


Chapter 10

Instructional Affordances of Mobile Technologies for Technical Vocabulary Acquisition: A Pedagogical Framework

Feng Tian

 <https://orcid.org/0009-0006-1905-3921>

*Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia,
Malaysia*

Irfan Naufal Umar

*Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia,
Malaysia*

ABSTRACT

As disciplinary literacy grows across academic and professional domains, technical vocabulary acquisition presents a major challenge in foreign languages for specific purposes (FLSP) instruction. Technical vocabulary poses particular learning challenges due to its strong disciplinary specificity, and limited occurrence in natural language input. Mobile-Assisted Language Learning (MALL) offers flexible, multimodal, and personalized support, yet how to translate its potential into effective instructional design remains underexplored. This study, based on established theories, proposes a pedagogical framework that integrates five key instructional affordances: contextualization, multimodal input, repetition, learner self-regulation, and motivational support. The framework bridges technology and pedagogy, offering design pathways for FLSP instructors and platform developers to optimize technical vocabulary learning in mobile environments.

DOI: 10.4018/979-8-3373-7508-3.ch010

1. INTRODUCTION

In the context of increasing globalization and professional specialization, the demand for languages for specific purposes has grown significantly, particularly in academic and occupational language learning contexts. Technical vocabulary, defined as domain-specific lexical items with high semantic density and contextual dependency, plays a crucial role in professional communication but is often under-represented in general language instruction. Unlike general vocabulary, technical terms are not easily acquired through incidental learning and typically require focused instruction and repeated exposure. Traditional approaches in foreign languages for specific purposes (FLSP) instruction, such as rote memorization of word lists, definitional teaching, and paper-based assessments, have been criticized for their limited capacity to accommodate individual learner needs, sustain motivation, or address cognitive overload. These limitations often result in low transferability and poor long-term retention of vocabulary. Consequently, the call for more flexible, interactive, and learner-centered vocabulary instruction has gained traction in recent FLPS pedagogy.

Mobile-Assisted Language Learning (MALL) has emerged as a promising solution to the challenges of technical vocabulary instruction. Through its affordance such as accessibility at any time and in any place, multimodal content delivery and rich interactive features, mobile learning environments offer contextualized, personalized and motivating experiences that can support vocabulary development. Recent studies have demonstrated the effectiveness of MALL in general vocabulary acquisition by improving motivation, retention, and adaptability to diverse learning paces and preferences. Features such as multimodal input, immediate feedback, and the pacing controlled by learners have been widely implemented in both classroom and extra-curricular vocabulary learning, demonstrating the pedagogical potential of mobile technologies. Despite growing interest in the application of MALL to FLSP, recent studies have highlighted its insufficient focus on long-term vocabulary retention and productive use. For instance, many existing studies emphasized receptive knowledge or short-term effects (Li & Hafner, 2022), while the role of MALL in supporting durable acquisition and transferability of technical terms remains underexplored (Koleini et al., 2024; Yüksel et al., 2022). These findings emphasize the urgent need for instructional frameworks that systematically address retention and contextual application of technical vocabulary in complex domains such as chemistry, engineering, etc. (Xodabande et al., 2024). Therefore, the systematic application of MALL in the teaching of technical vocabulary remains underdeveloped, especially at the level of instructional design. Given the highly specific and context-bound nature of technical terms, their acquisition requires carefully structured input, task-based learning, and efficient management of cognitive load. This highlights the need to

28 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/instructional-affordances-of-mobile-technologies-for-technical-vocabulary-acquisition/392395

Related Content

Designing Scalable Location Based Games that Encourage Emergent Behaviour

Kate Lund, Mark Lochrie and Paul Coulton (2012). *International Journal of Ambient Computing and Intelligence* (pp. 1-20).

www.irma-international.org/article/designing-scalable-location-based-games/74367

Analysis of the Effect of Human Presence on a Wireless Sensor Network

Ben Graham, Christos Tachtatzis, Fabio Di Franco, Marek Bykowski, David C. Tracey, Nick F. Timmons and Jim Morrison (2011). *International Journal of Ambient Computing and Intelligence* (pp. 1-13).

www.irma-international.org/article/analysis-effect-human-presence-wireless/52036

Sustainable Cities: A Pathway to Achieving UN Sustainable Development Goal 11

Gargee Gavhane, Atharva Saraf, Alishba Siddiqui, Susanta Das, Rebika Singh, Kamaljeet Kaur Siddhu, Nishakant Ojha and Rakesh Kumar Jain (2025). *Ethical Impacts of Using AI for Sustainable Development* (pp. 217-248).

www.irma-international.org/chapter/sustainable-cities/379484

Mining Matrix Pattern from Mobile Users

John Goh and David Taniar (2006). *International Journal of Intelligent Information Technologies* (pp. 37-67).

www.irma-international.org/article/mining-matrix-pattern-mobile-users/2396

Educating Healthcare Professionals on AI in Alzheimer's Disease

Shweta Sharma, Shavez Mansoori, Manu Goyal, Kanu Goyal and Parul Sharma (2024). *AI-Driven Alzheimer's Disease Detection and Prediction* (pp. 372-388).

www.irma-international.org/chapter/educating-healthcare-professionals-on-ai-in-alzheimers-disease/353426