Educational Innovation Research, 2026, Volume 4, Issue 7
https://bbwpublisher.com/journal/EIR
Online ISSN: 3029-1852
Print ISSN: 3029-1844

Chinese College EFL Teacher Beliefs and Practices in Facilitating Students' Technology-Enhanced Self-Regulated Language Learning

Liuchun Yang, Jifang Li

College of Arts and Sciences Kunming, Kunming 650222, Yunnan, China

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Abstract: Digital technologies increasingly mediate self-regulated language learning (SRLL), but teacher support remains crucial. This paper reviews studies on Chinese college EFL teachers' beliefs, practices, and barriers regarding technology-enhanced SRLL. It identifies three key directions: the belief–practice discrepancy due to insufficient TPACK for SRLL; the interplay of first- and second-order barriers shaped by institutional contexts; and the scarcity of TPACK-for-SRLL research. Pedagogically, context-specific training is needed; theoretically, SRL should be contextualized within Chinese collectivist culture. The main limitation is reliance on self-reported data and a literature review. Future studies should adopt empirical designs. The paper aims to shift the focus from whether to use technology to how to foster autonomous learners in Chinese EFL classrooms.

Keywords: Technology-enhanced self-regulated language learning; Teacher beliefs; Teaching practices; Barriers; TPACK; Chinese college EFL teachers

Online publication: July 26, 2026

1. Introduction

The importance of self-regulated learning (SRL) has been widely recognized, especially in the language-learning context, and learners' SRL practices can be seen as a key indicator of their competence in mastering a foreign language efficiently [1-3]. Thanks to the rapid development of information technology, an increasing number of language learners utilize digital tools to facilitate their self-regulated language learning (SRLL), which significantly improves learning outcomes [4-6]. However, without a teacher's support, SRL is a challenging task for learners because their SRL strategies—such as planning learning objectives and reflecting on the learning process— are poor [1]. In addition, given that learning is assisted by digital tools, a teacher's role in SRLL is of great importance since students' utilization of technology in SRLL outside the classroom is highly influenced by teachers' in-class technological behaviors [7]. It has been suggested that teachers can promote students' technology-enhanced SRLL by sharing technological resources, encouraging

students to utilize these digital tools actively, and assisting students in developing the capacity to use technological resources effectively [8]. Thus, teachers' in-class practices regarding technology-assisted SRLL deserve more attention.

Given that teachers' beliefs and knowledge directly affect their practices [9], it is vital to investigate further teachers' beliefs regarding the implementation of technology-enhanced SRLL practices. A number of recent studies have researched teachers' beliefs and practices in instructing SRLL and technology-enhanced language learning, respectively [10-12]; however, studies that aim at exploring teachers' beliefs and actual practices in facilitating technology-enhanced SRLL are scarce. This is especially true in mainland China, where the utilization of digital tools in EFL teaching relies heavily on teacher-centered methods [13], which may negatively influence students' attitudes regarding technology-enhanced language learning [6,14].

As China today is urging the promotion of teachers' digital literacy and college students are increasingly open to using technological tools such as smartphones to assist their language learning, it is vital to explore teachers' beliefs and practices in the complex conditions of technology-enhanced SRLL. This research plans to review studies on teachers' beliefs and practices and propose potential research directions for facilitating SRLL with technology. The findings of the present research will provide insights for Chinese college EFL teachers that will enable them to enhance their technological proficiency in facilitating students' SRLL.

2. Literature review

2.1. Technology-enhanced SRLL

SRL refers to the practice in which learners make a purposeful and independent effort to navigate and manage their learning process [15]. According to Zimmerman [16], self-regulated learners can set their learning goals, monitor and regulate the learning process, and control their cognition, motivation and behaviors. Using technology, language learners can create their own learning environment outside the curriculum by utilizing mobile-assisted apps and platforms in SRL [6]. Given that technology has been incorporated into language education for a long time, technology-enhanced SRLL has been paid close attention to. In recent years, studies have shown that the use of mobile applications significantly facilitates language learners' SRL in various areas such as reading, writing, and vocabulary learning[][]. Previous research findings have also indicated that technology- enhanced SRLL can secure better learning outcomes and foster SRL abilities [19-20].

However, several researchers have also suggested that technology-enhanced SRLL is a relatively new phenomenon that still needs further refinement if it is to improve language learning outcomes. Recent research findings have suggested that learners' effectiveness is confined by their limited knowledge about SRLL strategies and technology use [21-22], which can be improved through their teachers' guidance and regulation [22]. Therefore, it is of great significance to research technology-enhanced SRLL by exploring the practices teachers utilize in their teaching process.

2.2. Teachers' role in technology-enhanced SRLL

According to Zimmerman [16], learners' self-regulation is teachable, which means that teachers can facilitate learners' SRLL practices if they have a deeper understanding of SRL strategies. In terms of SRLL, plenty of previous studies have confirmed teachers' positive influence in improving SRLL achievement from different aspects. Teachers can affect learners' behavioral patterns by designing classroom teaching practices based on their own SRL experiences, which can lead students to emulate these effective behaviors [23]. When learners

encounter problems in their SRL after class, it is common for learners to follow their teachers' suggestions [24]. Teachers can also promote learners' SRLL by instructing their students on key SRL strategies including goal setting and self-reflection [25].

When technology is utilized in SRLL, teachers' role in facilitating learners' SRLL has drawn more attention. When examining SRLL from students' perspectives, Lai discovered that teachers can provide various forms of support, including affective support, capacity support, and behavior support, for learners when they engage in SRLL with technology [8]. Assisted by these different forms of support, learners can gain a better understanding of digital resources and improve their out-of-class SRLL [6]. Moreover, teachers can enhance learners' affective learning by providing support and interventions for SRLL with mobile technology [26-27]. Similarly, An et al. [28] pointed out that educators play a significant role in creating a pleasant and inspiring environment in which learners can achieve higher levels of satisfaction and success in technology-assisted SRLL. Therefore, the teacher's role has been widely recognized as one of the key contributors to learners' SRLL achievement with technology. However, most of the previous studies have examined teachers' contributions from the learner's perspective; teachers' own perceptions should also be studied in order to gain insights into how to better facilitate learners' learning activities.

2.3. Teachers' beliefs and technology-enhanced SRLL

Numerous studies have shown that teachers' beliefs in educational innovations affect their teaching practices [29]. Regarding SRL, teachers' beliefs can also shape their teaching practices. Teachers who adopt positive beliefs about SRL are more likely to implement SRL-related practices in their teaching process [30]. However, some other research findings have indicated that in spite of teachers' positive beliefs about SRL, some are unwilling to instruct students in SRL strategies due to a lack of SRL-related knowledge and low confidence in their students [9]. Given these findings, it would be valuable to investigate further the specific factors that stop teachers from implementing SRLL-related practices.

When technology is integrated with SRLL, teachers' beliefs play a more complex role. As teachers can directly affect the implementation of technologies [31-33], if a technological application is not perceived as useful by teachers, they are unlikely to implement it into their teaching practices [34-36]. Specifically, teachers with different teaching beliefs tend to utilize digital tools differently. Teachers who have constructivist beliefs are inclined to use technology in a student-centered method, while those with traditional beliefs tend to apply digital tools to facilitate teacher-centered curricula [37-38]. However, in Liu [13]'s study, the findings indicated that teachers' student-centered technology use is closely related to the institutional context rather than teachers' beliefs, which deserves further investigation. Thus, one of the key concerns of this research is exploring teachers' beliefs under the condition of technology-enhanced SRLL.

2.4. Teachers' practices in facilitating technology-enhanced SRLL

As digital technology is playing an increasingly important role in EFL education, teachers are expected to implement technological tools and help learners to develop their digital literacy [35]. Hubbard [31] found that language teachers had insufficient technological training and suggested that computer-assisted language learning should be closely tied to teacher education. Hsu [14] investigated EFL teachers' technological pedagogical content knowledge (TPACK) and to what extent it affected teachers' mobile-assisted language learning (MALL) utilization. The findings indicated that teachers' TPACK was relatively low, which called for more professional training to support technology-assisted language teaching. These findings have

attracted more attention to teachers' practices and professional development in relation to technology-assisted language learning. Furthermore, other studies have also revealed that teachers use technology mainly in a teacher-centered traditional way, while student-centered technology use tends to be underdeveloped [39-40]. Given the fact that student-centered technology use can expand learning outside the classroom and enhance learners' SRLL [13, 40], teachers' practices in instructing technology-assisted SRLL should be examined more closely.

2.5. Teachers' barriers to facilitating technology-enhanced SRLL

According to Ertmer [], there are two categories of barriers that affect teachers' technology use: external factors, such as resource-related issues, are called first-order barriers, while barriers that come from teachers' internal factors, such as beliefs and perceived usefulness, belong to second-order barriers. Previous research findings have suggested that barriers to teachers' digital practices come from both external and internal factors, and several studies have distinguished the minor differences between the two. Park and Son [35] conducted a survey that compared internal factors such as beliefs and competences with external factors; the participants reported more difficulties in relation to external barriers because they had little control over these factors. However, in another study—in which external barriers had been eliminated by equipping teachers with necessary technological resources- teachers also reported insufficient support for student-centered technology use. Therefore, this finding calls for specific training for language teachers so that they can facilitate students' SRLL [13]. This finding is consistent with what Gan et al. [40] discovered in their study, in which the survey results indicated that because of a lack of specific training courses on the instruction of SRL strategies, student teachers' implementation of SRLL strategies in their teaching was hindered. By combining the findings from previous studies, it can be concluded that in the context of utilizing digital tools to facilitate learners' SRLL, investigations of the barriers teachers encounter are scarce. Thus, the proposed research aims to explore the beliefs and difficulties that impact teachers' practices when it comes to facilitating learners' technology-enhanced SRLL.

3. Discussion and conclusion

In today's China, and especially after the COVID-19 pandemic period, teachers' digital literacy is increasingly valued; therefore, it is vital to bring about further improvements in enhancing educators' digital competences [41]. Through a comprehensive literature review, the present study proposed a potential research framework for future studies on investigating Chinese college EFL teachers' beliefs, practices, and barriers regarding technology-enhanced SRLL. In general, three key directions have been identified that are worth exploring:

First, it is undeniable that there is an obvious discrepancy between teacher beliefs and practices. According to previous studies, although many teachers were positive and optimistic about cultivating learner autonomy, their practical classroom activities indicate that teachers still play a dominant role, which is largely due to their insufficient technological pedagogical content knowledge (TPACK) for SRLL [42]. Second, in terms of teachers' barriers to facilitating technology-enhanced SRLL, the first-order barriers (e.g., heavy workloads, lack of proper devices) and second-order barriers (e.g., low perceived usefulness of apps) were very common, and their interplay was influenced by context. Overall, in most Chinese colleges, the institutional assessment systems may inevitably discourage teachers from experimenting with student-centered digital tasks. Third, although extensive investigations have been done to explore teachers'

technological pedagogical content knowledge (TPACK), there were few studies that researched TPACK for SRLL, and targeted measurements should be made to conduct future studies [43].

There are two main implications for future researchers. Pedagogically, it highlights the requirements of college administrators and educators to secure sustainable and practical training on how mobile apps can be integrated into SRLL strategy instruction, especially in their specific teaching conditions. Theoretically, it extends the existing SRL literature by contextualizing it within the Chinese collectivist educational culture, where teacher authority and student autonomy often negotiate a delicate balance.

A major limitation of this research is its single data source, which is mainly self-reported beliefs and a literature review. Thus, future studies should focus more on empirical research, which incorporates classroom observations and student interviews. Ultimately, this study aims to shift the discourse from "whether to use technology" to "how to use technology to foster autonomous learners" in Chinese EFL classrooms.

To sum up, this paper shows that helping students with technology-enhanced SRLL is not just about using the right tools — it's really a teaching and even a "how we see knowledge" issue. For Chinese college EFL teachers, the way forward probably isn't to throw out traditional methods, but to rethink our beliefs and practices so that technology actually helps students take more control of their own learning. We clearly need more research in this area, and this paper is just a first step.

Disclosure statement

The author declares no conflict of interest.

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