Roles and Strategies of Generative AI in Multimodal English Instruction: A Qualitative Study of AI-Native English Teachers' Experiences

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Abstract: *With the rapid integration of generative artificial intelligence (Gen AI) into English as a Foreign Language (EFL) classrooms, teachers are increasingly expected to design learning experiences that support students' multimodal literacy development. While prior research has primarily focused on teachers' attitudes toward AI adoption or the effectiveness of AI-supported systems, less attention has been paid to how teachers incorporate Gen AI into instructional design decision-making. This qualitative study examines how AI-native English teachers, who adopted Gen AI early in their careers, integrate Gen AI into multimodal instructional design. Guided by the multimodal learning processes, the study draws on interviews with three teachers and employs thematic analysis. The findings suggest that Gen AI functions primarily as a design support. Teachers use Gen AI to support affective engagement, generate and refine tasks, support scaffolding activities, and develop assessment criteria, while exercising professional judgment to evaluate the appropriateness, accuracy, and contextual relevance of AI-generated outputs. The study identifies challenges, including concerns about excessive reliance on AI, difficulties in aligning outputs with learners' proficiency levels, and the need for ongoing teacher mediation. Overall, the findings highlight teachers' evolving roles and offer implications for English teacher education and professional development.*

Keywords: generative AI, multimodal instructional design, English language teaching, AI-native English teachers

1. Introduction and Theoretical Background

With the increasing integration of digital technologies into everyday communication, language learning environments have become inherently multimodal. Meaning making now extends beyond written language to include multiple semiotic resources (Cope & Kalantzis, 2015). Accordingly, teachers are expected to act as designers of learning by orchestrating these resources to support learners' understanding (Lim & Tan-Chia, 2022). However, multimodal pedagogy in EFL classrooms is often accompanied by challenges related to pedagogical clarity and assessment, particularly in evaluating students' productions (Lim et al., 2022), highlighting increasing instructional design responsibilities for teachers.

In EFL contexts, the multimodal turn requires teachers to make decisions about mode selection, sequencing, and scaffolding aligned with learners' levels and goals (Lim & Tan-Chia, 2022). These demands are especially challenging for novice teachers, who are still developing instructional strategies and professional judgment. In this study, AI-native English teachers are defined as teachers who encountered and adopted Gen AI tools during teacher education or the early stages of their teaching careers, and whose practices have developed alongside the rapid emergence of Gen AI since late 2022. Examining these teachers provides insight into how emerging technologies intersect with early-career professional learning and instructional decision making.

The rapid development of Gen AI has introduced new possibilities for language education. Prior studies have highlighted its potential for personalized learning, intelligent tutoring, and automated assessment (Kamalov et al., 2023). However, existing research has largely focused on general applications or teachers' attitudes toward AI adoption, with limited attention to how teachers employ Gen AI in multimodal instructional design. Little is known about how AI-native English teachers incorporate Gen AI into instructional practices, highlighting the need for further examination.

This study is guided by the following research questions:

RQ1. How do AI-native English teachers utilize Gen AI in their instructional design practices for multimodal learning?

RQ2. How do they integrate Gen AI into their instructional design decision-making for multimodal learning?

RQ3. What challenges and professional considerations do they encounter when using Gen AI for instructional design?

2. Method

This study adopted a qualitative research design to explore how AI-native English teachers in Taiwan integrate Gen AI into instructional design decision-making. The approach aimed to capture teachers' experiences, pedagogical reasoning, and professional judgments rather than measuring predefined outcomes or frequencies of use.

Participants were AI-native English teachers in Taiwan who encountered and adopted Gen AI during teacher education or the early stages of their teaching careers. All were early-career teachers with no more than three years of teaching experience. Three participants were recruited through purposive sampling and provided written informed consent. While the sample size was small, the study aimed to generate in-depth, context-specific insights.

Data were collected through semi-structured interviews focusing on instructional planning, task design, and professional considerations in using Gen AI. Interviews were conducted in Mandarin Chinese, lasted 40–60 minutes, and were audio-recorded. Participants also provided instructional artifacts, such as lesson plans and teaching materials, to support data interpretation and enhance the credibility.

The interview data were analyzed using thematic analysis, following established qualitative procedures (Braun & Clarke, 2006). A theory-informed thematic approach was adopted. First, all transcripts were read repeatedly to achieve familiarity. The data were organized into broad themes, including the multimodal learning processes of encountering, exploring, evaluating, and expressing, as well as teachers' views on Gen AI integration and implications for teacher education. Within each theme, inductive coding was conducted to identify meaning units concerning instructional design practices, uses of Gen AI, and pedagogical reasoning. Interview data were further examined in relation to instructional artifacts. Throughout the analysis, the multimodal learning processes were treated as interpretive themes.

To enhance trustworthiness, data triangulation was conducted using interview transcripts and artifacts. Peer coding was employed, and discrepancies were resolved through discussion. Inter-coder reliability improved from Cohen's kappa 0.62 to 0.79 after refinement.

3. Results

Three AI-native English teachers participated in this study: Teacher A (TA), Teacher B (TB), and Teacher C (TC). TA taught elementary learners in a private cram school with one year of experience, while TB and TC had about six months of experience in senior high school and elementary school contexts, respectively. Interview excerpts are cited as TA-I, TB-I, and TC-I, and instructional artifacts are cited as TA-M, TB-M, and TC-M.

The findings indicate that teachers primarily used Gen AI during lesson preparation and instructional design rather than in classroom instruction. Gen AI was perceived as a supportive tool for idea generation, activity design, and content organization, as well as for refining existing materials, without replacing professional judgment. Its use was selective and context-dependent, based on students' proficiency, learning needs, and instructional objectives. Even when used frequently, teachers retained final decision-making authority over content, sequencing, and assessment. Overall, Gen AI functioned as a design support, while teachers remained central to instructional planning.

3.1. Encountering: Gen AI as Support for Context Building and Learning Engagement

At the encountering stage, teachers used Gen AI to support context building and students' engagement. They generated contextualized texts, picture books, story backgrounds, and instructional scenarios aligned with students' everyday experiences. Such content was primarily used to stimulate motivation (TC-I, TC-M), reduce cognitive load and support initial comprehension rather than serve as complete instructional content.

Teachers also generated images to create multimodal materials combining visual and verbal representations. Despite its efficiency, teachers consistently filtered and revised the generated content. Regarding image generation, TA noted that producing images that fully matched expectations often required repeated prompt revisions. Consequently, teachers

sometimes used Gen AI to suggest suitable image types (TA-I, TA-M). Overall, Gen AI supported engagement and context construction, while teachers retained control over final decisions.

3.2. Exploring: Gen AI as Design Support for Language Form Understanding and Sentence-Level Scaffolding

At the exploring stage, Gen AI supported students' understanding of language forms and the design of sentence-level scaffolding. Teachers relied heavily on Gen AI to generate ideas for sentence-based activities, adjust instructional sequences, or reorganize content to better align with students' proficiency and learning needs (TA-M, TB-I, TC-I).

Teachers also used Gen AI to generate sentence frames, mnemonic cues, or gesture-supported prompts to help students gradually understand and internalize language forms (TC-M). Such scaffolding played a central role in supporting comprehension and practice, with AI enabling rapid generation of diverse examples for repeated exposure.

3.3. Evaluating: Limited Use of Gen AI and Teachers' Professional Judgment in Assessment Design

At the evaluating stage, the focus extends beyond measuring learning outcomes to supporting students' understanding of meaning, stance, and critical thinking. The findings indicate that some teachers recognized this stage as an opportunity to develop students' understanding of multiple perspectives and used Gen AI to support perspective comparison and meaning making.

One teacher described an environmental lesson in which "*many of the causal relationships in the text were actually very difficult for students to understand*" (TB-I). To address this, TB used Gen AI to generate texts representing different perspectives for role-play activities, and to generate listening audio and worksheets to support comprehension of key information and relationships. This design encouraged students to compare perspectives rather than focus on a single text, enabling a deeper understanding of the issue. The teacher further noted that "a*fter that activity, students' motivation increased*" (TB-I), which was also reflected in improved performance in their final exam.

Within this stage, Gen AI functioned as a tool for generating multi-perspective materials. It broadened students' interpretive perspectives and supported judgment and reflection. However, such evaluative designs centered on critical judgment remain relatively uncommon in everyday English teaching, where emphasis often lies on language form acquisition and reading comprehension.

3.4. Expressing: Gen AI in Supporting the Design of Tasks and Conditions for Student Expression

At the expressing stage, the focus lies in supporting students' production, presentation, and reflection. The findings indicate that teachers did not use Gen AI to replace students' creative work, but to design clearer conditions for expression and feedback, supporting reflective learning.

One teacher noted that they "*liked using Gen AI to create peer assessment forms*" (TB-I) during oral presentations and writing activities. Gen AI was used to generate assessment rubrics and peer evaluation sheets, making criteria more specific and transparent while reducing workload. "*Because generating rubrics has become easier, I'm more willing to give students opportunities to present in front of the class*" (TB-I). The teacher further reflected that "*the self-assessment part becomes much simpler, so I'm more willing to include these activities in my classroom*" (TB-I), increasing opportunities for peer feedback and discussion. Gen AI also supported students' reflection and revision in writing tasks. In one activity, students used AI to check grammar and generate images based on their written descriptions (TB-I). By comparing generated images with their intended ideas, students identified gaps in expression and revised their texts accordingly through iterative interaction with the AI tool.

Overall, Gen AI functioned as a mediating tool that supported reflection, revision, and structured feedback, rather than replacing students' production. It enabled more explicit evaluation criteria and increased student engagement and learning ownership.

4. Discussion and Conclusion

For AI-native English teachers in this study, Gen AI enhanced design efficiency without replacing professional judgment. Teachers positioned Gen AI as a supportive resource and continuously evaluated outputs, reaffirming their

central role in instructional decision-making. For early-career teachers, Gen AI also reduced preparation workload, allowing greater focus on instructional refinement and student learning outcomes.

4.1. The Collaborative Role of Gen AI in Instructional Design

Teachers commonly perceived Gen AI as a collaborative partner. It supported topic ideation, enhancement of existing materials, and multimodal transformation, expanding design possibilities without replacing teachers' decision-making authority. The value of Gen AI lies not only in the quality of its outputs, but also in its ability to stimulate teachers' design thinking, provide alternative perspectives, and improve efficiency. This study therefore shifts the focus from AI adoption to how teachers position and interact with AI within instructional design contexts.

4.2. Student Learning as the Core

Even with frequent Gen AI use, teachers consistently prioritized students' understanding, participation, and expression. Their cautious use of Gen AI in the evaluating and expressing stages reflects a strong commitment to maintaining learner agency and avoiding overreliance on AI tools. Gen AI was integrated as a supportive tool to enhance students' comprehension, reflection, and expression, while teachers continued to guide and evaluate the learning process.

4.3. Teachers' Concerns, Reflections, and Implications for English Teacher Education

Teachers approached Gen AI with both optimism and caution, recognizing its value in reducing preparation time while expressing concerns about accuracy, appropriateness, and potential student dependence. The findings suggest that teacher education should emphasize teachers' ability to evaluate and adapt AI-generated content, rather than focusing solely on operational skills.

This study has several limitations. First, participants were all AI-native English teachers at early stages of their teaching careers, limiting insights into how teaching experience may shape instructional design decision-making, as more experienced teachers may integrate Gen AI differently. Second, the analysis relied primarily on interview data and instructional artifacts, without direct classroom observations to capture how Gen AI-supported designs were enacted in practice. Future research could adopt comparative or longitudinal approaches to examine Gen AI integration across different levels of teaching experience.

5. References

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