

Reconceptualizing English Language Proficiency Through Socioeconomic and AI-Mediated Exposure Perspectives

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ABSTRACT

Socioeconomic status (SES) and English language exposure have long become the most common researched factors that are linked directly to language proficiency in ESL contexts (ELP). Recent previous studies have shown that English exposure has been proven to be the most direct and consistent determinant of language proficiency while SES remains as an important background variable. This phenomenon has been lingering in Malaysian ESL contexts and has been made even more complex due to other contributing factors like sociolinguistic diversity, access to educational resources as well as urban-rural disparities despite progressing exceptionally well socially and economically. However, there are insufficient studies that examine how exposure now equipped with the emerging, fast adopted technology-Artificial Intelligence, mediates the relationship between SES and proficiency. This gap is what this study, conceptually, aims to provide clarity in addressing these disparities. This study further separates AI exposure into 2 different aspects: Access and Skill. In addition, a conceptual framework together with 6 hypotheses is proposed as its main contribution.

Keywords: Artificial Intelligence, ESL, Socioeconomic status, Exposure, English proficiency

INTRODUCTION

The importance of the English language is still very much significant and it plays a crucial role in matters regarding employability and global participation among Malaysians. In fact, English is considered as the gatekeeping mechanism as far as these matters are concerned (Ishak, 2025). In addition, English proficiency correlates with higher wages and broader labour market mobility (Azam et al., 2023) and is considered among the most critical graduate attributes for employability (Ali et al., 2021). Malaysians in general are taking all of these factors into serious consideration. This is proven by the continuous efforts taken by various parties to enhance ELP among Malaysians. The challenges of sustaining English as the second language without jeopardizing Bahasa Melayu as the national language is an on-going effort. The two-position improvement from 26th to 24th position in the 2025 English Proficiency Index had borne the fruits of this continuous effort. This latest ranking has put Malaysia to be the highest ranked nation as far as ELP is concerned ahead of the Philippines and Hong Kong. However, the decline or uneven ELP among Malaysians especially the young generation is still a grave concern and is echoed in many recent studies. KPM (2023) as in Roslan et al. (2025) reported that a significant number of students are still struggling with English in the Malaysian Certificate of Education (MCE) level that in 2021 and 2022, failure rate has increased to 14.3% with 42% obtained unsatisfactory grades. In a different study, Padmanathan et al. (2021) reported that undergraduates' English language test grades indicated that more than 70% of them; irrespective of their semesters; had scored below average grades (C+ and below) in their language proficiency. Loong & Panicker (2025), in their study with 350 students and 20 English language teachers across ten secondary schools in Klang Valley, confirmed a gradual continued downward trend in English proficiency among adolescents.

The challenges faced by Malaysians ESL learners are commonly linked to these two factors: socioeconomic and exposure. These two factors are the determiners of their ELP. The correlation between socioeconomic status and English language exposure is common not only in countries where English is treated

as a foreign language but also in countries like the Philippines where English has become an important language in work, government, and schools and still proficiency levels among students remain unbalanced because of its inconsistency in socioeconomic status (Dao et al., 2025). Studies that focus on the relationship between SES and ELP are crucial in providing leads to ensure inclusive and equitable quality education that promote lifelong learning opportunities for all, one of the pillars of sustainable goals outlined by the United Nations (<https://sdgs.un.org/goals>). In Malaysia, according to Bahari et al. (2025), ELP paths among pupils from low-income backgrounds remain challenging due to SES factors. Traditionally, many studies have focused on the direct effect of lower SES level and low ELP that is mediated by the exposure to English language. However, with the inclusion of the emerging technology, Artificial Intelligence, in providing a more 'advanced' exposure to learners, the gap is believed to be even more critical as such exposure is considered 'expensive' and such advantages would be more prevalent or affordable among those belonging to high SES. AI technologies fundamentally change how learners access, experience and sustain English language exposure. This has become a strong reason for the traditional exposure model to be reconceptualized. This will also perhaps provide answers to the paradoxical decline of ELP among ESL learners in Klang Valley who have greater exposure and access to educational resources, qualified teachers, better exposure through media and technology yet recorded suboptimal outcomes as far as ELP is concerned (Loong et al., 2025).

Therefore, this study conceptually proposes that AI-mediated language exposure may reshape the traditional relationship between socioeconomic status and English language proficiency. By distinguishing AI exposure into access and skill dimensions, the study proposes a conceptual framework and seven hypotheses to better explain contemporary ESL learning disparities in the Malaysian context. AI tools and the advantages that come with them theoretically democratize personalized language instruction but their real impact is constrained by the actual socio-technical practicalities of the learners. Therefore, AI is seen or functions as a structural mediator that either bridges or widen existing inequities.

LITERATURE REVIEW

Socioeconomic Status, English Exposure, and Language Proficiency in Malaysia

The relationship between ELP and SES has been the main focus in many previous studies in ESL context studies. Apart from SES, in Malaysia, factors like unequal access to linguistic resources, sociolinguistic diversity compounded in a bigger concern of urban-rural disparities also play a role in shaping ELP. Ahmad et al. (2025) in their Malaysian-based studies indicate that while SES remains an important background variable, English exposure is found to be the most direct predictor of ELP.

Studies have also shown that SES gives a huge impact on learners' access to English. Learners from privileged backgrounds have access to better opportunities, such as private schooling, parental support, and digital resources, while underprivileged learners have little to no support in their efforts to learn English beyond the classroom (Rahman et al., 2025; Zulkifli & Kaur, 2024). This gap can be observed particularly in vocabulary development, as learners from lower SES have difficulties to master lexical benchmarks required in order to understand and to apply (Ismail et al., 2025). These findings show that SES mainly happened through environmental affordances rather than direct linguistic outcomes.

Nevertheless, some Malaysian studies show that SES alone may not directly determine English proficiency, due to the existence of mediating factors (Tan & Low, 2025). English language exposure plays a huge important role as it is defined as the frequency and quality of engagement and often identified as the most influential factor (Lim & Yunus, 2024). Fortunate learners with wider exposure to home use, peer interaction, media consumption, and digital platforms are most likely to show higher levels of communicative performance, confidence, and willingness to use English.

The imbalance of English language proficiency in Malaysia can be seen in different regions within Malaysia in comparative studies made between East Coast and West Coast learners in linguistic identity, confidence, and usage patterns, largely affected by varying levels of exposure (Ahmad et al., 2025). Likewise, rural undergraduates mostly enter university with lower proficiency due to lack of exposure during their early years

(Zulkifli & Kaur, 2024). These findings imply that geographical location serves as an indicator for both SES and exposure, increasing inequality.

Crucially, exposure acts as a linking factor between SES and English proficiency. When learners are given more opportunities for important roles, especially via technology and digital platforms that cause adverse effects of low SES can be alleviated (Rahman et al., 2025). This is becoming significant in Malaysia, where AI-assisted learning tools are widely used to access English input where those tools provide ongoing, level-appropriate exposure, potentially reducing the gaps between socioeconomic groups.

In Malaysia, English proficiency plays an important role in both employability and socioeconomic mobility. Graduates with better fluency are more likely to be recruited in the labour market, particularly in communication-intensive industries (Omar & Hamid, 2025). Hence, English acts as a form of socioeconomic capital, proving a recurring relationship where SES influences proficiency, and vice versa.

However, the literature has yet to fully address, as many studies treat SES and exposure as separate variables rather than examining how exposure may mediate the relationship between SES and language proficiency. Most studies have focused on traditional forms of language exposure, with limited attention given to the role of AI tools in mediating learners' engagement with English. This gap is particularly relevant in the Malaysian context, where AI usage has grown considerably over the years, even as learners continue to develop their English proficiency.

In conclusion, studies within the Malaysian context suggest that while SES limits or expands the resources, learners are exposed to English that directly drives proficiency development. This points to the importance of educational approaches that broaden meaningful exposure, especially for learners from lower socioeconomic backgrounds.

AI-Mediated Language Exposure vs Traditional Exposure

The comparison between the AI-mediated language and the traditional exposure has been the central focus in this study. This will provide insights on how AI-mediated language exposure mediates relationship between SES and proficiency. Traditional language exposure (see Figure 1) has been restricted to classroom-centered, teacher-dependent and physical exposure. This has become the dominating concept of exposure in ESL. This concept has now easily been replaced by the fast-evolving advantages brought by AI. The adaptive learning that is made easy by AI has made instructions to be more precise in catering to the needs and development of the learners. Besides, the use of chatbots, seamless feedback system for personalized communication and interactions and all its untapped and yet to be known capabilities have made AI-mediated learning and exposure to be a single element.

Traditional Exposure Model	AI-Mediated Exposure Model
Classroom-centered	Technology-centered
Teacher-dependent	AI-assisted
Limited by environment	Accessible anytime
Exposure mainly physical	Exposure digital + interactive
SES strongly limits access	AI may reduce or widen gap

.Table 1 Traditional Exposure Model and AI-Mediated Exposure Model

AI language learning tools such as ChatGPT, Gemini, AI writing assistants and other conversational platforms encourage learners to learn English beyond the traditional classroom environment. Unlike static textbooks or

constantly relying on dictionaries, these platforms provide on demand, interactive practice that adapts to the learners' level of proficiency, enabling learners to engage in language practice more effectively and consistently. Research made by (Krashen, 1982) indicates that some ESL learners experience lower language anxiety when interacting with AI as compared to human interaction, thereby encouraging more frequent and experimental language use.

Apart from that, AI learning tools are also helpful in drafting, revising, and refining written compositions, supporting academic literacy skills that are closely related with higher SES outcomes (Rebolledo Font de la Vall & González Araya, 2023). These advantages collectively suggest that AI-assisted language learning holds significant impact, particularly when integrated as a complement to, rather than a replacement for, formal ESL instruction.

Despite the promising advantages stated, AI-assisted language has raised concerns regarding over-reliance on AI technologies. Students can be too dependent on technology and spend less time practicing communication skills with teachers in class which could affect their speech fluency (Berdikulova et al., 2025). With excessive usage of AI language learning tools, it may diminish the frequency of meaningful human-to-human English interaction, which is widely considered a critical component of communicative language development (Vygotsky, 1978). AI tools are also missing the touch of human emotion and interaction because it does not understand emotions and provide empathy to the users. Students do not receive the same level of interaction and support from AI learning tools as they do from traditional classroom environments.

When learners consistently defer to AI writing tools or conversational AI platforms for language production rather than employing them as practice aids, the development of independent language competence may be delayed. Learners may bypass the cognitive effort required to construct grammatically accurate and contextually appropriate sentences, which is part of a process that is central to language acquisition (Swain, 1985). This occurs when AI tools like ChatGPT generates complete sentences or paragraphs, as it may deprive students of the productive struggle that fosters genuine proficiency gains. Over-reliance on AI can lead learners to overestimate their actual language abilities, leading to performance disparities between assessed and authentic language use. This particular problem is concerning in high-stakes examination settings, where access to AI tools is often restricted.

Educators and researchers therefore advocate for a scaffolded approach in which AI tools are used to model target language structures or to alert errors, while learners retain primary responsibility for language production.

The Digital Divide and AI Accessibility

The emergence of AI-powered educational tools does not occur in a socioeconomic vacuum. Access to these technologies is deeply formed along socioeconomic lines, raising critical questions about whether the proliferation of AI in education will ultimately narrow or exacerbate existing inequalities in English language proficiency.

Access to AI language learning tools is differently distributed among socioeconomic strata, geographic regions, and educational institutions. In many high-income countries, students with higher sourced schools and universities routinely engage with advanced AI writing platforms and conversational AI systems as part of their academic experience. In Malaysia's context, this disparity is pronounced between urban and rural populations, and between students enrolled in elite private institutions and those national public schools. Studies found that Southeast Asia have consistently found that students from lower income households are significantly less likely to own personal devices, reliable internet connections, or familiarity with AI-powered educational platforms (UNICEF, 2020; Wong & Hamid, 2021).

Many of the most sophisticated AI tools available offer premium versions, including premium versions of ChatGPT, advanced AI writing tools such as Grammarly Premium, are available through paid subscription. These subscription costs, while modest by the standard of high-income earners, show an obvious financial barrier for learners from low-SES households. All these websites sometimes can cost up to USD 20 per month,

which will burden users from low SES families. While free-tier version typically offer limited functionality, fewer capabilities, and reduced contextual accuracy, thereby restrict their efficiency for sustained language learning.

This situation creates a huge gap between the higher SES family and the lower SES family. Learners from high family incomes have greater language exposure at home, and access to quality schooling also gain preferential access to the most powerful AI language tools. They can afford to pay a monthly subscription, which can give them more advantages that accumulate across academic progress.

Access to AI tools is necessary but insufficient conditions for their effective use. Equally critical is the learner's level of digital literacy, including the knowledge, skills, and disposition required to evaluate and critically engage with digital technologies (Gilster, 1997). A learner who owns a smartphone and can get access to a ChatGPT account but lacks the skills to craft proper sentences, interpret AI-generated feedback, or relying on AI-generated feedback all the time, will derive substantially less benefit than a digitally literate learner with equivalent tool access. Digital literacy is itself socioeconomically arranged. Students from higher SES households benefit from greater informal technology exposure, parental guidance on digital tools, and schooling in institutions that integrate digital literacy curricula. In contrast, students from lower SES backgrounds, especially in rural communities, are less likely to have been systematically taught how to engage critically and productively with AI technologies.

Underlying all dimensions of AI accessibility is the question of physical and digital infrastructure. Conversational AI platforms and AI writing tools require reliable, high-speed internet connectivity, decent power devices, and stable electricity supplies. All these may sound normal, but not all students have the privilege of those facilities. In rural Malaysian communities, for example, internet penetration remains lower than in urban centres, and speed limitations may render cloud-based AI platforms effectively inaccessible for sustained use (Malaysian Communication and Multimedia Commission [MCMC], 2022).

These structural inequalities suggest that policy level interventions, including government funded internet access programmes, subsidised devices for low SES learners, and targeted infrastructure investment in rural schools, are important for ensuring that AI tools contribute to rather than create inequalities in English language proficiency.

AI as a Potential Amplifier for SES Inequality

Taken together, the evidence reviewed in this section shows that while AI tools have the potential to make high-quality English language learning more accessible to all learners, their current implementation may also worsen rather than reduce existing socioeconomic inequalities in ESL achievement.

The convergence of subscription barriers, differential digital literacy, and infrastructure differences means that learners from higher SES backgrounds are systematically better positioned to exploit AI-mediated language learning opportunities. This creates disadvantages for low SES ESL learners, who face not only the well-documented challenges of limited language exposure at home, but also constrained access to quality schooling and reduced cultural capital (Bourdieu, 1986), emerging technological divide that further restricts their capacity for autonomous language development.

However, these problems can be avoided if appropriate interventions are implemented, such as ensuring equitable access to AI tools, embedded digital literacy instructions, and investing in targeted infrastructure development. In this way, the vision of AI as an educational balance can become a practical reality rather than remain as an ideal.

PROPOSED CONCEPTUAL FRAMEWORK

The proposed conceptual framework (see Figure 1) is designed to introduce AI as a mediator between SES and ELP. This will assist in establishing the role of AI that will later be listed as one of the elements in AI mediated English exposure together with other traditional elements.

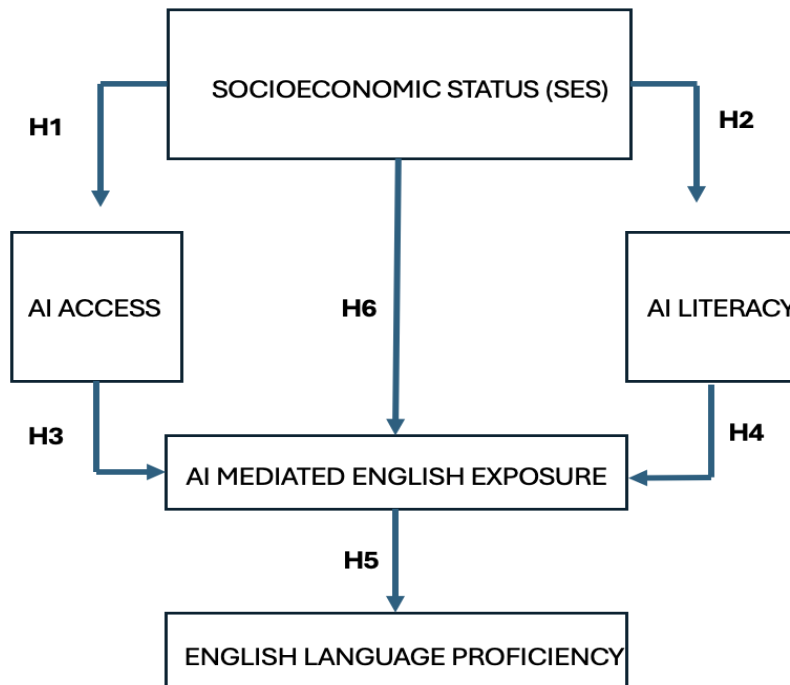


Figure 1 Proposed Conceptual Framework

The hypotheses :

- H1: Socioeconomic Status (SES) positively predicts **AI Access**.
- H2: Socioeconomic Status (SES) positively predicts **AI Literacy**.
- H3: AI Access positively predicts **AI-Mediated English Exposure**.
- H4: AI Literacy positively predicts **AI-Mediated English Exposure**.
- H5: AI-Mediated English Exposure positively predicts **English Language Proficiency (ELP)**.
- H6: AI-Mediated English Exposure mediates the relationship between **SES and ELP**.

DISCUSSION

This paper has dealt with the impact of AI by dividing it into 2 distinctive aspects: Access and Skill. These two categories have different implications that are believed. Having only the access (hardware, software, internet) is considered the most basic level to which the impact on one's ELP is assumed to be lower compared to those with AI skill (Prompting, critical thinking). Those who possess AI literacy are the ones who are able to reap the ultimate benefits that AI could offer instead of just relying on the 'direct content' provided as answers for their tasks per se. This lower ranked exposure may limit critical thinking and increase learners' dependency and detrimental to their English proficiency. The ability to master the skill of utilizing AI or AI Literacy is seen as better than just having AI Access. The ability to come up with more precise prompts show that the students are into the process of thinking critically, able to determine the direction of the use of AI, having control on the overall process.

In the process of teaching and learning, the language instructors need to understand that the use of AI is a double-edged sword. If the method is used appropriately, it can widen a learner's exposure to English far beyond what a single classroom or a single teacher could ever provide. Otherwise, it can just easily become a

shortcut that quietly disrupts that very skills it was meant to build. This is why the distinction this paper draws between AI Access and AI Literacy matters so much for ESL teaching. It is not enough for schools to hand learners a device or a subscription and assume the exposure gap is solved by doing so. Instructors need to actively teach learners on how to operate the use of AI, and not just let them simply use it without proper practical skills. This might mean building small habits into lessons, where asking learners to draft something themselves before checking it against an AI tool, or getting them to explain why the AI corrected a sentence rather than just accepting the correction. Without this kind of guidance, AI risks becoming another item on a long list of things wealthier learners quietly do better, while everyone assumes the technology itself leveled the field.

This points directly to the equity concern that runs through the whole paper. Many conclude that AI tools look like a great equalizer. A learner in a rural school and a learner in an elite private college can, in theory, open the same chatbot and get the same quality of feedback. But this study argues that this promise only holds if access, affordability, and digital literacy all line up at once, and for many Malaysian learners, especially those from lower SES households, they simply lack those. A learner with poor internet connection, will face difficulties to sustain a conversation with a chatbot. While, a learner who has never been taught how to phrase a good prompt will get far less out of the same tool than one who has. So the democratisation potential of AI is real, but it is conditional, not automatic. In this sense, AI does not remove the existing inequality between high and low SES learners, but it restructures it around technical rather than purely material terms.

At the same time, the risks of over-reliance on AI cannot be brushed aside, even for learners who do have full access to it. When learners constantly let AI generate their sentences, correct their grammar, or produce entire paragraphs, they are indirectly skipping the thinking process struggle that research has long identified as central to actually acquiring a language. This is arguably a more subtle danger than the access gap, because learners from low and high SES both will be affected since they have easier access to the tools that make learning experience requires less effort to think beyond the box. Learners that rely fully on AI help for every task may perform well in low-stakes settings but struggle the moment they need to create their own sentence independently, such as in an exam hall where AI is completely restricted. Instead, AI should model, prompt, and flag errors, but the learner should still be the one doing the actual work of producing language.

For Malaysian education policy, these findings suggest that closing the SES-ELP gap in the age of AI cannot rely on infrastructure spending alone, although that remains necessary. Subsidised devices and expanded rural internet access, as this paper has argued, address only part of the problem. Policy also needs to be aware that without a proper teaching method on how to fully utilise AI will be unhelpful, even with the presence of learning devices. Instead, they also need to fund and mandate digital and AI literacy instruction, so that learners from lower SES backgrounds are not just given the tools, but also be able to learn how to use them critically. Without this second layer, it will be unfair for lower-SES learners since they could not get benefits from both access and the informal digital literacy they pick up at home.

Taken together, this is really the central argument of this paper, where AI does not have a fixed effect on the SES-ELP relationship. It can act as a compensatory exposure mechanism, which can help underprivileged learners by providing learning opportunities they lack, or it could also function as an inequality amplifier, by giving even greater advantages to students who already have strong educational support.

CONCLUSION

In conclusion, it is important to acknowledge that the relationship between socioeconomic status (SES) and English language proficiency should be taken seriously in light of the growing influence of artificial intelligence (AI) on language learning. By proposing AI-mediated language exposure as a mediating agent, the study extends traditional perspectives of language exposure beyond classroom instruction to include personalised, technology-driven learning experiences. Even though AI has the possibility to increase access to English language practice and enhance learners' proficiency, its benefits remain closely linked to learners' access to digital resources, AI literacy, and opportunities for meaningful engagement with these technologies. As much as AI could offer advantages in language learning, it can also be viewed as a double-edged sword

which can cause harmful effects. While it has the potential to enhance language learning, excessive reliance may be, to a certain extent, considered 'harmful' to the development of ELP. What makes this gap easy to overlook is that it plays out quietly, mostly on personal devices in personal time, well outside the classroom's view. If unequal access to AI and unequal ability to use it are ignored, these small differences can gradually accumulate into significant disparities in English language proficiency.

The proposed framework in this paper reconceptualises AI-mediated English exposure not as a simple extension of technological access, but as a learning mechanism shaped by both access and AI literacy. Within this framework, SES influences the resources available to learners, while AI access and AI literacy shape their capacity to engage meaningfully with English through AI. AI-mediated English exposure is therefore positioned as the mechanism linking socioeconomic conditions with English language proficiency. This provides a theoretical foundation to comprehend the evolving connection between SES, AI-mediated language exposure, and English language proficiency. Future research should empirically validate the proposed framework across different educational contexts and socioeconomic groups to determine the extent to which AI-mediated language exposure contributes to equitable English language learning outcomes in the digital era. It is hoped that, once empirically validated, it will provide practical direction for policymakers and educators in ensuring that AI narrows, rather than quietly widens, the gap between high and low SES learners.

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