

Exploring Teachers' Perspectives on the Impact of Generative AI on English Speaking and Motivation: A Case Study of MyAIBuddy

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Abstract

Generative Artificial Intelligence (GenAI) is increasingly used in language education, yet little is known about how teachers perceive its impact on English speaking skills and learner motivation, particularly in Hong Kong. This exploratory qualitative study investigated teachers' perspectives on a GenAI tool, MyAIBuddy, through semi-structured interviews with a small sample of primary and secondary school English teachers. Lesson observations were used to contextualize and triangulate teacher accounts rather than as a standalone data source. These findings are based on teacher perceptions rather than direct measurements of student outcomes. Teachers perceived that MyAIBuddy supported personalized speaking practice and provided immediate feedback, which they associated with increased student motivation and confidence, as well as some reduction in speaking anxiety. Teachers also reported benefits for assessment efficiency and managing learner diversity, alongside concerns about over-reliance on AI. This small-scale case study offers exploratory insights into an under-researched area and may serve as one input for discussions on the Digital Education Blueprint and AI Literacy Learning Framework, while laying groundwork for future large-scale research on GenAI and second language speaking development.

Keywords: Artificial intelligence (AI), AI in Education (AIED), chatbot, Digital Education Blueprint, English language learning, English speaking skills, generative AI (GenAI), motivation

1. Introduction

The rapid growth of generative artificial intelligence (GenAI) tools has significantly changed education, especially in language learning (Baidoo-Anu & Owusu, 2023; Choi et al., 2025). Since the launch of ChatGPT, many educators have felt excited about the potential of GenAI to improve teaching and learning (Chiu, 2024). This qualitative case study explores teachers' views on using a specific GenAI tool called MyAIBuddy to help primary and secondary school students in Hong Kong improve their English, particularly their speaking skills. By listening to teachers' experiences, this study aims to identify the benefits and challenges of using AI for language instruction and understand how it affects students' motivation and engagement.

The Hong Kong English Language Education Curriculum Guide (Curriculum Development Council, 2017) states that primary and secondary students should develop skills in listening, speaking, reading, and writing. They should also be highly motivated and able to learn independently. However, research shows that students in Hong Kong do not have enough opportunities to speak English (Chan & Walsh, 2024). Even though learning English is considered important, students have limited chances to use it in daily life or at school. Moreover, opportunities to interact with Native English Teachers (NETs) are quite limited (Legco, 2014).

1.1 Challenges in Developing English Speaking Skills

Students in Hong Kong face several challenges when learning to speak English. One major problem is foreign language speaking anxiety. This often happens because students do not have enough practice time. As a result, they become less willing to speak and lose confidence in their speaking ability. Another issue is the lack of immediate feedback during speaking practice. Without guidance, students find it harder to improve (Chung & Leung, 2016).

Research also shows that students with low self-esteem and high anxiety struggle more, even if their English is quite good. On the other hand, students who are more motivated and less anxious tend to speak more easily and effectively (Leong & Ahmadi, 2017). This highlights how important motivation is. Students' attitudes toward learning can strongly influence how well they speak (Chan et al., 2024).

1.2 How Generative AI Offers Hope

In response to such challenges, generative artificial intelligence (GenAI) has emerged as a potentially scalable intervention. Recent

empirical studies indicate that AI-powered chatbots can provide interactive dialogue in a low-stakes setting, offering personalized, real-time feedback that supports fluency, intonation, and stress patterns (Zhang, 2025). Furthermore, GenAI tools have been shown to enhance learner engagement and motivation by acting as an always-available conversational partner, thereby mitigating the shortage of speaking opportunities (Tran & Nguyen, 2025). When integrated with learning analytics, these tools may also promote self-regulated learning (SRL) by tracking progress and delivering data-driven feedback (Liu, 2024; Zhang, 2025).

It is important to distinguish between the general potential of GenAI for language learning and the specific implementation of any particular tool. This study focuses on one such implementation: *MyAIBuddy*, a GenAI-powered chatbot designed to support English speaking practice for primary and secondary students in Hong Kong. *MyAIBuddy* is part of an e-learning project sponsored by the Quality Education Fund (QEF) in Hong Kong, which aims to foster cross-sector collaboration between schools, technology providers, and business sectors. By examining this specific case, the study explores how a GenAI tool, when embedded in a real-world school context, can address the documented challenges of speaking anxiety, limited practice, and lack of immediate feedback. In this way, the study connects broader discussions about GenAI in education with a concrete example of classroom application: it investigates whether the theoretical benefits of GenAI can be realized in practice within Hong Kong's ESL classrooms.

2. Literature Review

2.1 Generative AI in English Language Teaching and Learning: A Critical Review

The emergence of Generative AI (GenAI), powered by advanced Large Language Models (LLMs), represents a notable shift from earlier educational technologies. Unlike rule-based chatbots that respond based on pre-written scripts, GenAI tools such as ChatGPT use deep learning to generate contextually appropriate, coherent, and natural dialogue (Wang et al., 2024). While this architectural distinction is important, a detailed technical discussion is beyond the scope of this paper. Instead, the focus here is on how GenAI functions in educational settings and what evidence supports or challenges its use in English language teaching and learning.

Promises and Possibilities

Recent literature highlights several ways GenAI may support language learning, particularly for productive skills such as speaking and writing. Rather than listing discrete tool features, the evidence can be organized around three key pedagogical affordances of GenAI for speaking practice.

Authentic Dialogue Generation

First, authentic dialogue generation enables GenAI to produce contextually appropriate, coherent, and natural conversational scripts, which can be used to model real-life speaking situations (Wang et al., 2024; Qadir, 2022; Wan & Moorhouse, 2025). This capacity moves beyond simple scripted exchanges, offering learners exposure to varied registers and communicative contexts.

Interactive, Low-Stress Practice with Immediate Feedback

Second, interactive, low-stress practice with immediate feedback is a core affordance: AI-powered chatbots act as always-available conversation partners, creating a safe, low-anxiety environment for speaking practice. They provide instant, personalized feedback on content, pronunciation, intonation, and fluency using natural language processing techniques (Atlas, 2023; Shuai, 2025). This reduces common barriers to L2 speaking development, such as fear of judgement or limited access to practice partners.

Personalized and Motivating Learning Environment

For writing, similarly, GenAI can generate prompts, suggest improvements, and offer feedback on grammar, style, and organization (Hockly, 2023). Chan and Tang (2025) provide a broad overview of how such models contribute to both receptive and productive language skills.

These three interconnected features therefore form a useful analytical framework for evaluating GenAI's role in speaking instruction, and they are used to structure the discussion that follows.

However, much of this literature remains descriptive or conceptual rather than empirical. For example, Kohnke, et al. (2023) offer suggestions on how generative AI can improve students' English skills. However, these suggestions lack robust, classroom-based evidence. This limits the strength of claims about effectiveness and points to a clear need for more high-quality empirical studies.

Critical Concerns

Ironsi (2024), Wu (2023), and Kaplan-Rakowski et al. (2023) raise valid concerns about AI accuracy, overreliance, and reduced human interaction, the evidence is largely theoretical rather than longitudinal. Nah et al.'s (2023) prompt engineering training offer plausible solutions, but their feasibility in under-resourced classrooms remains unproven. Moreover, Moorhouse (2024) and Wu (2023) assume human interaction is inherently superior, without critically examining how AI might augment, rather than replace, meaningful dialogue when teacher agency is exercised. Thus, the literature provides a strong diagnostic foundation of risks, yet it tends to assume technology unilaterally shapes outcomes, downplaying the role of pedagogical context and teacher mediation.

Wu's (2023) digital divide argument is important yet overly binary, overlooking shifts in digital literacy and institutional support. Law (2024) and Wu (2023) rightly flag data privacy and algorithmic bias, and offer few actionable auditing tools for teachers. Ironsi (2024) frames plagiarism as a student deficit rather than a teachable AI literacy competence. Kristiawan et al. (2024) call for ethical standards

and consent, yet ignore cultural variability in ethical frameworks. Overall, the literature remains preoccupied with identifying risks; what is critically needed is implementation research in authentic classrooms that tests solutions, not just precautionary critiques.

2.2 *The Significance of Motivation and Self-Confidence in English Language Acquisition*

Krashen's (1995) Affective Filter Hypothesis suggests that affective variables—such as motivation, self-confidence, and anxiety—play a crucial role in regulating a learner's openness to comprehensible input, ultimately determining the extent of input processed for language acquisition. Dörnyei's (2005) process-oriented model further conceptualizes motivation as a dynamic and multifaceted driver that initiates and sustains the long-term effort necessary for language learning. Within these frameworks, strong motivation and positive self-perceptions are seen to lower the affective filter, creating optimal conditions for acquisition. On the other hand, low motivation and high anxiety can raise this filter, obstructing learning even in input-rich environments. In other words, even if comprehensible input is available, a learner with a high filter will not acquire it. This is a common challenge in conventional EFL settings, where fears of peer judgment and limited personal feedback often hinder progress (Shuai, 2025). This is why many traditional classrooms fail despite good instruction—the social pressure of speaking in front of peers, fear of negative evaluation, and insufficient practice time keep the filter high. For English as a foreign language (EFL) learners, lowering this filter is a prerequisite for any meaningful speaking development.

Generative AI (GenAI) tools offer a powerful way to lower the affective filter. Researchers have identified AISTA (AI-Assisted Speaking Training Affordances), including real-time, non-judgmental feedback; unlimited practice; learner control over topics, pace, and difficulty; adaptive scaffolding; and a private, stress-free space (Tang, 2026). These affordances directly target the three filter-raising variables: anxiety drops with no peer judgment, confidence increases through immediate feedback showing progress, and motivation increases via learner autonomy (Choi, 2025; Lin et al., 2025). Once the filter is lowered, learners can process the language input they receive.

With the filter down, three interrelated mechanisms drive speaking acquisition. Self-Determination Theory (SDT) explains that satisfying learners' needs for autonomy, competence, and relatedness fosters intrinsic motivation (Lin et al., 2025). Flow Theory shows that AISTA creates challenge-skill balance and clear goals, leading to deep immersion and enjoyment—crucially, flow fully mediates the link between AISTA and willingness to communicate (Tang, 2026). Cultural-Historical Activity Theory (CHAT) reveals that GenAI transforms the learning system: learners become active agents, teachers shift to emotional supporters, and peer learning communities can be established spontaneously (Choi, 2025). Across these pathways, learner agency produces various outcomes: high-agency learners benefit more, while low-agency learners need teacher scaffolding (Tang, 2026). Together, this framework positions motivation and self-confidence as dynamic states that well-designed GenAI tools can systematically lower, creating a good cycle where reduced anxiety leads to more practice, better speaking, and further confidence gains.

2.3 *Research Gaps*

While the current body of literature on generative AI in English language teaching has grown considerably, existing studies exhibit two notable patterns that limit their applicability to primary and secondary school contexts. First, the majority of empirical research has focused on student outcomes specifically, how GenAI affects learners' pronunciation, anxiety, motivation, willingness to communicate, and speaking performance (Choi, 2025; Tang, 2026). Far fewer studies have examined teacher perceptions of GenAI integration, despite teachers being the primary decision-makers and facilitators of classroom technology use. This distinction matters because positive student outcomes do not automatically translate into teacher adoption; educators may hold concerns about AI reliability, pedagogical fit, classroom management, or professional role changes that remain unaddressed in the existing literature (Choi & Moorhouse, 2025).

Second, the participant samples in these studies are almost exclusively university students and adult learners. Choi (2025) studied Korean high school students (ages 16–18), which borders on upper secondary, but the other key studies focused on university EFL learners in China, Iran, Taiwan, Japan and Turkey (Tang, 2026; Huang et al., 2025; Baskara, 2023). A systematic review by Lin et al. (2025) confirmed that most of the GenAI-speaking research has been conducted in higher education settings. Consequently, it remains unclear whether the same psychological and pedagogical mechanisms—AISTA affordances, SDT need satisfaction, flow states, and CHAT-based systemic transformation—operate similarly for primary and early secondary school students, who differ markedly from adults in cognitive maturity, self-regulation capacity, emotional sensitivity, and digital literacy.

Younger learners may experience higher affective filters (Krashen, 1995) due to greater peer pressure, fear of embarrassment in front of classmates, and limited metacognitive strategies for self-directed learning. They may also require more teacher scaffolding to perceive and activate GenAI affordances, as learner agency—a key moderator in Tang's (2026) model—tends to be less developed in school-aged children compared to university students. Moreover, teachers of younger learners face unique challenges: managing classroom AI use, ensuring age-appropriate content, addressing data privacy concerns, and balancing AI interaction with human peer communication. Yet, no empirical study among the 30 reviewed by Lin et al. (2025) specifically examined GenAI for speaking development in primary school contexts, and only one (Choi, 2025) included secondary students, who were near university age.

This lack of focus on K-12 settings is particularly concerning given current educational policies and funding initiatives in Hong Kong. In 2025, the Steering Committee on Strategic Development of Digital Education (SCSDDE) was established to lead digital transformation in schools, alongside the development of an AI Literacy Learning Framework (EDB, 2025). These policy initiatives signal that integrating AI into classroom practice is no longer optional but expected. Furthermore, the Quality Education Fund (QEF) has demonstrated substantial commitment to this direction. In 2021, the QEF allocated HK\$500 million to establish the e-Learning Ancillary Facilities Programme, funding 22 projects that foster collaboration among schools, technology providers, and business sectors. Among these, six

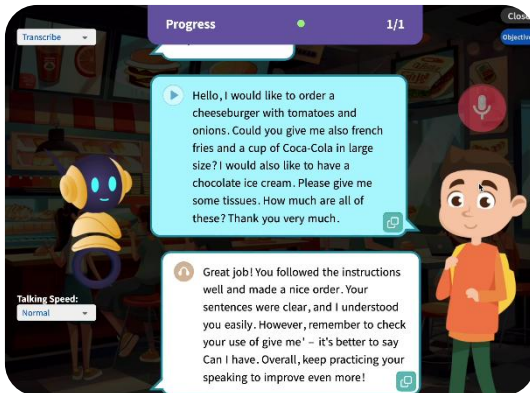
projects are specifically related to language learning with AI, covering primary, secondary, and special education needs (QEF, 2021). These funded projects represent a significant investment in AI-enhanced language education for younger learners. However, while these policy and funding frameworks set institutional goals and provide resources, they do not address a critical gap—how primary and secondary school teachers actually experience, adapt to, and implement generative AI tools in English language instruction. Insights gained from investigating the implementation of these QEF-funded projects could inform and enrich ongoing e-learning initiatives, ultimately supporting the formulation of the Digital Education Blueprint and the AI Literacy Learning Framework. Yet, without empirical research documenting teachers’ on-the-ground experiences, including their pedagogical adaptations, concerns, and professional development needs, policy success remains uncertain. Moreover, teachers of younger learners face unique challenges: managing classroom AI use, ensuring age-appropriate content, addressing data privacy concerns, and balancing AI interaction with human peer communication—very few have been systematically examined in the existing GenAI-speaking literature.

The MyAIBuddy case study addresses these interconnected gaps by examining a GenAI tool designed specifically for younger learners within the Hong Kong primary and secondary school context. Unlike the generic chatbots and LLMs (e.g., ChatGPT, Call Annie, iFlyTek Spark) used in prior studies (Lin et al., 2025; Wan & Moorhouse, 2025), MyAIBuddy is tailored to the developmental needs, interests, and classroom realities of school-aged language learners. By gathering teachers’ perceptions of MyAIBuddy integration into their classrooms, this study aims to illuminate the benefits and challenges of using AI tools for English language acquisition in primary and secondary schools. Understanding teachers’ insights will not only reveal how GenAI impacts student motivation, self-confidence, and engagement from an educator’s perspective but also inform professional development needs. Specifically, targeted training programs can be developed to equip teachers with effective strategies for utilizing generative AI—such as scaffolding learner agency, monitoring AI feedback quality, balancing AI and human interaction, and lowering students’ affective filters through structured AI activities. This study thus extends the existing framework beyond university contexts to K-12 education in Hong Kong, ensuring that instructional practices align with both the evolving demands of language teaching and the strategic direction of digital education policy and funding initiatives.

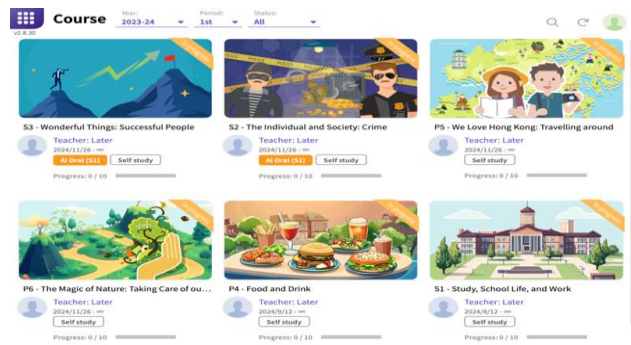
About MyAIBuddy

MyAIBuddy is the product created from the “Metaverse English Learning World – AI Companion Robot and Virtual Environment to foster Students’ English-Speaking Skills” project, under the QEF e-Learning Ancillary Facilities Programme. It aims to enhance students’ English speaking skills using generative AI chatbots (using ChatGPT 4o) and an immersive virtual environment. The project incorporates AI speech evaluation tool (ETS’s speech scoring engine) to assess students’ fluency, pronunciation, vocabulary, grammar, and rhythm. The “MyAIBuddy” initiative also provides a language-rich environment with themed speaking curricula for Key Stage 2 (P4 to P6) and Key Stage 3 (S1 to S3), utilizing chatbot-generated feedback and AI generated resources. In addition, a Metaverse environment allows students to practice speaking through avatars and engage in multiplayer interactive games, generated by AI.

The following screenshots illustrate how MyAIBuddy works:



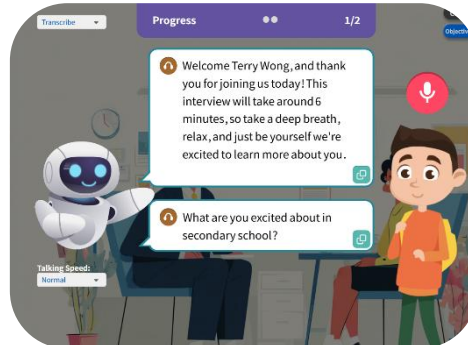
Real-time, automated feedback on pronunciation, intonation, and fluency, enabling immediate error correction and anxiety reduction.



Learners select personally relevant topics, supporting autonomy and lowering the affective filter.



Performance aligned with international proficiency frameworks, providing objective benchmarks that satisfy competence needs.



Based on each student’s prior performance, GenAI generates conversation prompts that match the learner’s skill level, creating the right balance of challenge to support flow.

Figure 1. Screenshots illustrating the user interface and interaction flow of MyAIBuddy

2.4 Theoretical Framework and Research Questions

This study will evaluate whether features such as instant feedback, automated speech recognition and evaluation, personalized content creation, and gamification in MyAIBuddy positively influence students’ motivation to improve their speaking skills. Shuai (2025) further suggests that well-designed AI tools can lower the affective filter by reducing anxiety and increasing motivation in personalized, stress-free learning environments. This study is guided by an integrated framework synthesizing four complementary theories described in the previous section: Krashen’s Affective Filter Hypothesis, Self-Determination Theory (SDT), Flow Theory and Cultural-Historical Activity Theory (CHAT) (Choi, 2025; Shuai, 2025; Tang, 2026). Together, these perspectives explain how GenAI tools such as MyAIBuddy can support L2 speaking development by lowering psychological barriers, satisfying motivational needs, creating optimal experiential conditions, and transforming classroom activity systems. The framework directly informs the following three research questions.

- RQ1: How can English teachers incorporate MyAIBuddy, the generative AI tool, into their instructional practices to enhance student engagement and learning outcomes?
- RQ2: How do English teachers perceive the impact of MyAIBuddy on primary and secondary students’ English speaking skills and motivation?
- RQ3: What challenges and concerns do English teachers encounter when implementing the generative AI tool in the English classroom?

The framework proposes a causal chain for RQ2: MyAIBuddy’s features (instant feedback, student choice, adaptive prompts) lower anxiety and build confidence (affective filter), satisfy needs for autonomy, competence, and relatedness (SDT), and trigger flow states of immersion and enjoyment—ultimately leading to improved speaking outcomes and sustained motivation. This study investigates whether teachers observe these theoretical mechanisms in their classrooms. RQ1 and RQ3 are informed by CHAT, examining how teachers’ roles, rules, and division of labour shift with GenAI integration, and what contradictions or challenges emerge. The following table maps each research question to its primary theoretical foundations and explains how each theory informs the investigation.

Table 1. Mapping of Research Questions to Theoretical Frameworks

RQ	Theory	How the Theory Informs the RQ
RQ1 (Teacher practices)	CHAT + Learner Agency	Examines shifts in teacher roles, rules, and division of labour; explains need to scaffold student initiative with AI
RQ2 (Teachers’ perceptions of student speaking & motivation)	Affective Filter + SDT + Flow	Predicts teachers will observe lower anxiety, higher confidence, need satisfaction (autonomy, competence, relatedness), and flow states (immersion, enjoyment)
RQ3 (Challenges)	CHAT Contradictions + AISTA Limitations	Identifies tensions (over-dependence, role conflict) and AI flaws (feedback quality, partial relatedness, distractions)

3. Methodology

This qualitative study employs a phenomenological approach (Creswell, 2007) to investigate English teachers’ lived experiences with MyAIBuddy in enhancing students’ speaking skills and motivation. Phenomenology is the most suitable design because the research questions focus on teachers’ subjective perceptions and meaning-making, the theoretical framework’s mechanisms (anxiety reduction, flow, role changes) require exploration in authentic K-12 contexts, and existing research has largely overlooked teacher perspectives in primary and secondary schools (Choi, 2025; Tang, 2026). This design thus captures the essence of teachers’ underexamined experiences with GenAI integration

By conducting semi-structured interviews with English teachers who have integrated MyAIBuddy into their teaching for approximately one year, this research aims to capture the lived experiences of these teachers. Through in-depth interviews, participants are encouraged to articulate their perceptions, thoughts, and feelings regarding the integration of generative AI in their classrooms and perceived improvements of their students’ speaking skills and motivation. Before taking part in this study, each person was given clear information about the study’s purpose, what would happen during the study, any possible risks, and any possible benefits. Each person was then asked to sign a consent form to show that they understood this information and agreed to take part. Joining the study was completely voluntary, meaning it was each person’s own choice. Everyone was told that they could say no to joining, or they could leave the study at any time, and doing so would not cause them any problems or negative consequences.

3.1 Research Context and Participants

This study focuses on the integration of Generative Artificial Intelligence (AI) tools within English language education in Hong Kong. This case study specifically examines the insights of five experienced teachers who have utilized MyAIBuddy in their classrooms from six months to one year. These teachers were purposefully selected based on their willingness to share insights and their demonstrated experience with technology integration in language instruction. These teachers are from primary and secondary schools that have subscribed to MyAIBuddy under the QEF e-learning ancillary facilities programme.

Qualitative research often prioritizes depth over breadth, allowing for richer, more nuanced understanding of individual experiences that a larger group might not provide (Creswell, 2007). To enhance the richness and trustworthiness of the data, semi-structured interviews were supplemented by classroom observations. The primary purpose of these observations was triangulation, not to assess teacher performance or student outcomes, but to corroborate and contextualize the teachers’ self-reported insights. Observations allowed the researcher to see actual usage patterns, teacher-student interactions around MyAIBuddy, and any unanticipated adaptations or challenges that teachers might not have articulated in interviews (e.g., off-task student behaviour, technical glitches, or spontaneous pedagogical moves). The observation guide focused on four dimensions: the teacher’s role in scaffolding AI use, student-AI interaction patterns, pedagogical integration (e.g., whether the tool was used as a tutor, dialogue partner, or feedback generator), and classroom management and equity. Descriptive field notes were taken during each lesson and shared with the respective teacher for a brief follow-up conversation to clarify any observed actions or statements.

Data saturation was achieved as no new themes emerged throughout the data collection process and that indicated the perspectives captured represent a comprehensive exploration of the subject matter (Fusch & Ness, 2015). Findings from this study can serve as preliminary explorations, guide further research and inform larger studies in the future.

3.2 Participant Profiles

The participants in this study comprised four female teachers from three local primary schools and one male teacher from a local secondary school. All participants were aged between 35 and 45, had over 10 years of experience teaching English, and possessed some prior experience using generative AI tools such as essay marking and read-aloud tools. A purposive sampling strategy was employed to

select these five participants based on specific criteria designed to ensure rich, relevant data for the research focus. The criteria included: substantial teaching experience (over 10 years) to capture stable pedagogical perspectives; prior hands-on experience with generative AI tools to enable meaningful discussion of their use; an age range of 35–45 to represent teachers beyond early career but not near retirement; and diversity in school level (primary and secondary) and gender (four female, one male) to allow preliminary exploration of contextual differences in AI adoption. Participants were not randomly selected but were identified through school contacts and screened against these criteria. They were chosen because they collectively balanced common ground to enable meaningful cross-case analysis with enough variation to generate meaningful insights appropriate for a small-scale qualitative study.

The characteristics of the interview participants are described below, with all identities anonymized to protect confidentiality:

- **Teacher A (Female):** The English Panel Chairperson at a local primary school. With extensive experience in fostering English language skills among young learners, Teacher A plays a pivotal role in curriculum development and the integration of technology into teaching practices.
- **Teacher B (Female):** Another English Chairperson from the same primary school. Also possessing over a decade of teaching experience, Teacher B is responsible for teaching students in Key Stages 2 and focuses on improving students' productive skills.
- **Teacher C (Male):** The English Panel Chairperson at a local secondary school. Bringing significant experience in applying innovative educational technologies, Teacher C focuses on enhancing speaking skills and providing targeted feedback through generative AI tools for junior secondary school students.
- **Teacher D (Female):** The English Chairperson from another local primary school. She leads a team of English teachers and is responsible for evaluating different technology tools to be used in the English classrooms.
- **Teacher E (Female):** An English teacher at a local primary school, responsible for teaching two classes of P5 students.

All participants provided informed written consent to take part in the interviews, allowing for an open exchange of insights and professional experiences.

3.3 Data Collection and Analysis

3.3.1 Data Collection

Data for this study were collected through semi-structured interviews and supplemented by classroom lesson observations. The in-person interviews were conducted in English, each lasting approximately 30 minutes. With participants' consent, all interviews were video recorded and later transcribed for analysis.

Interview protocol. The semi-structured interview protocol consisted of open-ended questions organized around four focus areas: (a) participants' personal experiences integrating generative AI tools (specifically MyAIBuddy) into their classrooms; (b) perceived improvements in students' speaking skills; (c) observed changes in student motivation and engagement linked to AI use; and (d) challenges and concerns during implementation. Inquiries and follow-up questions were used to explore emerging topics. The complete interview protocol is provided in the Appendix.

Lesson observations. In addition to interviews, the researcher conducted classroom observations during lessons where participants used MyAIBuddy. Observation notes focused on student–AI interaction patterns, speaking opportunities, engagement indicators, and any implementation challenges visible in practice. These observational data were used to triangulate and contextualize participants' interview accounts, particularly regarding claims about student motivation and speaking behaviors.

3.3.2 Data Analysis

A phenomenological approach guided the analysis, emphasizing teachers' lived experiences with generative AI and their perceptions of impacts on students' speaking skills and motivation.

Transcription and member checking. All interviews were transcribed verbatim. Transcripts were returned to teacher participants for review to confirm accuracy (participant checking). Authors also independently reviewed transcripts to develop a holistic understanding before coding.

Coding proceeded through three steps:

Initial coding: Two authors independently read three transcripts line by line, identifying and labeling meaning units (e.g., “students more willing to speak,” “AI mispronunciation,” “fear of over-reliance”). Codes were derived inductively from the data rather than imposed from existing literature.

Code refinement and grouping: The authors met to compare initial codes, resolve discrepancies through discussion, and merge similar codes (e.g., “increased speaking frequency” and “reduced speaking anxiety” were grouped under “speaking confidence”). A preliminary codebook was developed, defining each code and providing an example.

Theme development: Themes were reviewed against coded extracts and the full dataset, then refined. Final themes included, for example, “AI as a low-stakes speaking partner,” “motivation through immediate feedback,” and “technical limitations reducing instructional time.”

In addition, to ensure trustworthiness, the following procedures, investigator triangulation and member checking, were adopted.

Investigator triangulation: The two authors independently reviewed the coding and thematic structure, then met to compare interpretations, discuss discrepancies, and resolve disagreements through consensus. Analytical memos documenting these discussions were kept as an audit trail.

Member checking: After themes were developed, all participants were invited to review a summary of the findings, including the thematic structure and representative quotes. Participants confirmed that the themes accurately reflected their experiences. No participant requested substantive changes.

Observation notes were analyzed separately using the same thematic framework. Findings from observations were compared with interview themes to identify convergence (e.g., observed increases in student speaking turns aligned with teacher reports) or divergence (e.g., a teacher reported high motivation, but observation showed off-task AI use). These comparisons are reported in the findings chapter to strengthen the credibility of conclusions. Some direct quotes from the interviews were used to illustrate key insights, particularly those related to perceived enhancements in students' speaking skills and motivation due to the use of MyAIBuddy.

4. Results

Results were organized around the four themes identified during our thematic analysis. Theme 1 addresses challenges in teaching English speaking in traditional classrooms, as described in the Literature Review section. Themes 2 and 3 provide insights for RQ1 and RQ2 and Theme 4 addresses RQ3.

4.1 Theme 1: Challenges in Traditional Teaching Contexts

The five participants offered specific insights into how these challenges manifest in their classrooms. All five teachers confirmed that students face limited speaking practice in authentic contexts—a finding consistent with prior research. However, the participants moved beyond the literature by revealing how challenges intersect. Teacher C noted that low-ability students find face-to-face activities intimidating, leading to low motivation and reluctance—showing that traditional classrooms can actively intensify anxiety. Teachers A and B highlighted that time constraints prevent instantaneous feedback and effective assessment, especially when addressing varying proficiency levels. Beyond instruction, participants pointed to systemic gaps: classrooms lack authentic contexts, and students often lack outside support. Teacher D added that tracking student progress is difficult, while Teacher E emphasized the absence of a language environment beyond school. What is new from these accounts is not the challenges themselves, but how overlapping factors—anxiety, time pressure, limited tracking, and no external practice—compound to systematically constrain speaking instruction in classrooms in Hong Kong.

4.2 Theme 2: Integration of Generative AI Tools (RQ1)

All five teachers incorporated MyAIBuddy into their English classrooms, though their practices varied. Teachers A and B used the platform regularly within a blended learning approach: they required students to sustain two-minute dialogues with the AI, taught them how to formulate questions, and assigned both theme-matched content and free chat for independent practice. Pedagogically, these actions scaffolded sustained interaction, metacognitive strategy use, and self-directed learning. These teachers believed the tool made seamless learning between class and home possible. Teacher C used the platform's automated assessments, instant feedback, and analytical reports to monitor progress and review how AI-generated personalization could address learner diversity. He also prepared additional discussion topics, assigning different ones to students of varying abilities. His practices reflect data-informed differentiation; he believed the tool could automatically accommodate diversity, though he actively verified this process.

Teacher D used MyAIBuddy as a piloting tool, allowing students to use it after school at home so she could train staff and develop student protocols for ethical use. This practice prioritizes capacity-building and responsible implementation; she believed the pilot enabled institutional readiness. Teacher E used the platform's gamification tools to help students learn vocabulary and sentence structures. Her practice targets discrete language skills; she believed gamification made this learning engaging and self-driven.

Across all five teachers, two shared perceptions emerged. First, they believed that instant, standard-aligned feedback saved them significant time, enabling them to focus more on personalized instruction and supporting diverse learners. Second, they believed the platform's simulated scenarios and gamified environment created a stress-free, immersive space that built student confidence, speaking fluency, and self-directed learning skills. Importantly, while teachers clearly described what they did (e.g., setting tasks, reviewing reports, piloting protocols, using gamification), their beliefs about what the tool made possible (e.g., seamless learning, automatic differentiation, confidence-building) remain perceptions of affordance rather than verified outcomes.

4.3 Theme 3: Observed Changes in Students (RQ2)

4.3.1 Teachers' Observations

Teachers reported multiple perceived benefits of MyAIBuddy for student affect and engagement. Teacher A observed that after introducing the platform, students became more confident and willing to speak English in real-life contexts, less fearful of making mistakes, and more motivated in interactions. Teacher A also noted that in structured lessons, mid- to high-ability students participated more in detailed discussions with the Generative AI tool. Teacher B reported improved motivation in her speaking class, explaining that gamified experiences, avatars, and accessorizing increased student interest. She believed that speaking naturally with AI—asking

questions freely—offered opportunities rarely available in traditional classrooms. She also perceived that instant and authentic feedback led to increased activity and engagement in student communications. Teacher C highlighted reduced stress, particularly for weaker students lacking confidence with teachers or peers. He stated that judgement-free AI interactions create a safe space, helping low-ability students overcome fear of speaking English. He believed instant feedback helped students quickly identify and correct mistakes, alleviating anxiety related to performance uncertainties, while self-paced interaction and positive reinforcement improved confidence. Gamification, in his view, transformed speaking anxiety into an enjoyable activity. He further observed that open-ended chatting—free from predefined vocabulary or sentence patterns—made learning more engaging and empowered students to express themselves naturally, enhancing overall motivation to practise speaking English.

Not all experiences were positive. Teacher D expressed concern that some students might over-rely on AI tools, potentially diminishing original thinking and undermining teachers' professional judgement. She emphasized that human interaction, which AI cannot currently replace, remains essential for language development. In addition, she expressed concern about the novelty effect, noting that students might show initial interest in the tool but would likely stop using it once the novelty wore off, resulting in no sustained impact on their language skills. Teacher E found the tool difficult to use in class: some students had trouble logging in, others played instead of completing assigned tasks, and several needed extra help, making teaching more challenging. She reported that resolving technical issues took time away from instruction. However, she found that asking students to work in groups resolved some of the challenges faced.

These findings can be interpreted through the above mentioned theoretical lenses. The Affective Filter Hypothesis (Krashen, 1995) predicts that lower anxiety and higher confidence facilitate language acquisition. Teacher observations strongly support this: Teacher C noted that judgement-free AI interactions created a safe space for weaker students to practise without fear, while instant feedback alleviated performance anxiety. Teacher A also observed increased confidence and reduced fear of making mistakes. No contradictions to this theory were reported. Self-Determination Theory (SDT) posits that intrinsic motivation is enhanced when autonomy, competence, and relatedness are satisfied. Teacher observations support all three needs: autonomy was supported through open-ended chatting and self-paced interaction (Teacher C); competence through instant feedback and positive reinforcement (Teachers B and C); relatedness through avatars and peer chat (Teacher B). However, Teacher D offered a partial contradiction, arguing that human interaction—which AI cannot fully replace—remains essential for genuine relatedness and language development. Flow Theory describes deep engagement occurring when challenge matches skill and feedback is immediate. Teacher observations support this: gamification and immersive scenarios transformed speaking anxiety into enjoyable activity (Teacher C), while instant authentic feedback kept students engaged (Teacher B). Yet, two contradictions emerged. First, Teacher D raised the novelty effect, suggesting that initial flow-like engagement may be temporary and fade once the tool becomes familiar—challenging the theory's assumption of sustained engagement. Second, Teacher E reported that technical issues and off-task behaviour (students playing instead of working) disrupted engagement, contradicting the theory's precondition of seamless, focused interaction. Collectively, teacher observations largely support the Affective Filter Hypothesis and SDT's three needs.

4.3.2 Lesson Observations

The lesson observation took place in September 2025 at Teacher A's primary school. The class consisted of 25 Primary 6 students with varying levels of English proficiency and focused on an English-speaking lesson about environmental protection. The lesson lasted 35 minutes and aimed to recap vocabulary and sentence structures necessary for preparing a presentation on reducing pollution. Teacher A was enthusiastic about utilizing generative AI tools to enhance student engagement and facilitate personalized learning experiences. It is important to acknowledge from the outset that a single observation cannot support broad or generalizable claims about the effectiveness of using generative AI tools in the classroom. The findings presented here are therefore exploratory and context-specific, intended to offer illustrative insights rather than conclusive evidence. The observation was guided by a systematic framework that examined four key dimensions in five-minute intervals: teacher instructional moves, student engagement indicators, use of the MyAIBuddy, and differentiation practices.

Observation Report

Teacher A commenced the lesson by summarizing key topics and vocabulary related to pollution learned in previous sessions. The stated objectives were for students to reinforce their understanding of vocabulary and to apply it confidently in spoken communication. Following the introduction, Teacher A divided the students into five groups based on their English abilities, ensuring tasks aligned appropriately with each group's proficiency level.

Each group was assigned specific tasks using MyAIBuddy. For example, one group engaged in a read-aloud exercise using AI-generated sentences to practice pronunciation, while another group was tasked with creating short presentations that demonstrated their understanding of pollution reduction strategies. After completing their assigned tasks, students cycled through the remaining activities, including free chat sessions on related topics facilitated by the AI tool.

In terms of engagement, the lesson showed notably positive moments. Students actively collaborated and discussed their tasks enthusiastically, demonstrating comfort in using the AI tool. Their facial expressions indicated enjoyment as they interacted with the speaking tool. Peer interactions were generally supportive, with higher-ability students sometimes assisting classmates. Technical issues occurred when the AI tool failed to accurately recognize certain words for two groups, causing brief but noticeable disruptions of two to three minutes each. There were also two to three incidents where students' devices became disconnected for some unknown reasons, requiring the teacher to help them reconnect to the school's Wi-Fi network.

Teacher A skillfully circulated the room, providing guidance and scaffolding where needed, particularly for groups with lower-ability students. The lesson concluded with a wrap-up session, during which students shared their presentations and reflected on their learning experiences. Immediate feedback revealed that students enjoyed the lesson and valued the AI tools, noting that these resources made tasks more enjoyable and less intimidating. The lesson reinforced their understanding of environmental protection concepts while enhancing their language skills.

To extend learning beyond the classroom, Teacher A assigned additional tasks on the generative AI speaking tool for students to complete at home. These tasks facilitated seamless learning, enabling students to continue engaging with the material inside and outside of the classroom. While this supports learning continuity, the observation suggests that technical support may be needed for home-based work; otherwise technical difficulties may go unaddressed. Future observations should examine these aspects across multiple lessons to build a more robust understanding.

4.4 Theme 4: Future Enhancements and Considerations (RQ3)

Interpretation of Findings

Participants highlighted a vital mindset shift: using Generative AI should not be viewed as “lazy” but as an opportunity to enhance teaching effectiveness. This shift is closely related to teachers’ readiness and training needs. When teachers view AI as a tool for improving their teaching, they demonstrate greater confidence to integrate it into their classrooms.

Teachers A and C suggested that collaboration between teachers and technical experts is essential to ensure AI tools align with pedagogical objectives. Educators provide insights into classroom needs, while technical experts design features to support those needs. This collaborative approach aligns with the QEF e-Learning Ancillary Facilities Programme’s goal of cross-sector collaboration among schools, technology, business sectors (QEF, 2021). Participants also recommended developing more effective scaffolding for lower-ability students. They identified a need for tools that help transfer AI-trained speaking skills to real-life conversations, noting that effective communication goes beyond accuracy. Future updates should equip AI to coach students in interactional skills, tone, and overall communication strategies.

However, participants also raised unresolved concerns. Teachers A and E noted technical and connectivity issues when using AI tools, which can disrupt lessons and reduce teacher confidence. Teacher D worried about students becoming over-reliant on AI, potentially reducing their independent thinking skills.

Recommendations

Based on these findings, the following practical recommendations emerge:

First, schools should provide targeted training that addresses both technical skills and pedagogical strategies for using AI effectively (Chan & Tang, 2025). This training should explicitly normalize AI use as a professional tool, not a shortcut. In addition, schools should formalize teacher–expert collaboration through regular co-design sessions or liaison roles, ensuring AI tools are shaped by real classroom needs rather than technical convenience alone. Third, schools must address technical and connectivity issues by ensuring reliable infrastructure and backup plans. They should also establish clear guidelines to prevent student over-reliance on AI, such as balancing AI use with independent problem-solving tasks. Moreover, AI developers should build adaptive scaffolding for lower-ability students (e.g., step-by-step prompts) and expand coaching on interactional skills like tone and politeness strategies. This comprehensive approach will better prepare students for real-world conversations.

5. Discussions

This section interprets the findings of our case study on using MyAIBuddy to teach English speaking. We use three theoretical frameworks: CHAT (Cultural-Historical Activity Theory) with Learner Agency for RQ1; Affective Filter, Self-Determination Theory (SDT), and Flow for RQ2; and CHAT Contradictions plus AISTA (AI-Assisted Speaking Training Affordances) Limitations for RQ3.

5.1 RQ1: How Teachers Used MyAIBuddy – Changing Roles and Student Independence

When teachers started using MyAIBuddy, their classroom roles changed. Some participants moved from being the main source of knowledge to becoming facilitators. They designed speaking tasks around AI dialogues and let students practice independently. One participant used the AI’s automated assessment to track student progress, which freed up time from marking to give personalised help to students who needed extra support.

However, concerns emerged around student independence. Most teachers wanted students to take charge of their own learning with AI, but several worried about over-dependence. One participant specifically noted that students might rely too heavily on AI feedback and stop thinking for themselves. This is a key insight: a tool designed to empower students can sometimes weaken their independent thinking if teachers do not carefully guide its use.

5.2 RQ2: How Teachers Observed Student Speaking and Motivation: Less Anxiety, Greater Confidence

All participants observed that MyAIBuddy created a low-pressure learning environment. Students felt less anxious about speaking because they were talking to a machine, not a teacher or classmates. Instant feedback allowed students to take risks without fear of being judged or embarrassed in front of others. This matches Krashen’s idea of lowering the “affective filter” – when anxiety is low, language learning improves.

Teachers also noticed that students have become more motivated. Personalized content gave students a sense of choice and control, which SDT calls autonomy. Instant feedback helped them see their progress, building competence. The AI was non-judgmental, which provided a basic form of connection or relatedness, though this was weaker than real human interaction. Gamification elements like points and badges helped some students enter a “flow” state – where they were so engaged that they lost track of time while practicing. This finding is consistent with Tang and Chan (2025)’s study where gamified activities can help motivate students to learn and retain their knowledge.

These observations are promising, but we must be cautious. Teachers saw these effects, but we did not directly measure student anxiety, motivation, or flow. Some participants also believed that AI could fully replace human relationships.

5.3 RQ3: Challenges – Contradictions and AI Limitations

When teachers introduced MyAIBuddy, several practical tensions emerged. One significant concern raised by a participant was over-reliance, meaning students might stop thinking for themselves if they always depend on AI feedback.

Several participants raised technical issues. Unreliable internet connections and software glitches disrupted lessons and made teachers less confident about using the tool regularly. Another tension was role conflict: teachers were expected to integrate AI, but no one gave them clear guidelines on when to trust AI feedback over their own professional judgement.

Looking at the AI tools’ specific limitations, participants noted several concerns. First, while instant feedback was helpful, no one discussed whether that feedback was always accurate. Teachers need to know if AI can make mistakes. Second, students practiced with a machine, not a real person, which meant they missed out on genuine human interaction such as reading facial expressions or responding to tone of voice. Third, several participants observed that students who practiced speaking with AI did not always transfer those skills to real conversations. Finally, gamification features like points and badges motivated some students, but others became distracted by the game elements and lost focus on learning.

These challenges do not mean AI tools are unhelpful. Rather, they show that teachers need practical support – reliable technology, clear guidelines, and holistic training – to use AI effectively without falling into these common pitfalls.

5.4 Contributions of the Study

This study makes several contributions. First, theoretically, it shows that using multiple frameworks together, such as affective filter, SDT, gives a richer understanding of AI adoption than using any single theory alone. In addition, it provides authentic teacher voices from Hong Kong primary and secondary schools, sharing both the benefits of AI such as stress-free practice, instant feedback, and personalized learning, as well as the challenges including over-reliance, technical issues, and limited human connection. Furthermore, it highlights specific tensions such as the risk of weakening student independence and the need for teacher–expert collaboration, which schools and AI developers must address to support sustainable AI integration. However, the small sample size means these findings are preliminary. Yet they provide a foundation for larger studies and offer practical insights for teachers considering similar AI tools.

6. Conclusion

This qualitative case study explored how the generative AI tool, MyAIBuddy, was used to support English language learning in primary and secondary schools in Hong Kong. Through semi-structured interviews with experienced teachers and lesson observations, the study identified several key benefits and concerns related to the use of generative AI in everyday classroom practice.

The findings suggest that AI tools like MyAIBuddy can create more personalized learning experiences. Students were able to practice speaking English both during and after school, and the instant feedback provided by the tool helped them recognize and correct mistakes in real time. As a result, teachers observed their students showed greater motivation and confidence and appeared less anxious about using English. Teachers also reported benefits, including more efficient assessment processes and better support for individualized instruction, which helped them manage diverse learning needs in the classroom. In addition, teachers also witnessed that gamified and interactive features of the tool contributed to a more engaging and motivating learning environment.

The main contribution of this study is that it provides empirical evidence from the teacher’s perspective, as this is an area that remains underrepresented in the literature on generative AI in Hong Kong’s primary and secondary school contexts. Unlike many existing studies that focus on higher education or student-only data, this research centers on the lived experiences of English teachers, offering practical insights into how AI tools can be integrated into their classrooms.

While this study offers useful insights, it is important to note that the findings come from a small-scale qualitative case study. Therefore, the results are not intended to be generalized broadly. Instead, the study aims to inform ongoing discussions about AI in language teaching and learning. The findings may serve as a reference for local initiatives, such as the Quality Education Fund (QEF) e-learning Ancillary Facilities Programme (eLAFF) and may offer preliminary observations that could be considered when developing broader strategies like the Digital Education Blueprint or the AI Literacy Learning Framework. However, large-scale research is needed to determine the direct influence of this study on these policy-level developments.

7. Limitations and Future Research Considerations

This case study presents several limitations that may impact the generalizability and interpretation of its findings. Notably, the sample size is restricted to five participants from local primary and secondary schools in Hong Kong, which may constrain the transferability of

insights to other educational settings. Future qualitative studies could usefully include a larger sample (e.g., 10–15 participants) across multiple schools to explore whether similar patterns emerge across different settings.

This study relied primarily on self-reported data, including participants' personal perceptions, feelings, and reflections. Self-reports are common and valuable in qualitative research for understanding lived experiences. However, they remain subjective. Participants may not recall their experiences accurately. Self-reports alone cannot directly measure actual changes in speaking proficiency. This limitation means that the findings reflect perceived rather than independently verified outcomes. A mixed-methods design—combining qualitative self-reports with quantitative pre- and post-tests of speaking proficiency—would allow for triangulation and provide a more complete picture of the impact of generative AI tools on students' language learning.

In addition, future research should consider prioritizing student voices through semi-structured interviews or focus groups. At the same time, researchers could collect objective performance data such as audio-recorded speaking samples, measures of fluency or pronunciation accuracy, or standardized language assessments to strengthen future conclusions.

This study focused on only one AI tool. Future qualitative or mixed-methods research should compare two or more tools such as different chatbots, voice-based AI, or AI-powered speaking partners within the same study to identify which features students find most supportive and the reasons why. Researchers could also track how learners' perceptions and their actual speaking abilities progress over time, providing insights into sustained effects that a one-time study cannot capture.

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Appendix

The following lists the semi-structured interview questions used in this study.

1. What are some challenges you face when teaching English speaking?
2. How often do you use MyAIBuddy and Metaverse? In the classroom, blended learning or ask students to use the platform after school (seamless learning)
3. How can MyAIBuddy and Metaverse help students improve their speaking skills?
4. How can MyAIBuddy and Metaverse help you with your teaching?
5. What are some changes you can see from your students after introducing MyAIBuddy and Metaverse to them for a period of time?
6. What are some features you like the most about MyAIBuddy and Metaverse?
7. What are some features your students like the most about MyAIBuddy and Metaverse?
8. Can you suggest some improvements you'd like to see implemented in the future?