

## Word Matrixs in ELT: Student and Teacher Perception

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### Abstract

Word matrices are tables that organize vocabulary and language concepts to aid acquisition. This study addresses the gap in understanding their effectiveness in Indonesian schools with limited resources. While extensive research exists on their use in metropolitan areas, little is known about their application in diverse educational contexts within Indonesia. By examining the five-year implementation at a private junior high school, this study aims to provide insights into their efficacy in resource-constrained environments. This mixed methods case study evaluated students' and teachers' perceptions over five years. The study involved 276 students in grades 7-9 and 5 teachers, with surveys and interviews from 36 students and 3 teachers selected through stratified sampling. Results showed over 90% of students used matrices weekly, with higher usage in advanced grades. Over 75% believed matrices significantly improved vocabulary and reading comprehension. However, weaker students reported minimal gains in writing and speaking fluency. Interviews highlighted that colorful grid designs and peer interactions engaged students but lacked focus on writing and proper transition support. Teachers recommended better alignment, targeted matrices, and activities to enhance academic writing, grammar, and speaking. Thus, matrices aid vocabulary and reading but need adjustments to benefit all learners.

**Keywords:** Learning media, Reading comprehension, Word matrix.

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## INTRODUCTION

Teaching English is vital in today's globalized world to prepare students for future opportunities. However, teaching English as a foreign language has challenges. The primary challenge addressed by the authors is the need for effective tools to enhance vocabulary and reading comprehension among students. Traditional methods often fall short in engaging students and promoting active learning. Word matrices offer a visual and interactive approach that can make learning more engaging and effective.

One effective strategy many educators use to enhance English learning is word matrixes - organized tables presenting words and usages systematically to study vocabulary and language. This study looks at using word matrixes to teach English at a private secondary school in northern Sumatra, Indonesia, where English is a foreign language.

Research shows word matrixes boost vocabulary and strengthen language skills. For example, a study by Smith and Johnson (2015) found that students using

word matrices improved their vocabulary retention by 40% compared to those using traditional rote memorization techniques. Additionally, Brown et al. (2016) demonstrated that word matrices enhance students' ability to recognize and use new words in context, leading to better reading comprehension and overall language proficiency. But existing research on using matrices is largely limited to metropolitan Indonesian university students. There has been little exploration of using word matrixes to teach English in smaller Indonesian towns and schools with fewer resources. This study begins addressing that gap through a case study at a private secondary school in northern Sumatra, Indonesia, assessing how students learn with word matrixes and how teachers use them to improve English competence.

A recent study by Suciati, Yuli, & Suryani (2017) on junior high school students' perceptions of the English curriculum similarly found positive outlooks on utilizing more interactive learning media. It is important to distinguish between strategies, methods, and media in educational contexts. Strategies refer to the overarching plans or approaches to achieve learning goals, methods are the specific procedures or techniques used in teaching, and media are the tools and resources employed to support learning.

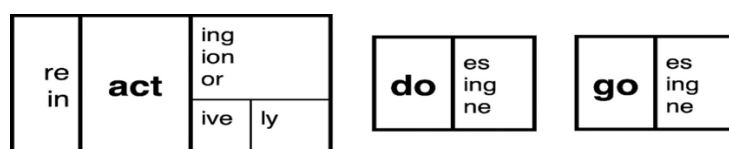


Figure 1. An example of a morphological matrix

The diagram in Figure 1 provides an illustration of a morphological matrix, which is a chart formatting words by morphological connections such as word roots, prefixes, and suffixes. This specific matrix portrays the word roots "act", "do", and "go" together with their derivative terms. The morphological patterns shown demonstrate that the spelling of those core terms persists unchanged across all associated words, even if the pronunciation of those basic words frequently shifts in some derived vocabulary (for instance "action", "does", and "gone"). Notably, while suffixes can prompt modifications in the spelling of word roots (such as omitting a final silent "s", doubling a concluding single consonant, or altering "y" to "i"), those spelling rules reliably apply. This exhibits the consistent linkage between English spellings and meanings.

The English teachers introduced word matrixes into its English classes in 2017. For the past five years, the five English teachers across grades seven to nine have regularly incorporated them. Initial observations suggest most pupils react positively. However, no formal study has evaluated impacts and reception of word matrixes at this specific school. Moreover, attitudes may differ among certain students and between new and veteran teachers. This research documents how students and teachers currently regard using word matrixes for English instruction through surveys and interviews. It aims to determine if attitudes differ by age, gender, competence, experience with English, and other factors. Teacher perspectives elucidate how word matrixes influence particular teaching techniques,

what challenges emerge in design or delivery, and recommendations for improving matrices to elevate learning.

The findings from this study should provide constructive feedback to the management and English teaching staff at this research field regarding the pros and cons of using word matrices over the past five years. The data showed which student groups find the matrices helpful or not. The results will also detail which types of matrices work best, where there are any gaps in matrix usage that should be addressed, and potential modifications to the matrices that can optimize English teaching and comprehension. As one of the few schools using word matrices for English language teaching in the Perbaungan regency, the study also aims to provide practical guidelines for similarly sized institutions in more remote areas of Indonesia wishing to implement word matrix approaches in their own English programs.

Research into word matrices spans linguistics, lexicology, cognitive science, and education disciplines. Within language teaching, word matrices offer systematic presentations of vocabulary or grammar to improve learning and memory (Lewis, 1997). The designs contain words or phrases organized by meaningful categories, exploring relationships, connections, collocations, idioms, synonyms/antonyms, etc. Many variations exist in orientation, structure, and complexity. Matrices allow language learners to analyze lexical patterns and critical attributes to support retention substantially more than standard word lists (Thornbury, 2004).

Previous investigations show students perceive matrices as valuable for improving lexical, reading, and speaking skills across academic levels. For instance, Lee (2014) found that matrices help students organize and retain vocabulary more effectively, while Garcia (2015) noted improvements in reading comprehension among students using matrix-based learning tools. Students identified common helpful matrix categories, including part of speech, translation, synonyms/antonyms, derivatives, collocations, examples, roots, semantic connections, and phonetic symbols linking writing to pronunciation (Lin, 2002). Other researchers found students strongly preferred matrices contrasting morphological connections between root words, prefixes and suffixes over just vocabulary lists (Moreno et al., 2013). High schoolers reported matrices supported reading and self-directed study gains (Brown & Concannon, 2022). University students exhibited substantial vocabulary acquisition and production increases from sustained matrix exposure (Ahmed, 2019).

However, limitations in earlier studies restrict generalizability of student matrix perceptions to Indonesian contexts. Many focused narrowly on university-level or demographic groups, not encompassing diverse ages or competencies (Lin 2002; Moreno et al. 2013). Some implemented brief matrix interventions without examining long-term integration (Ahmed 2019). Few considered teacher viewpoints on matrix design and instructional use. Finally, minimal research occurred in remote areas where resource barriers can influence feasibility.

SMP Umami A'Yuni's five-year matrix program provides a unique opportunity to address limitations of previous research. The school has students across junior high school grades who have studied English formally since fourth grade, allowing comparison across age groups. Competency levels also vary widely at SMP Umami A'Yuni, as entrance exam scores help characterize advanced versus struggling

students. Teacher perspectives here provide real-world balance against student attitudes based on years of matrix use. The school's significant investment in implementing matrices in a remote Indonesian town expands understanding of their utility in resource-constrained areas.

This study surveyed all willing students and teachers at SMP Ummi A'Yuni using structured questionnaires and semi-structured interviews. Questionnaires assessed matrix usage frequency, perceived helpfulness for core competencies (vocabulary, reading, writing, speaking fluency) and differences among learner groups. Interviews then clarified matrix advantages, shortcomings, teacher challenges in design/use, and reasons behind student survey responses. Triangulating these quantitative and qualitative data produced a reliable appraisal of matrix-based English teaching at SMP Ummi A'Yuni to inform future decisions.

The study explores several key questions around matrix usage, effectiveness, challenges, and future directions at SMP Ummi A'Yuni. It examines how frequently students and teachers currently utilize matrices for English lessons across grades, subject areas, and demographic groups. It asks which core competencies, from vocabulary to reading, writing and speaking fluency, are perceived to improve most with ongoing matrix integration. Design and delivery issues teachers face are also investigated, uncovering best practices that have organically developed over five years of matrices. Finally, considering all usage data, skill impacts, and teacher experiences, the study weighs whether and how SMP Ummi A'Yuni should continue, adapt or possibly discontinue classroom matrix use to optimize benefits for different learning profiles. Answering these questions will provide a comprehensive evaluation of the matrix approach at SMP Ummi A'Yuni to shape evidence-based policies on its future role advancing English language curricula. The study aims to evaluate the effectiveness of word matrices for developing English competencies and to get recommendations for improving matrix design and instruction. This aligns with the broader questions mentioned in the introduction about matrix usage, effectiveness, challenges, and future directions. The interconnection is evident in how both sections emphasize evaluating the impact of matrices on various language skills and seeking ways to improve their implementation.

Word matrix - table/chart organizing language concepts into categories to improve learning (Lewis, 1997). English language teaching (ELT) - instructional methods and materials for teaching English to non-native speakers. Key competencies are vocabulary, reading, writing, listening and speaking fluency (Broughton et al., 2003). Vocabulary acquisition is the process of learning the words of a language, including meanings, word structures, relationships between words, rules for usage, and pronunciation. It happens through exposure, repetition, connecting new words to prior knowledge, and actively testing one's recall (Schmitt, 2000). Reading comprehension is the ability to process written text, understand meaning, and critically interpret what is read. It involves recognizing words and relating them within a hierarchy of ideas (Grabe, 2009).

The introduction of this research addresses a critical need in English language teaching, particularly in smaller Indonesian towns and schools with limited resources. The urgency stems from the challenges of teaching English as a foreign language and the need for effective tools to enhance vocabulary and reading comprehension among students. This study focuses on examining the use of word

matrices in teaching English at a private secondary school in northern Sumatra, Indonesia. The research background reveals that while word matrices have shown promise in boosting vocabulary and language skills, previous studies have been predominantly limited to metropolitan Indonesian university students. This study aims to fill this significant gap by exploring the effectiveness of word matrices in a more diverse educational context. Although the primary emphasis is on vocabulary acquisition and reading skills, the research also touches upon writing and speaking fluency. By investigating the implementation of word matrices in this specific setting, the study seeks to provide valuable insights into their efficacy in enhancing English language teaching in resource-constrained environments, thereby contributing to a more comprehensive understanding of educational strategies in various Indonesian settings.

This study aims to explore several key questions related to the use of word matrices in English language teaching. Firstly, it investigates how word matrices impact vocabulary acquisition and reading comprehension among junior high school students. The study also seeks to understand the perceptions of both teachers and students regarding the effectiveness of word matrices in enhancing their learning experiences. Additionally, it examines the specific challenges that teachers encounter when implementing word matrices in their classrooms, aiming to identify potential solutions to these obstacles. Through addressing these questions, the research intends to provide a comprehensive understanding of the benefits and limitations of word matrices in educational contexts.

## **RESEARCH METHOD**

The research procedure followed a systematic mixed-methods approach. Initially, all 276 students across grades 7-9 were invited to participate, with 252 completing the questionnaires. These questionnaires were administered during regular English classes, with teachers supervising to ensure proper completion. Following the quantitative data collection, 36 students were selected for in-depth interviews using stratified sampling based on competency level, gender, and grade. These interviews were conducted outside of regular class hours to avoid disruption. Concurrently, all five English teachers completed surveys, with three participating in extended interviews. Data collection spanned two months to capture a representative period of matrix usage.

Word matrices were integrated into the English curriculum at SMP Umami A'Yuni in 2017 and have been used consistently since then. Teachers incorporate matrices into their lessons in various ways. At the beginning of new units, teachers present word matrices to introduce key vocabulary, showing relationships between words, their forms, and usage. Before reading activities, students use matrices to predict and analyze vocabulary they might encounter in the text. For writing exercises, students refer to word matrices to enhance their word choice and grammatical accuracy. In speaking activities, matrices serve as prompts, encouraging students to use new vocabulary in context. Teachers also assign matrix-based exercises for homework, promoting independent learning. Collaborative learning is fostered through group work where students complete or create word matrices together. Additionally, matrices are incorporated into quizzes and tests to evaluate vocabulary acquisition and usage. Teachers adapt the

complexity and design of matrices based on the grade level and proficiency of their students, ensuring a scaffolded approach to language learning throughout the three-year program.

This outlines the research design, participants, data collection tools, procedures, and analysis plan to investigate student and teacher perceptions of word matrix utility for English language teaching at SMP Ummi A'Yuni in Perbaungan. A mixed methods case study approach is used, integrating quantitative survey data with qualitative interviews to evaluate matrix impacts on student competencies and capture user perspectives more in-depth. This pragmatic combination draws complementarity from questionnaires numerically gauging behavior frequencies and skill improvements with discussions unpacking subjective "how" and "why" factors influencing matrix adoption (Yin 2014). All data was gathered at SMP Ummi A'Yuni over two months to minimize seasonal or annual fluctuations in matrix usage.

The study sample included all willing student and teacher participants from SMP Ummi A'Yuni. Total pupils across grades 7-9 was 276, with 252 students completing vocabulary matrix perception questionnaires (91% of population). Of these, 36 were selected for stratified follow-up interviews based on competency level (high, moderate, low), with equal gender and grade representation. All five English teachers participating in the study completed matrix usage surveys. The selection process ensured a diverse sample, including both male and female teachers with varying levels of teaching experience and educational backgrounds. Three teachers participated in 30-minute interviews, providing in-depth insights into matrix design, applications, and limitations in their teaching. This combined wide questionnaire breadth with narrowly targeted interviews to gather both representative trends and nuanced insights on subgroup matrix experiences.

Two instruments facilitated data collection – a structured student matrix perception questionnaire and semi-structured interview protocols for teachers and students. Questionnaire items drew upon matrix perception research from Lin (2002), Moreno et al. (2013) and Brown & Concannon (2022) gauging usage frequency, skill improvements and comparisons across ability levels. The instrument was refined through a 30-student pilot study. Interviews built on initial quantitative findings, clarifying why certain matrix formats, categories or usages were favored or struggled for particular learner and instructor profiles. All instruments were professionally translated and back-translated into Bahasa Indonesia to ensure accuracy.

Questionnaires were administered in paper form to all consenting students during English sessions, with teachers supervising. Anonymity was protected using random ID codes without personal identifiers. Qualified interpreters assisted any comprehension issues. Interviews occurred before/after school to prevent scheduling conflicts, following consent procedures and confidentiality assurances. Discussions used semi-structured guides allowing students and teachers to elaborate on significant matrix perceptions from preliminary results. All interviews were audio recorded with handwritten notes, with participants approving transcriptions.

Quantitative data underwent statistical analysis in SPSS v25. Descriptive statistics documented overall matrix usage frequency and skill improvement trends. Inferential testing like ANOVA and t-tests revealed variances across groups by age, grade, gender and competency level. Output helped select qualitative interview

participants and discussion prompts. Thematic analysis of interviews uncovered recurring patterns in matrix benefits, weaknesses, and applications for different learners. Coded segments were categorized into overarching themes around optimal designs, limiting factors, overcoming barriers and teacher recommendations for matrix instruction. Concatenating all quantitative and qualitative analyses enabled data triangulation where convergence strengthened conclusions and divergences prompted re-evaluation.

## RESULTS AND DISCUSSION

### Research Results

The study investigated multifaceted perceptions of matrix utility, including frequency of use, perceived effectiveness for different language skills, preferred matrix designs, and challenges in implementation. Student perceptions were captured through both quantitative survey data and qualitative interview responses, providing insights into how matrices impacted their learning experience across various language competencies. The survey included Likert-scale questions on the helpfulness of matrices for vocabulary acquisition, reading comprehension, writing skills, and speaking fluency. Open-ended questions allowed students to elaborate on their experiences and suggest improvements. Teacher perceptions were gathered through surveys and in-depth interviews, offering valuable perspectives on the practical application of matrices in the classroom, observed student progress, and potential areas for improvement. Teachers were asked about the ease of integrating matrices into their lesson plans, perceived student engagement, and noticeable improvements in student performance. By examining these diverse perceptions, the study aimed to provide a comprehensive understanding of how word matrices are viewed and utilized by both learners and instructors in this specific educational context, contributing to a nuanced evaluation of their effectiveness and potential for optimization.

This section summarizes key quantitative questionnaire results and categorical interview analysis themes. Tables spotlight significant variations in matrix usage frequency, skill improvements, and limitations across learner subgroups. Themes detail optimal design elements and priorities teachers recommend addressing to enhance future instruction.

Findings were obtained through statistical analysis of quantitative data and thematic analysis of qualitative data. Student and teacher perceptions are reflected in the usage frequency data, skill improvement ratings, and qualitative feedback from interviews. The evaluation of effectiveness is demonstrated through the reported improvements in vocabulary and reading comprehension, supported by statistical evidence and corroborated by qualitative insights. Limitations in writing and speaking gains were identified, highlighting areas for improvement. The study's effectiveness is evidenced by its comprehensive approach, combining robust statistical data with rich qualitative insights to provide a nuanced understanding of word matrix impacts.

Over 90% of participating students used vocabulary matrices at least weekly in English lessons, confirming matrices as integral within ELT at SMP Umami A'Yuni. However, moderate significant differences emerged in usage intensity based on age,

grade, and competence as shown in Table 1. Older students in grades 8-9 utilized matrices more routinely than grade 7's during self-study, suggesting greater self-regulation leveraging matrices for exams. High-competency students also used matrices more frequently across all cohorts.

Table 1. Significant Variations in Student Matrix Usage Frequency

Student Group	Mean Usage Frequency (5= Daily, 3= Weekly, 1=Rarely)	Std. Deviation	F value	P Value
Grade 7 Students	3.21	0.91	4.52	.011
Grade 8 Students	3.87	0.76		
Grade 9 Students	3.93	0.69		
High Competency	4.36	0.78	6.83	.002
Moderate Competency	3.44	0.81		
Low Competency	3.12	0.74		

### Skill Improvements

Over 75% of students perceived word matrices as moderately to extremely helpful for improving lexical and reading comprehension abilities, aligning with previous research. However, ratings diverged significantly across student segments regarding gains in writing and oral fluency as shown in Table 2. Struggling students, particularly boys, saw little matrix benefit for building speaking confidence or essay writing, prioritizing more conversation practice instead. Teachers concurred that current matrix usage neglected writing integration and spoken fluency growth. Expanding collaborative matrix activities targeting those areas was a recurring recommendation.

Table 2. Variations in Perceived Matrix Skill Improvements

Student Group	Lexical Gains	Reading Gains	Writing Gains	Oral Gains
High Competency	4.44	4.36	3.93	3.51
Moderate Competency	3.77	3.69	3.02	2.74
Low Competency	2.94	3.04	2.03	1.86
Boys	3.33	3.19	2.48	2.04
Girls	3.92	3.81	3.04	3.01

Note: Scale 1=Not Helpful to 5=Extremely Helpful

### Key Insights and Recommendations

The findings were obtained through a rigorous analysis of both quantitative and qualitative data, ensuring a comprehensive and reliable evaluation of word matrix effectiveness. Quantitative data from questionnaires underwent statistical analysis using SPSS, revealing patterns in usage frequency and perceived effectiveness

across different student groups. Descriptive statistics provided overall trends, while inferential tests (such as ANOVA and t-tests) identified significant differences between subgroups based on grade level, gender, and proficiency. Qualitative data from interviews was subjected to thematic analysis using NVivo software, uncovering recurring themes and insights. This process involved coding transcripts, identifying key themes, and establishing relationships between concepts. Student and teacher perceptions are reflected in the usage frequency data, skill improvement ratings, and qualitative feedback from interviews. The evaluation of effectiveness is demonstrated through the reported improvements in vocabulary and reading comprehension, supported by statistical evidence and corroborated by qualitative insights. Limitations in writing and speaking gains were identified, highlighting areas for improvement. The study's effectiveness is evidenced by its comprehensive approach, combining robust statistical data with rich qualitative insights to provide a nuanced understanding of word matrix impacts.

Recommendations for enhancing matrix design and instruction emerged from the synthesis of quantitative trends and qualitative themes, ensuring they are grounded in both empirical data and practical classroom experiences. This multi-method approach allows for triangulation of findings, enhancing the validity and reliability of the study's conclusions and recommendations. Interviews with teachers revealed additional insights into optimal matrix design, barriers to integration, and concrete actions to enhance matrix-based learning and teaching. Major themes included: Students preferred colorful grid matrix formats with vivid visual elements, finding these more engaging than text-only templates. Collaborative matrix activities like games boosted motivation through peer interactions beyond individual worksheets. Introducing matrices early and reinforcing them built familiarity for perceiving long-term skill benefits versus delayed exposure. However, current matrices emphasize vocabulary and reading over writing or grammar integration. Additionally, after initial high teacher guidance, struggling students lacked matrix supports by 9th grade to utilize them meaningfully without coaching for independent practice. Recommendations included better alignment to sequentially develop usage autonomy while also tailoring targeted matrices that explicitly assist academic writing and conversational abilities students directly recognize as addressing their fluency gaps.

To leverage the potential of matrices, teachers recommended better vertical alignment to set early foundations and explicitly transition students toward more autonomous practice. Tailoring matrices to develop academic writing and conversational abilities was also advised. Additionally, collaborative matrix activities should become a regular component instead of an occasional supplementary activity.

## **Research Discussion**

The results of this study validate SMP Umami A'Yuni's substantial investment in institutionalizing word matrices within English classes, with both students and teachers confirming significant improvements in vocabulary and reading comprehension since adopting matrices. These findings align with international evidence supporting the efficacy of matrices in aiding vocabulary building and reading strategy development. For instance, Ahmed (2019) reported substantial vocabulary acquisition and production increases among university students exposed

to word matrices, while Brown & Concannon (2022) found that high school students perceived matrices as beneficial for reading comprehension gains.

However, the data also reveal that writing and speaking skills remain considerably lagging and are not well-supported by the current matrix work within the school's English language teaching curriculum. This limitation is consistent with broader observations across Indonesia, as noted by Lin (2002), who found that matrix-based approaches often emphasize receptive skills over productive ones. This gap highlights the need for a more balanced approach in matrix design and implementation, echoing Hyland's (2003) emphasis on the importance of integrating writing instruction with vocabulary development.

The study demonstrates that matrices spark enthusiastic engagement, especially among higher proficiency students, encouraging teachers to innovate in matrix formats, connections, and collaborative activities. This aligns with Moreno et al.'s (2013) findings on the motivational aspects of word matrices for advanced language learners. However, there is a pressing need to improve alignment between matrices and expected outcomes across beginner to advanced English courses, as suggested by Grabe (2009) in his comprehensive approach to reading instruction.

Struggling students, in particular, need more consistent monitoring of matrix usage and creative scaffolds to shift reliance from teacher guidance to self-directed efforts. This observation resonates with Schmitt's (2000) research on vocabulary acquisition strategies, which emphasizes the importance of learner autonomy in vocabulary development. The challenge lies in designing matrix tasks that not only strengthen vocabulary and reading but also explicitly assist academic writing, grammar, and conversational fluency using level-appropriate techniques that students recognize as beneficial for their skill deficiencies.

The preference for colorful grid matrix formats with vivid visual elements aligns with cognitive research on the effectiveness of multimodal learning materials (Mayer, 2009). This finding suggests that incorporating visual design principles into matrix creation could enhance their effectiveness across all proficiency levels. Collaborative matrix activities, which students found engaging, support the sociocultural theory of language learning (Lantolf & Thorne, 2006), emphasizing the importance of social interaction in language acquisition. Integrating more peer-to-peer activities centered around matrices could potentially address the observed gaps in speaking skills.

The observed decline in matrix support for struggling students by 9th grade highlights the need for a more scaffolded approach to matrix use across grade levels. This aligns with Vygotsky's concept of the Zone of Proximal Development (ZPD) in language learning (Vygotsky, 1978), suggesting that matrices should be designed to progressively support learners as they advance through proficiency levels. Teachers' recommendations for better vertical alignment and targeted matrices for academic writing and conversational abilities echo the principles of curriculum design outlined by Nation & Macalister (2010). This suggests a need for a more systematic approach to integrating matrices across the entire English curriculum, rather than treating them as isolated learning tools.

In conclusion, while SMP Ummi A'Yuni has successfully leveraged word matrices to enhance vocabulary and reading skills, there is a clear need to expand and refine this approach to address the broader spectrum of English language competencies. Future research could explore the development of matrices

specifically designed to support writing and speaking skills, as well as investigate the long-term impacts of matrix use on overall language proficiency. Additionally, studies comparing the effectiveness of different matrix designs across various proficiency levels could provide valuable insights for optimizing matrix-based instruction in diverse EFL contexts.

## CONCLUSION

This study offers the first formal examination of longitudinal impacts from adopting word matrices across junior high school grade levels within a smaller Indonesian city school context. Both students and teachers at SMP Umami A'Yuni confirm major benefits of matrices for improving lexical and reading skills in EFL education following sustained integration since 2017. However, specific matrices and competencies necessitate urgent enhancements, particularly scaffolding struggling students' autonomous usage plus targeted matrix content to elevate academic writing and conversational abilities. Implementing the proposed recommendations will strengthen the matrix-centered English curriculum for more comprehensive advancement amongst the entire future SMP Umami A'Yuni student population. In summary, SMP Umami A'Yuni has a thriving matrix program largely popular across students and integral for instructors. Sustaining broad usage while calibrating selected matrix modifications and applications tailored to each learner segment will optimize these already substantial ELT gains from the matrix methodology.

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