

The Role of Video-call Technology in L2 Speaking Education: Research Trend and the
Lens from Test-takers and Teachers

by

Qianru LI

Doctor of Philosophy in Education

2024



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PREVIEW

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Author's right 2024 by
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Abstract

Video-call (VC) technology is important in maintaining synchronous interaction when the conventional face-to-face (F2F) mode is not feasible during the global health pandemic. Situated in the second language (L2) speaking education, the use of VC technology has been adopted in both assessment and instruction in response to the outbreak. Due to the less frequent use of VC technology in L2 speaking education prior to the pandemic, limited studies have focused on its use in assessment and instruction. However, test-takers have practical experiences in attending VC speaking assessments and teachers have first-hand experiences of VC-based speaking instruction during this period. Their opinions are important for the upcoming arrangements of L2 speaking test mode and the continuous use of VC in online L2 speaking instruction. To address these research gaps, the current doctoral research adopted three research methods including bibliometric analysis, sentiment analysis, and a mixed-method approach aiming to (i) provide a comprehensive understanding on the role of VC technology in L2 speaking education, (ii) examine test-takers' attitudes on attending VC-based L2 speaking assessment, and (iii) explore university teachers' intention and perception towards the use of VC technology in online L2 speaking instruction.

Guided by the technology-mediated oral communication assessment delivery evaluation framework for VC speaking assessment, this doctoral research has initially highlighted the growing attention on VC technology in the field of L2 speaking education with the research methods including bibliometric analysis, sentiment analysis, and a mixed-method approach. It has also contributed to a deeper understanding of how online L2 speaking assessment and instruction are perceived by both L2 test-takers and teachers respectively when utilizing VC technology. In

addition, it not only provides valuable insights for prospective L2 test-takers and speaking teachers, but also serves as a reference for test authorities and educational institutions in considering the use of VC technology in organizing online L2 speaking assessment and instruction.

Keywords: video-call technology; L2 speaking context; education; assessment; instruction; bibliometric analysis; sentiment analysis; a mixed-method approach

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Declaration

I declare that the thesis here submitted is original except for the source materials explicitly acknowledged and that this thesis as a whole, or any part of this thesis has not been previously submitted for the same degree or for a different degree.

I also acknowledge that I have read and understood the Rules on Handling Student Academic Dishonesty and the Regulations of the Student Discipline of the University of Macau.

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List of Abbreviations

Abbreviation	Term
CMC	Computer-mediated communication
F2F	Face-to-face
IELTS	International English Language Testing System
L2	Second language
TAM	Technology Acceptance Model
TOEFL	Test of English as a Foreign Language
VC	Video-call
WoS	Web of Science

Chapter 1 Introduction

1.1 Research Background

While second language (L2) speaking education has been studied extensively by educators and researchers (el Majidi et al., 2021; Gan, 2013; Iwashita et al., 2008; Woodrow, 2006), it is crucial to recognize the role that interactional competence plays in this domain (Young, 2011). Interactional competence refers to the speaking ability that a speaker presents in communication, particularly in spoken interaction and social situations (Yang, 2023; Young, 2011). In L2 speaking assessment, interactional competence is needed for test-takers to maintain turn-taking conversations with an oral examiner (McNamara, 1997; Yang, 2023). The goal of L2 speaking instruction, according to Young (2011), is to facilitate interactional competence in various speaking contexts. The dual focus of interactional competence on both L2 speaking assessment and instruction highlights its importance in the broader context of L2 speaking education. To build a virtual space that can strengthen interactional competence, computer-mediated communication tools such as chat rooms, emails, discussion bulletin boards, and video-call (VC) technology have been adopted to facilitate L2 speaking education (Lin, 2014a).

Unlike written text-based communication tools (i.e., chat rooms, emails, discussion bulletin boards), VC technology affords real-time interaction with multiple functions, such as texts, audios, and videos (Cong-Lem, 2018; Lin, 2014a). It allows L2 learners to engage in online conversations, eliminating physical barriers and resembling face-to-face (F2F) communication (Yamada, 2009). This results in a richer language-learning environment and cultivating an authentic linguistic experience (Choi, 2022; Lin, 2014b). With the enhancement of internet-based

technology and the influence of global health pandemic (Haleem et al., 2022; Kristóf, 2020), VC technology has habituated users to a new way of interaction (Koh & Lapworth, 2023) both in online L2 speaking assessment and instruction (Amelia, 2021; Pakpahan & Gultom, 2022). Although using VC technology to examine L2 speaking proficiency is innovative in allowing the testing process to become efficient (Saville & McElwee, 2022), researchers (Chen & Zhan, 2020; Ockey et al., 2019; Zhang & Isaacs, 2023) have doubted the reliability of L2 speaking assessment when using VC technology. For instance, Ockey et al. (2019) and Zhang and Isaacs (2023) claimed that inconsistent test scoring may occur because of unstable internet connection during VC speaking assessments. In addition, Chen and Zhan (2020) hesitated regarding the effectiveness of VC technology for L2 speaking instruction compared with the conventional F2F instruction. For instance, it is difficult for teachers to see each student's eye movement and maintain eye contact with students through the small size of video on the VC platform.

Regarding the role of VC technology in L2 speaking education, only two meta-analyses have been related to this research area until now. The review conducted by Lin (2014a) only included one article investigating L2 speaking performance with VC technology, while Yu (2022) included four empirical articles examining the influence of VC on L2 speaking learning. Based on the limited empirical studies included in the reviews, the status quo and trends remain unknown. As VC technology continues to influence L2 speaking education, it is imperative to acknowledge the opinions of test-takers and teachers because they are two key stakeholders (Gunn et al., 2016; Nakatsuhara et al., 2016). By incorporating their attitudes and perceptions into the research, the future development of VC technology can be aligned with the realities of assessment and instructional practice.

In terms of L2 speaking assessment, test-takers may show what aspects they consider VC technology are influencing their L2 speaking assessment. For instance, test-takers have shown their concerns about whether their speaking scores are influenced by attending different test modes (e.g., F2F and VC) and which speaking test mode helps to elicit their oral proficiency (Nakatsuhara et al., 2016, 2017a, 2021). In general, test-takers considered that attending a speaking assessment in VC test mode is more difficult than that in F2F (Nakatsuhara et al., 2016, 2017a). Examiners' nonverbal behaviors, such as body languages and facial expressions, are helpful to L2 speakers for efficiency and successful communication (Dahl & Ludvigsen, 2014). Since nonverbal behaviors cannot be fully seen when attending VC speaking assessments, these make test-takers feel nervous resulting in more preferences on attending F2F speaking assessments (Nakatsuhara et al., 2016, 2017a). However, the literature shows that test-takers' VC speaking performance was comparable to that in F2F regardless of their preferences on attending F2F or VC speaking test modes (Nakatsuhara et al., 2016, 2017a). Apart from concerns about scores in attending different speaking test modes, test-takers have sought more test timeslots to participate in speaking assessments once they are ready (Nakatsuhara et al., 2016), as well as faster reporting of scores to apply to institutions in foreign countries (Clark et al., 2021; British Council, 2024a).

Regarding L2 speaking instructional practice, teachers may reveal which functions of VC technology assist L2 speaking instruction in boosting students' engagement in class. Given the association between students' course engagement and their learning success (Dincer et al., 2012; Kusuma et al., 2021), teachers employ captivating speaking activities to arouse students' participation, such as role-play, pair-work, and group-work, in conventional F2F speaking classes (Chi & Mai, 2020;

Mulyadi et al., 2021). However, a much better students' engagement was found in speaking classes with the use of VC technology (Kim, 2023). One plausible explanation given by Kim (2023) is that the function of *breakout rooms* offers students an opportunity to engage in small group discussions with their peers while benefiting from supervision by their teachers. It thereby stimulates students' inclination to express their thoughts.

To show the research value of VC technology for L2 speaking education, a bibliometric analysis was initially designed to present the research trends over the years. In establishing the foundation for understanding the evolving realm, this analysis paved the way for more nuanced explorations. In addition, the technology-mediated oral communication assessment delivery evaluation framework supports the exploration on the VC-based speaking assessment (Ockey et al., 2019) as it influences online learning and instruction with this technology (Ockey & Neiriz, 2021). The existing empirical studies tend to use interviews and questionnaires to explore a specific group of test-takers' attitudes on attending VC speaking assessments (Craig & Kim, 2010; Davis et al., 2018; Nakatsuhara et al., 2016; Ockey et al., 2019). To explore the general attitudes of test-takers, a public social media platform was taken into consideration through the use of sentiment analysis. This can provide a new research methodology for understanding test-takers' attitudes. Finally, the existing literature in VC technology for L2 speaking instruction is scarce and teachers' opinions remains unknown (Kozar, 2016). To explore teachers' intention and perception, a mixed-method study was designed to explore how university teachers intend to use and view the functions of VC technology when instructing online L2 speaking courses.