

## Chapter 2

# Machine Translation in the Teaching and Learning of Chinese as a Foreign Language: Attitudes, Perceptions, and Uses

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### **ABSTRACT**

*Due to its rapid development and increasing availability, machine translation is now being used by an increasing number of teachers and students to facilitate their teaching and learning of second languages. This has provoked heated debate over the role of machine translation in second language education among L2 educators. This chapter sets out to provide an analytical overview of the existing body of research on this topic. It is revealed that the controversy and complexity regarding the use of MT for language education are two-fold. First of all, significant differences reside between L2 educators and L2 learners in their general attitudes to, perceived usefulness of, and actual uses of machine translation. Furthermore, among L2 teachers and L2 students respectively, the views, understandings, and uses of machine translation are also divergent.*

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## **INTRODUCTION**

Technologies can be seen as the extension of the body, senses, and capabilities of human beings (e.g., Brey, 2000; Lawson, 2010) – for instance, telescopes extend our vision, books extend our memory, and online search engines extend our capability of obtaining information. Taking this perspective, the various forms of language technologies, from online dictionaries to multilingual machine translation systems, can be understood as means of extending their users' capability of multilingual communication. Given this, the emergence of language technologies introduces new ways for people to learn and use languages, which may thus bring in profound impact on today's practices of foreign language education. The goal of today's foreign language education is to help students become "21st Century skilled learner[s]" (ACTEL, 2011, p. 3) and "productive global citizens [who] use appropriate technologies when interpreting messages, interacting with others, and producing written, oral, and visual messages" (p. 14).

Commonly termed as technology-enhanced language learning (TELL) or computer-assisted language learning (CALL), the use of technologies for language teaching and learning has received substantial attention from second language educators in the last few decades. Studies reveal that machine translation (MT) has emerged as a popular yet controversial tool in TELL practices (e.g., Briggs, 2018; Kim, 2019; Lee, 2019; Tang, 2020; Valijärvi & Tarsoly, 2019).

Machine translation, which is also known as automated or computerized translation, is the technology that use computer algorithms to generate translations of texts from one language to another (Hutchins, 2003). Today, the most prevalent examples of this technology are the freely available online machine translation services such as Google Translate. Online machine translation can be available on mobile devices, also known as mobile translation. Through this chapter, machine translation is the umbrella term to include mobile translation. In the last twenty years, the development of machine translation has gone through several significant breakthroughs and has thus resulted in considerable increase in the quality of machine-translated texts (Bowker & Ciro, 2019). Particularly, neural machine translation (NMT), a new paradigm for machine translation that predicts translation solutions on the sentence level through artificial neural networks and machine learning algorithms, was proposed in 2014 (Bahdanau et al., 2014). Subsequent empirical evidence shows that this new paradigm delivers significantly higher output quality than the previous approach, phrase-based machine translation (PBMT). So far, neural machine translation has been adopted by most MT service providers such as Google (Wu et al., 2016), Microsoft (Hassan et al., 2018), and Baidu (Zhou et al., 2016).

Due to the increasing quality and availability of MT services, this technology is now used by a substantial number of users. Google (2018) and Baidu (2020),

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