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# MALL Tools and Strategies for Language Skills, Autonomy, and Digital Literacy: A Case Study of EFL TOEFL Preparation Classes

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**Abstract**

Mobile-assisted language learning (MALL) is now routine in Indonesian higher education, yet little is known about how students in test-preparation courses use specific apps and what they gain beyond test practice. This qualitative case study explored how six MALL tools (Socrative, EnglishScore, ELSA Speak, VOA Learning English, Listen English Practice, and Grammarly) supported the four language skills and shaped learner autonomy, motivation, and digital literacy among 77 undergraduate English education students in three TOEFL preparation classes at a state Islamic university in East Java, Indonesia. Data were collected through a questionnaire with closed and open-ended items, six classroom observations, and semi-structured interviews with 15 students. Qualitative data were analysed thematically following Braun and Clarke's six phases, and closed items were summarised descriptively. Most students reported gains in listening (85%), speaking confidence (76%), reading (70%), and writing accuracy (68%), which they attributed to immediate feedback, adjustable audio, and accessible authentic texts. Most also used the apps independently outside class (82%) and described feedback and visible progress as motivating. Digital literacy grew mainly in operational skills and, to a lesser extent, in evaluating feedback and online sources. Unstable connectivity, app crashes, and phone distractions limited these benefits. The findings suggest that MALL works best when teachers embed apps in structured blended routines that include goal setting, self-monitoring, and explicit digital literacy instruction. Because the evidence is self-reported and short term, longitudinal designs with performance measures are recommended.

**Keywords:** Mobile-Assisted Language Learning; Learner Autonomy; Digital Literacy; TOEFL Preparation; EFL Higher Education

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## INTRODUCTION

Smartphones have become the main gateway to the internet for Indonesian university students, and with it the most available learning device they own. The 2025 national survey by the Indonesian Internet Service Providers Association (APJII) put internet penetration at 80.66%, or about 229 million people, with most users connecting through smartphones and Java recording higher penetration than eastern Indonesia (APJII, 2025). For English language teaching (ELT), this access makes mobile-assisted language learning (MALL) a practical option rather than an experiment. MALL refers to the use of personal, portable devices to support language learning in ways that exploit their mobility and immediacy (Kukulska-Hulme & Shield, 2008; Stockwell, 2022). Research on MALL outcomes is extensive but uneven. The most comprehensive meta-analysis to date screened 1,144 references and retained only 84 experimental studies that met minimal design standards; these showed large effect sizes, but also clear publication bias and very high heterogeneity (Burston & Giannakou, 2022). Earlier reviews likewise found that most MALL studies targeted vocabulary, rarely drew on an explicit theoretical framework, and often relied on short interventions (Burston, 2015; Duman et al., 2015). Positive outcome claims therefore need to be read alongside evidence on how learners actually use mobile tools in their courses.

That evidence points to learner agency. Lai and Zheng (2018) showed that university language learners' self-directed mobile use beyond the classroom varies along several dimensions, and that its value depends on how learners perceive and organise it. A review of technology-enhanced self-regulated language learning found that technology mostly supported the performance phase of learning, such as practice and feedback, rather than the full cycle of planning, monitoring, and reflection (Yang et al., 2023). A more recent review of MALL and self-directed learning stressed that digital abilities are a condition for sustained, lifelong language learning (Shalini Roy & Gandhimathi, 2025). Autonomy, motivation, and digital literacy are thus not by-products of app use; they shape whether app use leads to learning at all. In Indonesia, studies of individual apps have multiplied. ELSA Speak, an app based on automatic speech recognition, has been linked to better pronunciation in secondary and tertiary contexts (Kholis, 2021; Permatasari & Lubis, 2024). Studies of Grammarly show that students engage with its automated feedback behaviourally, cognitively, and affectively to different degrees, and that uncritical acceptance of suggestions is a risk (Koltovskaia, 2020). Generative AI tools have since widened the range of feedback available to learners and raised new questions about agency and AI literacy (Godwin-Jones, 2024).

Three gaps remain. First, most studies examine one app in isolation, whereas students in real courses combine several tools with different functions. Second, digital literacy is usually reported as an incidental outcome rather than examined alongside language skills. Third, test-preparation courses in Indonesian Islamic higher education, where many English education students prepare for institutional TOEFL ITP requirements, are rarely studied as MALL settings. This study addresses these gaps through a case study of three TOEFL preparation classes that used six MALL tools: Socrative, EnglishScore, ELSA Speak, VOA Learning English, Listen English Practice, and Grammarly. It asks two questions:

1. How do students perceive the contribution of MALL tools and strategies to their listening, speaking, reading, and writing skills?
2. How does the integration of MALL tools influence students' learner autonomy, motivation, and digital literacy?

**Mobile-assisted language learning**

MALL grew out of computer-assisted language learning. Early projects used SMS and basic phones for short vocabulary tasks (Stockwell, 2007), and early comparisons found that learners took longer and scored slightly lower on mobile phones than on desktop computers, partly because of small screens and input limits (Stockwell, 2010). Smartphones later added audio, video, speech recognition, and adaptive content, which moved MALL from content delivery towards interaction and collaboration (Kukulska-Hulme & Shield, 2008; Kukulska-Hulme & Viberg, 2018). The pedagogical challenge has shifted accordingly. Burston (2014) argued that the main obstacle is no longer technology but the design of tasks that use mobility meaningfully. Stockwell (2008) showed that learners' preparedness and usage patterns, not device ownership alone, determine whether mobile learning takes hold. Learners may prefer to keep phones for social purposes and resist using them for study, and distraction is a recurring concern (Gikas & Grant, 2013; Thornton & Houser, 2005).

**Learner autonomy and motivation**

Holec (1981) defined autonomy as the ability to take charge of one's own learning: setting objectives, choosing materials and methods, monitoring, and evaluating. Later work frames autonomy as a capacity that develops through interaction and reflection rather than as learning alone (Benson, 2011; Little, 2007). Mobile tools offer affordances for each of these functions,

such as goal settings, progress dashboards, and repeated practice, but affordances do not guarantee use (Lai & Zheng, 2018; Reinders & White, 2016). Motivation is closely tied to autonomy. Self-determination theory holds that people are more intrinsically motivated when their needs for autonomy, competence, and relatedness are met (Deci & Ryan, 2000). Immediate feedback and visible progress can support perceived competence, while choice of when and what to practise supports perceived autonomy. Dörnyei (2001) similarly identified feedback and experiences of success as strategies that maintain motivation in language classrooms.

**Digital literacy in language learning**

Digital literacy is more than operating devices. Eshet-Alkalai (2004) described it as a set of skills that includes reproducing, branching, and evaluating information, alongside social-emotional skills for online interaction. Ng (2012) proposed three overlapping dimensions: technical, cognitive, and social-emotional. The JISC (2014) framework and the European DigCompEdu framework (Redecker, 2017) add information literacy, communication, and content creation. The multiliteracies tradition also reminds language educators that meaning-making now spans multiple modes and media (New London Group, 1996). For language learners, these dimensions take concrete forms: navigating an app, judging whether an automated correction is right, selecting reliable input, and communicating appropriately online. Automated writing feedback illustrates the cognitive dimension well. Students who accept every suggestion learn less than those who evaluate feedback before acting on it (Koltovskaia, 2020), and intelligent writing assistants require teachers to address how learners use them (Godwin-Jones, 2022).

**The MALL tools in this study**

The six tools used in the study cover different skills and functions:

- Socrative: a classroom response system for quizzes with instant results for students and teachers.
- EnglishScore: a British Council app that provides a proficiency estimate and practice items.
- ELSA Speak: a pronunciation app that uses automatic speech recognition to score and correct speech. Indonesian studies report pronunciation gains and positive perceptions (Kholis, 2021; Permatasari & Lubis, 2024).
- VOA Learning English: simplified news texts and audio, offering accessible authentic input for reading and listening. Mobile reading systems that match texts to learner level have been shown to support comprehension and vocabulary (Chen & Hsu, 2008).
- Listen English Practice: graded audio lessons for listening practice. Listening development benefits from frequent, strategic exposure to varied input (Vandergrift & Goh, 2012).
- Grammarly: an automated writing evaluation tool that offers corrective feedback on grammar, mechanics, and style (Koltovskaia, 2020).

Taken together, the literature suggests that app-level benefits depend on how learners organise, evaluate, and sustain their use. This study therefore examines skills, autonomy, motivation, and digital literacy together.

## Review of Literature

**Table 1. Previous Studies on MALL, Learner Autonomy, and Digital Literacy in Language Learning**

| No | Researcher(s) (Year) | Title | Method | Key Findings | Relevance to the Present Study |
|---|---|---|---|---|---|
| 1 | Burston & Giannakou (2022) | *MALL language learning outcomes: A comprehensive meta-analysis 1994-2019* | Meta-analysis of 84 experimental studies screened from 1,144 references | MALL showed large effect sizes, but with publication bias and very high heterogeneity | Outcome claims need careful reading. The present study reports perceptions, not measured gains |
| 2 | Lai & Zheng (2018) | *Self-directed use of mobile devices for language learning beyond the classroom* | Study of university language learners | Self-directed mobile use varies along several dimensions, and its value depends on how learners perceive and organise it | Supports the finding that students used the apps independently outside class (82%) |
| 3 | Shalini Roy & Gandhimathi (2025) | *Self-directed learning for optimizing sustainable language learning via mobile assisted language learning: A systematic review* | Systematic review | Digital abilities are a condition for sustained, lifelong language learning | Underpins the importance of digital literacy in MALL use |
| 4 | Kholis (2021) | *Elsa Speak app: Automatic speech recognition (ASR) for supplementing English pronunciation skills* | Study in an Indonesian context | ELSA Speak was linked to better pronunciation and positive learner perceptions | Consistent with the speaking confidence finding (76%) among ELSA Speak users |
| 5 | Permatasari & Lubis (2024) | *Enhancing pronunciation skills in EFL students through the ELSA Speak application* | Study of EFL students in Indonesia | ELSA Speak contributed to improved pronunciation skills | Reinforces the benefit of speech recognition feedback |
| 6 | Koltovskaia (2020) | *Student engagement with automated written corrective feedback (AWCF) provided by Grammarly: A multiple case study* | Multiple case study | Students engaged with Grammarly feedback behaviourally, cognitively, and affectively to different degrees. Uncritical acceptance of suggestions is a risk | Helps explain the lower writing gains and weaker cognitive digital literacy |

## RESEARCH METHODS

### Research Design

The study used a qualitative case study design (Yin, 2018), suited to examining a contemporary phenomenon in its real setting. The case was the integration of six MALL tools into three TOEFL preparation classes during one academic semester [insert semester and year]. Questionnaire data were summarised descriptively to show how widely perceptions were shared, but the analysis prioritised qualitative data from open-ended responses, observations, and interviews (Creswell & Poth, 2018).

### Context and participants

The study took place in the English Education Department of a state Islamic university in Kediri, East Java (formerly IAIN Kediri, now UIN Syekh Wasil Kediri). Participants were 77

undergraduate students in three TOEFL preparation classes, selected through purposive sampling because they were using the target apps as part of their coursework (Patton, 2015). Students were mostly aged 20-25, had completed foundational English courses, and varied in proficiency and prior experience with learning apps. Fifteen students from the three classes were interviewed. The classes prepared students for the TOEFL ITP, which assesses listening comprehension, structure and written expression, and reading comprehension. Although the test does not assess speaking or writing directly, lecturers encouraged students to improve their speaking with ELSA Speak and to consolidate their grammar with Grammarly, because grammatical accuracy underpins the Structure and Written Expression section and both productive skills are core outcomes of the English education programme.

**Table 2. Participants and Data Sources**

| Class | Students (n) | Questionnaire respondents (n) | Observed sessions | Interviewees (n) |
|---|---|---|---|---|
| **A** | 18 | 18 | 2 | 5 |
| **B** | 30 | 29 | 2 | 5 |
| **C** | 29 | 29 | 2 | 5 |
| **Total** | 77 | 76 | 6 | 15 |

## Instruments

Three instruments were developed by the researchers and reviewed by peers for clarity and alignment with the research questions.

1. Questionnaire. Closed items on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree) covered perceived improvement in each skill, independent use, motivation, and digital skills. Open-ended items asked how students prepared for, used, and solved problems with the apps. The questionnaire was piloted with a small group of students and revised before use (Dörnyei & Taguchi, 2010). [Insert number of items and Cronbach's alpha if computed.]
2. Observation checklist. Categories covered app use per skill, engagement, independent behaviour, collaboration, troubleshooting, and observable digital skills.
3. Interview guide. Semi-structured questions asked about perceived skill change, strategies, problems and solutions, motivation, and digital skills (Kvale & Brinkmann, 2009).

## Procedure

The questionnaire was distributed online and was open for one week, with a reminder at mid-point. Six non-participant observations of about 60 minutes were conducted across the three classes while students used the apps, such as ELSA Speak for pronunciation and Socrative for in-class quizzes. After the questionnaire and observations, 15 semi-structured interviews of 20-30 minutes were conducted offline in, audio-recorded with consent, and transcribed verbatim.

## Data analysis

Qualitative data were analysed thematically using Braun and Clarke's (2006) six phases: familiarisation, initial coding, searching for themes, reviewing themes, defining and naming themes, and reporting. Codes were developed inductively and then mapped onto the two research questions. For closed questionnaire items, the percentage of respondents choosing *agree* or *strongly agree* was calculated for each item. Themes were interpreted through a sociocultural and constructivist lens in which learners build knowledge through tool-mediated activity (Vygotsky, 1978).

### Trustworthiness and ethics

Credibility was supported through triangulation of data sources and methods, member checking with selected interviewees, and peer debriefing with colleagues experienced in ELT and qualitative research (Lincoln & Guba, 1985). Students gave informed consent, were told they could withdraw at any time, and are identified only by codes (for example, S-A03 for student 3 in Class A).

## RESEARCH RESULTS AND DISCUSSION

### Research Result

The analysis produced themes for each research question and a third set of themes on constraints. Table 2 summarises the questionnaire results; the sections below explain them with qualitative evidence.

**Table 3. Students Agreeing With Closed Questionnaire Items**

| Area | Main tools | Item focus | Agree or strongly agree (%) |
|---|---|---|---|
| **Overall** | All six | MALL apps were beneficial for learning English | 88 |
| **Listening** | VOA Learning English, Listen English Practice | Listening proficiency improved | 85 |
| **Autonomy** | All six | Used the apps independently outside class | 82 |
| **Speaking** | ELSA Speak | More confident in speaking | 76 |
| **Reading** | VOA Learning English | Reading fluency and comprehension improved | 70 |
| **Writing** | Grammarly | Grammar and sentence structure improved | 68 |

### Perceived contribution to language skills (RQ1)

**Listening: varied input under learner control.** Listening received the highest agreement among the four skills (85%). Students reported that frequent use of VOA Learning English and Listen English Practice improved their understanding of spoken English in both formal and informal registers. They attributed this to the range of audio materials, which exposed them to different speakers and speaking styles, and to features that let them slow down, replay, and read along with the audio. Students felt better prepared for listening tasks outside the classroom.

**Speaking: feedback that builds confidence.** About three quarters of students (76%) felt more confident speaking after regular practice with ELSA Speak. Gains were described mainly in pronunciation accuracy and intonation, supported by immediate, word-level feedback that prompted repeated attempts. Some students also said they became more comfortable using English in conversation. They contrasted this with regular classes, where opportunities to speak are limited. Confidence, rather than measured fluency, was the main reported gain.

**Reading: graded texts and instant word support.** Seventy percent of students reported better reading fluency and comprehension. They valued the option to choose reading levels, which let them move gradually from simpler to more demanding texts. Instant access to definitions and translations of unfamiliar words was seen as speeding up vocabulary learning and reducing the effort of reading complex texts.

**Writing: awareness of recurring errors.** Writing received the lowest agreement (68%), although many students still described clear improvement. They reported writing more grammatically accurate sentences and expressing ideas more clearly. Grammarly's automated

feedback helped them identify and fix common errors, and regular writing practice made them more confident and more willing to revise on their own.

**Autonomy, motivation, and digital literacy (RQ2)**

**Autonomy: choosing, monitoring, and self-assessing.** Most students (82%) reported using the apps on their own outside class. They described feeling more independent because they could choose activities that suited their needs, track their progress, and use app feedback to judge their own performance. For example, students used Socrative to quiz themselves on grammar and vocabulary and check their understanding, and used Grammarly's feedback to find and correct errors without waiting for the lecturer.

**Motivation: visible progress and convenience.** Most students described app-based learning as more engaging and motivating. Progress tracking, instant feedback, and achievement badges gave them a sense of accomplishment that encouraged continued practice. As one student wrote in an open-ended response, *"It feels rewarding to get immediate feedback; it pushes me to keep going."* Students also valued being able to practise anytime and anywhere, which let them use free time outside class for language learning.

**Digital literacy: from operating apps to reading feedback data.** Students reported becoming more familiar with mobile app functions, managing their learning data, and working in online learning environments. Examples included taking assessments in Socrative, moving between features in ELSA Speak, and interpreting the writing analytics provided by Grammarly. Students also said they became better at solving minor technical problems themselves, which increased their confidence in using digital tools for learning. Evidence of critically judging whether automated feedback or online sources were correct was not reported.

**Constraints on MALL use**

**Unstable connectivity and app failures.** Students reported that weak or congested internet connections, especially at peak hours, interrupted access, and that some apps occasionally crashed. These interruptions caused frustration and, for some students, disengagement.

**Distraction.** Some students found it hard to stay on task because notifications and social media competed for attention. As one student put it, *"While using my phone for learning, it's tempting to check social media"*.

**Discussion**

**Skills: strongest where learners control input and get feedback**

Perceived gains followed a clear gradient: listening (85%) and speaking confidence (76%) were rated higher than reading (70%) and writing (68%). The tools behind the highest ratings share two features: learners control the input (speed, replay, subtitles) and receive immediate feedback. This pattern fits Burston's (2015) observation that rigorous MALL studies on listening, reading, and speaking consistently favoured the mobile condition, and it fits pronunciation studies of ELSA Speak in Indonesia (Kholis, 2021; Permatasari & Lubis, 2024). Speech recognition feedback has long been shown to help learners notice segmental errors they cannot hear themselves (Neri et al., 2008). Writing is the more complex skill, and automated feedback mostly addresses surface accuracy. The lower rating is consistent with evidence that the value of Grammarly depends on whether students evaluate suggestions or simply accept them (Koltovskaia, 2020). Writing instruction that uses automated tools therefore needs explicit guidance on when to accept, question, or reject a suggestion (Godwin-Jones, 2022). These results are perceptions, not measured gains. The meta-analysis by Burston and

Giannakou (2022) warns that MALL outcome claims are inflated by weak designs and publication bias. The present findings show where students *feel* the apps help, which is useful for course design, but they should be tested against pre- and post-course performance data.

**Autonomy: active in practice, thinner in planning and reflection**

Most students used the apps independently, returning to weak areas until satisfied. This is genuine self-directed behaviour in Holec's (1981) sense. Yet the evidence centres on practice and repetition, with less on planning, monitoring against goals, and reflection. This matches the review by Yang et al. (2023), which found that technology mainly supports the performance phase of self-regulated language learning. Lai and Zheng (2018) similarly showed that self-directed mobile use depends on learners' perceptions and teachers' guidance. Autonomy may therefore grow further if teachers build in goal setting and reflection, for example through weekly learning logs that draw on app dashboards.

**Motivation: competence made visible**

Students linked motivation to immediate feedback and visible progress. In self-determination terms, these features feed the need for competence, while flexible timing supports the need for autonomy (Deci & Ryan, 2000). The TOEFL requirement likely added external motivation; future studies could separate the two by comparing apps used for test practice with those used for general skills.

**Digital literacy: beyond operating apps**

Gains in digital literacy were reported mostly in operating and combining apps, which is the technical dimension in Ng's (2012) model. Cognitive skills, such as judging automated feedback or the reliability of online sources, were less evident. With generative AI now part of students' toolkits, this cognitive dimension matters more. Godwin-Jones (2024) argues that AI literacy, including knowing what automated systems cannot do, is now part of learner agency. Digital literacy should therefore be taught explicitly, not assumed to grow from app use.

**Constraints**

Connectivity problems persist even where national penetration exceeds 80%, because access and quality remain uneven (APJII, 2025). Distraction is a long-standing issue in mobile learning (Gikas & Grant, 2013; Thornton & Houser, 2005). Both point to institutional and pedagogical responses: reliable campus Wi-Fi, offline-capable content, and explicit self-regulation strategies such as focused practice blocks with notifications turned off.

**Pedagogical implications**

For TOEFL and general EFL courses, the findings suggest four practices:

1. Match each app to one skill and one routine, for example ELSA Speak for weekly pronunciation targets and Socrative for in-class checks.
2. Add a planning and reflection layer through goal setting at the start of the week and short reflections using app progress data.
3. Teach feedback literacy by modelling how to accept, question, or reject automated corrections, including those from AI tools.
4. Plan for constraints with offline options and in-class time for students with limited data access.

## CONCLUSION

This case study found that students in three TOEFL preparation classes perceived six MALL tools as helpful for all four skills, most clearly for listening and speaking confidence, where learners control input and receive immediate feedback. The tools also encouraged independent practice outside class and sustained motivation through visible progress. Digital literacy developed mainly at the operational level, while planning, reflection, and critical evaluation of automated feedback were less evident. Connectivity problems, app failures, and distraction limited these benefits. The study contributes a multi-app view of MALL in an Indonesian Islamic higher education setting and shows that skill gains, autonomy, and digital literacy are best examined together. Practically, MALL is most useful when apps are embedded in structured blended routines that include goal setting, reflection, and explicit feedback and digital literacy instruction. The limitations of this study is that it drew on one institution and one semester and did not measure proficiency before and after the course. Findings are therefore not generalisable beyond similar contexts. Further studies could (a) combine perception data with pre- and post-test scores or app analytics, (b) follow learners over longer periods, (c) test interventions that add planning and reflection to app use, and (d) examine how generative AI tools change students' feedback practices and digital literacy.

The novelty of this study lies in its context-specific examination of how multiple mobile-assisted language learning (MALL) tools support language skill development while simultaneously shaping learner autonomy, motivation, and digital literacy in English as a Foreign Language (EFL) TOEFL preparation courses. Unlike studies that primarily investigate the effectiveness of a single mobile application or focus on language achievement as the principal outcome, this study adopts a multi-dimensional perspective by examining six distinct MALL tools—Socrative, EnglishScore, ELSA Speak, VOA Learning English, Listen English Practice, and Grammarly—within an authentic higher education test-preparation context. Its contribution is the integration of language learning experiences, independent technology use, motivational factors, and digital literacy into a single qualitative case analysis, thereby extending the discussion of MALL beyond test-oriented practice toward broader learner development. Empirically, the findings illuminate how students perceive immediate feedback, adjustable audio features, accessible learning materials, and visible progress as mechanisms that support their engagement and independent learning practices. The study also identifies an important limitation in this process: although students reported developing operational digital skills, their ability to critically evaluate digital feedback and online information appeared less developed. By highlighting this distinction, the study provides a more nuanced understanding of digital literacy as a learning outcome that does not necessarily emerge from technology use alone. Furthermore, the identification of connectivity problems, application instability, and smartphone-related distractions demonstrates that the educational value of MALL depends not only on the availability of digital tools but also on the pedagogical structures in which they are embedded. Accordingly, this study contributes a context-sensitive perspective on integrating MALL into TOEFL preparation through structured blended learning, learner goal setting, self-monitoring, and explicit digital literacy instruction. These findings offer a conceptual and practical foundation for future longitudinal and performance-based investigations into the relationships among mobile technology use, learner autonomy, digital literacy, and language proficiency in EFL higher education.

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