain-based public secondary school.

Accordingly, this study addresses the following research questions:

1. What are the dominant Multiple Intelligences among the Grade 7 and Grade 8 learners of PAIMA National High School?
2. What are the preferred English vocabulary learning styles of these students?
3. Is there a significant relationship between the students’ dominant Multiple Intelligences and their preferred vocabulary learning styles?
4. How can these findings inform the conceptualization of instructional frameworks in a rural upland educational context?

2. METHODOLOGY

The study employed a descriptive-correlational research design to examine the relationship between learners’ Multiple Intelligences (MI) and their English Vocabulary Learning Styles (VLS). According to Creswell and Creswell (2018), this design is instrumental in identifying patterns and relationships between variables without active intervention. The study was conducted at PAIMA National High School, located in Purok 6, Paitan, Bayombong, Nueva Vizcaya, Philippines. This mountain-based locale was selected to capture the authentic classroom conditions of a rural upland educational setting, where geographic isolation often influences linguistic and cognitive development.

The respondents of the study were the Grade 7 and Grade 8 learners of the institution. Rather than utilizing a sample, the study employed total enumeration, involving all 74 junior high school learners (42 from Grade 7 and 32 from Grade 8). Total enumeration is particularly effective in small-scale localized studies, as it eliminates sampling error and provides a comprehensive view of the entire target population (Singh & Masuku, 2014).

Two primary research instruments were utilized for data collection. The first was an adapted Multiple Intelligences Questionnaire based on Gardner’s (1983) framework, consisting of a 24-item survey where students rated themselves from 1 (Not True of Me) to 3 (Very True of Me). The second was a Vocabulary Learning Styles (VLS) Questionnaire, a 12-item situational survey categorizing preferences into Visual (A), Auditory (B), Tactile (C), or Kinesthetic (D) strategies, adapted from the taxonomies of Oxford (1990) and Gu and Johnson (1996).

To ensure the validity of the instruments, they were subjected to a rigorous review by three subject matter experts (Magday et al., 2022; Magday & Pramoolsook, 2021; Coidno & Magday, 2026). The validation process resulted in a perfect agreement among the three validators (Pramoolsook & Magday, 2019; Magday & Pramoolsook, 2020), indicating a high degree of content validity. In the context of inter-rater reliability, a perfect agreement reflects a Content Validity Index (CVI) of 1.0, which, as noted by Cohen (1960) and later expanded by Shrout and Fleiss (1979), Rosero et al. (2025) and Magday et al. (2024), signifies that the instruments are perfectly aligned with the research objectives and are highly reliable for the target population. Ethical considerations were strictly followed, including securing school clearance and obtaining informed consent from the respondents prior to data gathering.

3. RESULTS AND DISCUSSION

Multiple Intelligences

The profiling of the learners’ Multiple Intelligences (MI) provides a window into the cognitive architecture of junior high school students in a rural upland setting. As shown in Table 1, the data reveal a distinct hierarchy of intelligences that deviates from the traditional linguistic-heavy focus of standard curricula.

Table 1: Dominant Multiple Intelligences Profile

Intelligence Domain	Mean Score (G7)	Mean Score (G8)	Verbal Interpretation
Interpersonal	2.81	2.76	Very True of Me
Naturalist	2.75	2.72	Very True of Me
Musical	2.62	2.58	Very True of Me
Visual-Spatial	2.15	2.20	Somewhat True of Me
Verbal-Linguistic	1.88	1.95	Somewhat True of Me

The results indicate that Interpersonal Intelligence (Weighted Mean = 2.79) is the most dominant trait among the respondents. This suggests that the learners at PAIMA National High School possess a strong ability to understand and interact effectively with others, favoring collaborative engagement over solitary tasks. This is closely followed by Naturalist Intelligence (Weighted Mean = 2.74).

The prominence of these two domains can be attributed to the school's geographic and socio-cultural context. Located in an upland rural community, students are in constant interaction with their natural environment and rely on close-knit social structures. This finding aligns with the study of Lekshmi (2016), which posited that learners from rural backgrounds often exhibit higher Naturalist and Interpersonal intelligences due to their ecological surroundings and community-oriented lifestyles. Recent studies by Balaspe (2023) further support this, noting that indigenous and upland learners often score significantly higher in naturalist and interpersonal domains compared to linguistic ones, reflecting their community-based survival and socialization patterns.

Interestingly, Verbal-Linguistic Intelligence received the lowest weighted mean (1.92). This presents a pedagogical challenge, as traditional English language instruction relies heavily on linguistic processing. According to Gardner (1983), when a learner's linguistic intelligence is not the primary strength, instruction must be "bridged" through their dominant domains. In this case, the students' social (Interpersonal) and environmental (Naturalist) strengths must serve as the vehicle for language acquisition. Research by Teng (2020) suggests that for students with lower linguistic intelligence, vocabulary acquisition is most effective when anchored in collaborative social tasks, rather than isolated rote memorization.

The data suggest that the "Upland Learner" is not a passive recipient of text but an active, social, and environmentally-attuned participant. Armstrong (2009) emphasizes that for students with high interpersonal scores, learning is a social act; therefore, vocabulary and grammar should be taught through cooperative learning structures. Furthermore, the high naturalist score suggests that using the local mountain topography as a "living textbook" could significantly increase engagement and retention in English lessons. Recent trends in Place-Based Education (PBE), as advocated by Sobel (2020), emphasize that learning outcomes are optimized when the curriculum is grounded in the local landscape and community history, a strategy that directly addresses the strengths identified in this student population.

Vocabulary Learning Styles

The analysis of the learners' preferred English Vocabulary Learning Styles (VLS) provides critical insights into the sensory modalities through which junior high school students at PAIMA National High School process new lexical information.

Table 2: Preferred English Vocabulary Learning Styles

Learning Style	Preference Frequency	Percentage (%)	Rank
Kinesthetic (Action/Movement)	34	46%	1
Visual (Pictures/Board)	19	26%	2
Auditory (Stories/Audio)	11	15%	3
Tactile (Writing/Dictionary)	10	13%	4

The data reveals that Kinesthetic learning is the most preferred style among the respondents, with 46% (n=34) opting for actions or physical movements to internalize new words. This is followed by Visual learning at 26% (n=19). These results indicate that a majority of the learners at PAIMA National High School are "active-visual" learners who rely on physical engagement and graphic representations rather than traditional rote-writing or solitary reading.

This preference for movement-based learning is a hallmark of adolescent development in rural settings. This finding is consistent with Teng (2020), who observed that vocabulary acquisition is significantly more effective when learners are physically involved in the task. Supporting this, a recent study by Mustafa (2023) emphasizes that "embodied cognition"—where physical movement is paired with language—creates a more resilient neural pathway for second-language retention. Furthermore, the preference for visual aids suggests that mental imagery serves as a crucial scaffold. This aligns with Arispe and Blackburn (2021), who found that for learners in linguistically diverse rural areas, visual-spatial supports act as a primary "decoder" when the target language is not frequently used at home.

Conversely, Tactile learning—specifically traditional strategies such as copying definitions from a dictionary—ranked lowest at 13%. This indicates a clear disconnect between conventional “paper-and-pencil” instruction and the natural inclinations of the students. According to Hanson (2022), students in the modern era, particularly those in resource-scarce environments, show “cognitive fatigue” when faced with repetitive tactile tasks that lack immediate contextual relevance. As noted by Sobel (2020), traditional classroom methods often fail to engage rural learners because they lack the “lived experience” found in their daily environments.

The dominance of Kinesthetic and Visual styles (Table 2) directly mirrors the students’ high scores in Interpersonal and Naturalist intelligences (Table 1). The learners’ social nature finds expression in the “Action/Movement” of kinesthetic learning. Paredes and Alieto (2022) highlight that in Philippine rural contexts, learning is often a community-shared activity; thus, “social-kinesthetic” strategies like group-based language games are more culturally responsive. This alignment reinforces the necessity for Place-Based Education (PBE), as suggested by Sobel (2020), where vocabulary is introduced through physical interaction with the local landscape. Furthermore, Mali and Lim (2024) argue that integrating the local ecology into language lessons—such as labeling mountain flora—effectively bridges the gap between a student’s Naturalist intelligence and their linguistic output.

Intersection of Dominant MI and VLS

The third stage of the analysis examines the intersection between the learners’ cognitive profiles and their instructional preferences. This relationship is pivotal for developing a pedagogical model that transcends traditional textbook-bound methods.

Table 3: Relationship Between Dominant Intelligence and VLS

Intelligence Domain	Preferred Learning Style Alignment	Correlation Strength
Interpersonal	Kinesthetic (Group games/charades)	High
Naturalist	Kinesthetic (Outdoor/contextual)	High
Musical	Auditory (Songs/Rhymes)	Moderate
Visual-Spatial	Visual (Drawings/Maps)	Moderate

The data reveal a high correlation between the students’ social (Interpersonal) nature and their preference for active (Kinesthetic) vocabulary learning. Specifically, students who rated themselves highly in group work (Intelligence Statement 6) consistently chose situational options involving movement and interaction. This synergy is supported by Mustafa (2023), who argues that for interpersonal learners, physical movement acts as a “social anchor” that facilitates language output. In the context of PAIMA National High School, this suggests that the most effective way to teach English is through collaborative “embodied” tasks where students can interact both physically and socially.

A similarly strong relationship exists between Naturalist Intelligence and Kinesthetic VLS. The upland environment of the learners likely reinforces a “learning-by-doing” approach to the natural world. This finding is echoed in the work of Mali and Lim (2024), who noted that naturalist learners do not just “observe” nature; they interact with it. Consequently, their vocabulary acquisition is most robust when the learning style involves physical exploration of their environment.

The alignment between these variables confirms that the “Upland Learner” profile is distinctly multi-modal. As noted by Paredes and Alieto (2022), when a student’s dominant intelligence (how they think) is paired with their preferred learning style (how they process), the result is “optimal cognitive resonance.” For teachers in rural upland schools, this means transitioning from a teacher-centered model to a Contextualized-Active Framework. This framework leverages the high-correlation pairs identified in Table 3—such as using the mountain landscape for naturalist-kinesthetic “Word Hunts” or utilizing group-based roleplays for interpersonal-kinesthetic “Vocabulary Dramas.”

Conceptualizing Instructional Frameworks in a Rural Upland Context

The findings of this study provide a direct roadmap for the conceptualization of instructional frameworks tailored to the unique demographic and geographic realities of PAIMA National High School.

1. Leveraging the “Environment-as-Text” (Naturalist-Kinesthetic Framework)

The high Naturalist scores (Table 1) and dominant Kinesthetic preferences (Table 2) suggest that instruction should not be confined to the four walls of the classroom. In an upland context, the school’s mountain location serves as a living laboratory. Instructional frameworks can incorporate “Nature Walks” where students identify and label local flora and fauna in English, effectively bridging their innate environmental awareness with new vocabulary acquisition.

2. Socially-Mediated Learning (Interpersonal Framework)

The learners’ strong Interpersonal intelligence indicates that they process information best through social exchange. Rather than solitary rote memorization, instructional frameworks should prioritize Collaborative Strategic Reading (CSR) and peer-tutoring. Group-based vocabulary games, which were overwhelmingly preferred by respondents (Option D in Part 2), transform language learning from an intimidating individual task into a shared social experience.

3. Multi-Modal “Anchor” Strategies

The moderate alignment between Visual-Spatial and Musical intelligences suggests that vocabulary should be introduced through “anchors.” For these learners, a new word should be accompanied by:

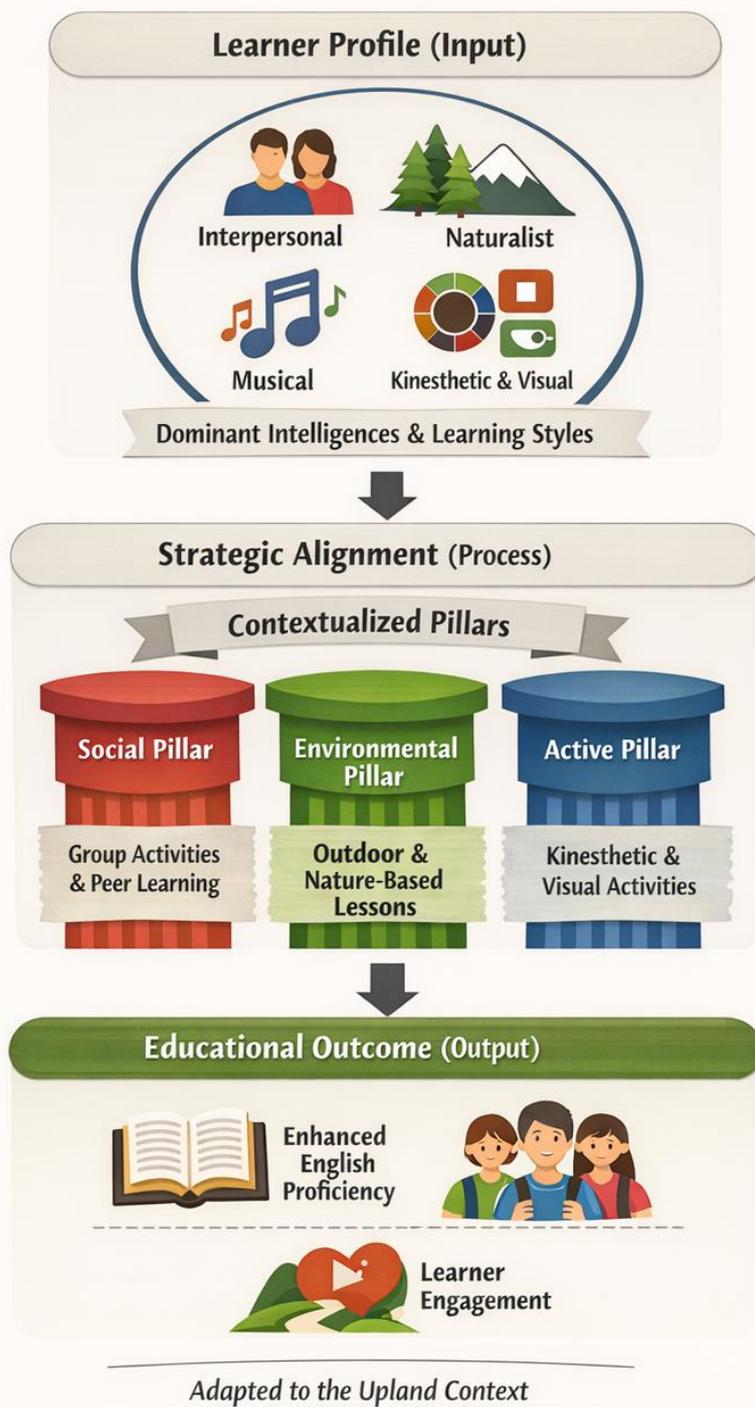
- A Visual representation (board drawing or flashcard).
- An Auditory/Musical rhythm (clapping out syllables or chanting).
- A Kinesthetic action (a gesture representing the word’s meaning).

4. Addressing the Verbal-Linguistic Gap

The relatively low scores in Verbal-Linguistic intelligence (Table 1) indicate that traditional text-heavy instruction—such as copying long definitions from a dictionary (the least preferred style, Table 2)—is likely to result in low engagement and poor retention.

The framework must therefore “scaffold” linguistic tasks through the students’ stronger intelligences, using pictures and actions to eventually lead them toward written and oral proficiency. Thus, CIFUL Framework is proposed as an output of this study.

Figure 1: Contextualized Instructional Framework for Upland Learners (CIFUL)



The framework operates on a tri-level progression designed specifically for the rural upland context of the school:

1. **The Learner Profile (Input)**
The foundation of the framework is the data gathered from the 74 junior high school respondents. It acknowledges the dominant intelligences identified in the study: Interpersonal, Naturalist, and Musical. It also integrates the preferred Kinesthetic and Visual vocabulary learning styles.
2. **Strategic Alignment (Process)**
This is the core “Instructional Framework.” Instead of traditional lecture-based methods, the teaching process is filtered through three “Contextualized Pillars”:
 1. **The Social Pillar:** Uses Interpersonal strengths for collaborative group tasks and peer-to-peer vocabulary games.
 2. **The Environmental Pillar:** Uses Naturalist strengths to bring English lessons into the mountain landscape (outdoor labeling, nature-based vocabulary).
 3. **The Active Pillar:** Uses Kinesthetic and Visual styles to ensure every new word is paired with a physical action or a graphic representation.
3. **Educational Outcome (Output)**
The final goal is not just the memorization of words, but Enhanced English Language Proficiency and Learner Engagement. By aligning the “how” of teaching with the “who” of the students, the geographic and resource-based challenges of the upland setting are converted into pedagogical advantages.

4. CONCLUSION

The study successfully established a comprehensive profile of the Grade 7 and Grade 8 learners at PAIMA National High School, revealing a distinct cognitive landscape dominated by Interpersonal and Naturalist intelligences. These innate strengths are directly mirrored in the students’ preference for Kinesthetic and Visual vocabulary learning styles. The significant relationship identified between these variables underscores that for the “Upland Learner,” language acquisition is most effective when it is social, active, and environmentally grounded. The developed Contextualized Instructional Framework for Upland Learners (CIFUL) serves as a targeted response to the unique challenges of rural, mountain-based education by bridging the verbal-linguistic gap through the students’ strengths in movement and social interaction. Consequently, the framework moves away from traditional, sedentary rote-learning toward a more culturally and geographically responsive pedagogy.

It is important to note that the findings and the resulting CIFUL framework are specifically contextualized for the authentic conditions of PAIMA National High School. Due to the use of total enumeration of a specific small-scale population (N=74) in a unique upland locale, the results reflect the specific socio-economic and geographic characteristics of this school only. Therefore, the framework is conceptualized as a localized solution rather than a universal model for all secondary institutions.

5. RECOMMENDATIONS

For teachers, it is recommended to adopt “Action-Based” vocabulary instruction by integrating physical gestures such as Total Physical Response (TPR) and collaborative group games into daily English lessons to capitalize on the high kinesthetic-interpersonal alignment. Educators are also encouraged to utilize the local landscape by bringing learning outside the classroom and using the school’s mountain surroundings as a “living dictionary” for labeling and description activities, which can significantly enhance retention for naturalist learners. Furthermore, teachers should scaffold linguistic tasks by providing visual and social anchors, such as drawings and peer discussions, before requiring complex written or oral outputs, especially since verbal-linguistic scores were found to be the lowest among the respondents.

For school officials and administrators, it is recommended to support the institutionalization of Place-Based Education (PBE) by providing teachers with the administrative flexibility and resources to adapt the curriculum to the local environment. Officials should also prioritize professional development programs that train staff in contextualized teaching strategies and multi-modal assessment. Additionally, administrators should consider the development of outdoor learning spaces or “eco-classrooms” that utilize the unique topography of the school to provide a more conducive environment for naturalist and kinesthetic learners.

For other schools, it is recommended to conduct localized institutional profiling of student Multiple Intelligences and Learning Styles, particularly for those in different geographic settings such as coastal or urban areas, to develop their own specific versions of the CIFUL framework. For future research, it is suggested that studies expand the demographic scope to include Senior High School respondents to determine if dominant intelligences shift as students mature. Experimental validation is also recommended to test the effectiveness of the CIFUL framework through quasi-experimental designs, and comparative studies between upland and lowland schools could provide deeper insights into how geographic location influences cognitive development.

DECLARATION OF AI-ASSISTED TECHNOLOGIES

During the preparation of this work, the authors used Grammarly in order to refine the grammar, spelling, and syntax of the manuscript. Additionally, ChatGPT was utilized solely to assist in the conceptualization of the study’s framework: the CIFUL framework. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article.

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