Digitalization of Mandarin Learning in Vocational Higher Education: Trends and Challenges from a Preliminary Study at Universitas Padjadjaran

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INTRODUCTION

Digitalization has rapidly reshaped language education, especially with the global shift to online and hybrid learning during the COVID-19 pandemic. Mandarin, as a tonal and logographic language, poses unique instructional challenges, such as mastering pronunciation, tones, and Hanzi character formation, which require multimodal and interactive strategies.

Theoretical perspectives support this need. Mayer's (2001) Cognitive Theory of Multimedia Learning highlights that learners better retain information when text and visuals are integrated, critical in helping Mandarin learners link sound, tone, and characters. Similarly, Warschauer (2000) emphasizes that digital tools promote autonomy and interaction, key elements in second language acquisition.

Despite these advantages, digital Mandarin instruction in Indonesian vocational higher education remains limited and often misaligned with industry-specific communication needs. A 2022 national survey by PPBA found that fewer than 30% of vocational language lecturers used digital resources tailored to workplace contexts. This study investigates how lecturers at Universitas Padjadjaran's Chinese Language and Culture program integrate digital tools into their vocational Mandarin teaching, aiming to uncover current practices, challenges, and innovation opportunities.

LITERATURE REVIEW

- Digital Language Learning: Warschauer (2000) posits that technology enhances interactivity, accessibility, and personalization in language education.
- Vocational Mandarin: Chen & Wang (2018) assert that Mandarin learning in vocational education must emphasize industry-relevant contexts and communication functions.
- Multimedia Tools: Mayer's Cognitive Theory of Multimedia Learning (2001) highlights how the integration of text, audio, and visuals improves foreign language comprehension.
- Mobile Learning Applications: According to Zhang (2021), mobile-assisted language learning (MALL) tools allow for more flexible, student-centered engagement with authentic content, improving motivation and retention.
- Task-Based Learning with Technology: Liu & Chu (2010) emphasize the importance of aligning digital tools with task-based language learning approaches to simulate real-world language use, particularly in professional domains.

METHOD

This study employed a mixed-methods explanatory approach. It began with a quantitative survey distributed via a structured Google Form, followed by qualitative narrative analysis of open-ended responses. Additionally, semi-structured interviews were conducted with participating lecturers to gain deeper insights into their experiences and perceptions of digital Mandarin instruction.

The participants were five lecturers teaching Mandarin in vocational programs at Universitas Padjadjaran. The research instrument consisted of 15 closed-ended questions, 5 open-ended questions, and an interview focusing on media usage, effectiveness, pedagogical challenges, and the relationship between digital tools and language skills development.

The number of participants was represent the full teaching staff involved in Mandarin instruction at the program level. Therefore, their responses provide a credible depiction of the current state and challenges of digital Mandarin learning in vocational higher education.

FINDING AND DISCUSSION

- **Trends in Digital Media Usage**
  Lecturers reported that digital media tools significantly support Mandarin instruction, particularly for teaching Hanzi characters and tonal pronunciation (75%). About 63% use digital tools at least once a week, with 50% noting their relevance to vocational contexts. Common platforms include LMS Live Unpad and Zoom (used by 100% of respondents), YouTube and Google Docs (75%), Quizizz (75%), Du Chinese and Pleco (50%), as well as Skritter and Chinese Stroke Order Dictionary (25%).
- **Skill-Based Media Analysis**

  ***- Listening (听力 - Tīnglì)*:** YouTube videos and audio files uploaded to Google Drive supported listening comprehension tasks. Digital resources such as Du Chinese and ChinesePod enhanced students' comprehension of spoken Mandarin, particularly in vocational communication scenarios.

  - Speaking (口语 - Kǒuyǔ): Students created paired dialogue videos simulating workplace situations (e.g., service interaction), which were uploaded to LMS or YouTube for instructor feedback.

  - Reading (阅读 - Yuèdú): Pleco and Du Chinese facilitated vocabulary acquisition and reading tasks. Students annotated passages and answered comprehension questions.

  - Writing (写作 - Xiězuò): Skritter and Chinese Stroke Order Dictionary enabled students to practice character formation, while Google Docs supported collaborative writing of practical texts like emails or memos.

  - Grammar and Sentence Structure (语法 - Yǔfǎ): HSK Online and Quizizz provided grammar practice through interactive quizzes.

FINDING AND DISCUSSION

- **Key Challenges and Opportunities**

Digital tools have positively impacted Mandarin learning by increasing flexibility, access, and student motivation. Multimedia platforms and mobile apps proved especially effective for developing listening, reading, and grammar skills.

Nevertheless, significant challenges remain. Current media tools often fall short in supporting spontaneous speaking practice and handwritten character development. Approximately 50% of lecturers cited issues such as poor internet connectivity and low student engagement. Moreover, the limited availability of vocational-specific Mandarin content and a lack of digital pedagogy training for lecturers constrain instructional quality.

To overcome these barriers, suggested innovations include integrating AI-based speech assessment tools, designing workplace simulation modules in Mandarin, and developing vocational video resources. Enhancing institutional support through targeted training and localized content development will be crucial to realizing the full potential of digital Mandarin learning.

CONCLUSION

Digital technology has significantly enhanced Mandarin learning in vocational higher education, enabling greater accessibility, interactivity, and learner autonomy. Tools such as LMS Live Unpad, YouTube, and specialized apps like Du Chinese and Skritter have contributed to the improvement of listening, reading, writing, and grammar skills.

However, challenges persist in areas requiring spontaneous verbal interaction and handwriting practice. The lack of context-specific materials and limited digital teaching competencies among instructors further hinder effective implementation.

Moving forward, a more integrated approach—combining digital innovation with professional development and curriculum alignment—can bridge these gaps and better equip students with the language competencies required in vocational settings.

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