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RESEARCH TIMELINE

The timing of corrective feedback in second language learning

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1. Introduction

The timing of corrective feedback (CF), alternatively called feedback timing, refers to the choice of a timepoint for providing corrections on second language (L2) errors or making comments on the appropriacy of L2 learners' verbal or nonverbal behaviors. A typical distinction related to the notion of feedback timing is between immediate and delayed feedback, but what constitutes immediate or delayed has been interpreted and defined in different ways. In one stream of research, immediate feedback is operationalized as feedback provided during a learning task and delayed feedback as feedback provided after a task is completed (Arroyo & Yilmaz, 2018*; Li Zhu & Ellis, 2016a*; Quinn, 2014*). One methodological variation in this distinction is interim feedback, which is provided after the first task is completed and before the second task is started (Li, Li, & Qian, under review). Interim feedback is relevant or possible when multiple tasks are performed. It refers to feedback provided during the interval(s) between tasks. Interim feedback is different from delayed feedback in that the latter refers to feedback provided after the task (if there is only one task) or all tasks (if there are multiple tasks) are completed and there is no further task performance following the feedback session. This way of conceptualizing feedback timing is based on the positioning of feedback during a task cycle, instead of the proximity to errors. Another way to examine feedback timing is to distinguish feedback provided immediately after an error is made and feedback delayed until a later time in the instructional cycle, such as one week later (Lavolette, Polio, & Kahng, 2015*). In this case, both immediate and delayed feedback can occur either during or after the completion of a learning task. A third way is to define feedback timing options in terms of their relation to instruction, namely whether feedback is provided immediately after explicit instruction or at a later stage after learners complete some practice activities (Fu & Li, 2022*). It should be clarified that this way of operationalizing feedback timing is markedly different from that in other studies in that it focuses on feedback's relation to instruction instead of errors. To conclude this section, it is necessary to point out that the conceptualization and operationalization of feedback timing should be reconsidered in L2 research. Feedback timing is not merely a matter of the length of interval or the distance between errors and feedback, and other parameters of the instructional system where errors occur are also involved or relevant, such as the distance between feedback and instruction, the positioning of feedback in a task cycle (such as within, after, or between tasks), and so on. These parameters are important because they contribute to the effectiveness of different timing options. Despite the variation in the operationalization of feedback timing, we argue that it is a unified construct that is theoretically justifiable, empirically examinable, and pedagogically valuable.

What theoretical perspectives are there on feedback timing? Most L2 theories do not make explicit claims about feedback timing, but their claims about how learning occurs support the superiority of immediate feedback over delayed feedback (Li, 2020*). According to the Behavioristic approach to L2

*Indicates full reference appears in the subsequent timeline.

learning, language learning is habit formation, and errors must be corrected immediately before turning into bad habits. Based on the Interaction Hypothesis (Long, 2015), feedback should be provided during interaction to allow learners to make an immediate comparison between the erroneous and correct forms while engaged in a communicative task. The Sociocultural Theory holds that feedback must be tailored in an ongoing fashion during the interaction between a novice and an expert. Thus, both the Interaction Hypothesis and the Sociocultural Theory (Aljaafreh & Lantolf, 1994) claim that feedback provided during interaction is more effective than feedback provided after interaction. Skill Acquisition Theory (DeKeyser, 2015) posits three stages for learning: declarative knowledge, proceduralization, and automatization. Declarative knowledge refers to knowledge about language and is obtained through instruction. Declarative knowledge is proceduralized through application of the knowledge in skill-specific practice activities and automatized through repeated practice. Feedback can be provided immediately after instruction or delayed until a later time, and in this context, feedback timing is determined in terms of feedback's proximity to instruction. It can be argued that feedback can reinforce and solidify declarative knowledge if it is adjacent to instruction, and that the effects of feedback are likely compromised if it is delayed or disjointed from instruction (Fu & Li, 2022*).

Research on feedback timing has examined the topic from the following perspectives: the impact of feedback timing options on learning gains, learner and teacher beliefs about the options of feedback timing, teachers' feedback providing practices in the classroom, and students' reactions. The research on the impact of feedback timing examines causal effects, involves systematic manipulation of instructional treatments, and administers pretests and posttests to evaluate treatment effects (Li, 2022a). These studies can be divided into several subcategories examining feedback timing in communicative tasks, L2 writing, and drill-type activities, and in terms of the relationship between individual difference factors and treatment effects. In this article, studies on beliefs, practices, and reactions are grouped together and are distinguished from studies examining the effects of feedback on learning gains. In the following sections, we provide a snapshot of the different strands of research on feedback timing before providing a timeline for the trajectory of the research.

1.1 Feedback timing in communicative tasks

Among experimental studies where communicative tasks were used, four involved face-to-face communication (Fu & Li, 2022*; Li et al., 2016a*; Quinn, 2014*; Rassaei, 2024*), three text chat (Arroyo & Yilmaz, 2018*; Henderson, 2020*; Henderson, 2021*), and one video chat (Canals et al., 2021*). One (Henderson, 2021*) investigated vocabulary learning and all other studies grammar. The operationalization of feedback timing varies between these studies. In the studies by Arroyo and Yilmaz (2018)*, Henderson (2021)*, Li et al. (2016a)*, Rassaei (2024)*, and Quinn (2014)*, feedback timing was defined as whether feedback was provided during or after communicative tasks. In Canals, Granena, Yilmaz, and Malicka (2021)*, the immediate feedback group received feedback during video chat, while the delayed feedback group received feedback 24 hours later by watching video playbacks of their own task performance where oral feedback was added as video overlays. In Fu and Li's (2022)* study, feedback timing was operationalized as whether learners received feedback while performing communicative tasks immediately after receiving grammar instruction on the target structure or at a later stage after completing some communicative tasks. Thus, in Fu and Li's (2022)* study, feedback timing was defined in terms of feedback's relation to the initial grammar instruction, and in both immediate and delayed feedback, feedback was provided during task performance. The kinds of feedback provided also varied between the studies. Corrective recasts (prompt + recast) were provided in Fu and Li (2022)*, Li et al. (2016a)*, and Quinn (2014)*; explicit correction was the corrective strategy in Arroyo and Yilmaz (2018)*, Canals et al. (2021)*, and Henderson (2021)*; and prompts were given in Rassaei (2024)*. Regarding research context, two studies (Fu & Li, 2022*; Li et al., 2016a*) were conducted in the classroom where students worked in groups and received feedback from the teacher, and other studies were carried out in the laboratory where interaction happened between a learner and a native speaker. The methodological variation of the studies may be partly responsible for some disparate findings, which are discussed below.

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The above studies showed the following findings. First, in general, immediate feedback provided during task performance is more effective than delayed feedback provided after a communicative task is completed. The researchers have attributed the advantage of immediate feedback over delayed feedback to immediate feedback's affordance of opportunities for immediate comparisons between errors and feedback and for constant application of the knowledge learned from feedback in ongoing task performance. Such opportunities are missing in delayed feedback. Second, the conclusion about the advantage of immediate feedback over delayed feedback is equivocal because some studies (Henderson, 2021*; Quinn, 2014*; Rassaei, 2024*) did not find any advantage for immediate feedback. Factors responsible for the lack of differences between the two feedback types' effectiveness include the provision of explicit instruction before the feedback treatment, the laboratory setting, ceiling effects (i.e., learners have too much previous knowledge), and salience of the linguistic target (i.e., immediate feedback works better for nonsalient structures). It is noteworthy that Henderson's (2021)* study focused on vocabulary, while other studies investigated grammar. Third, Fu and Li's (2022)* study shows that feedback immediately following instruction is more effective than feedback provided at a later stage of the instructional cycle, suggesting that feedback is likely more effective when it is closer to instruction, which may reinforce the effects of feedback. This study also suggests the importance of practice on the grounds that while learners had opportunities to practice and apply the learned knowledge after receiving immediate feedback, they did not have such opportunities in the delayed feedback condition which took place in the final treatment session. Fourth, the results should be interpreted by consulting the methodological features of the studies. The study on vocabulary learning (Henderson, 2021)* was conducted with a small sample size, with ten learners in each group, and ten targeted vocabulary items in the treatment and tests, raising concerns over the statistical power of the results and test validity. In the delayed feedback conditions of the studies based on text chat, learners were provided with a list of wrong sentences with corrections, and the extent to which they processed the feedback is uncertain – a point that also figured in the studies on L2 writing.

1.2 Feedback timing in L2 writing

Early research on feedback in L2 writing has primarily focused on its efficacy without considering feedback timing as an independent variable. This is primarily because the provision of CF in writing naturally occurs after the completion of the text, and it is often delayed until a later time. Teachers often face time constraints, as they must provide feedback to a large number of students, making immediate feedback nearly impossible.

Related to feedback timing in L2 writing is the issue of timeliness, which pertains to the interval between text completion and the delivery of written feedback. The importance of timely feedback is underscored in research on dynamic written feedback, where indirect, comprehensive feedback is delivered to regular paragraph writing (done in almost every class) completed within 10 minutes in English as a second language (ESL) college (Kurzer, 2018) and university writing classes (Hartshorn et al., 2010; Hartshorn & Evans, 2015). In dynamic feedback studies, feedback is returned to students in a timely manner – for example, in the following class period (Evans et al., 2010; Hartshorn et al., 2010). One recent study on dynamic feedback has addressed the feedback timing factor in graduate student writing (Eckstein et al., 2020)*. In the study, students in the timely feedback group received feedback biweekly throughout the 12-week course, while in the postponed feedback group feedback was delayed to the last two weeks of the semester. Analysis of grammatical accuracy, lexical and syntactic complexity, and fluency showed that timely and delayed written feedback did not significantly improve grammatical accuracy and lexical complexity. However, timely feedback enhanced fluency and syntactic complexity in writing. Based on the results of Eckstein et al. (2020)*, it can be concluded that while feedback timing may not have any effect on written accuracy, timely feedback provided in a regular, ongoing manner may enhance the linguistic complexity of graduate student writing. In Lavolette et al.'s (2015)* study, ESL students submitted their essays to an automated feedback tool either immediately or one to three weeks after completion of the writing task. No differences were found between the two feedback conditions.

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The advent of technology has made feedback timing, particularly focusing on written feedback provided during and after writing (similar to oral communicative activities), a researchable variable. A few studies have looked into the effects of synchronous and asynchronous written feedback on L2 student writing (Cheng & Zhang, 2024*; Shintani, 2016; Shintani & Aubrey, 2016*). Synchronous versus asynchronous is a distinction often used to refer to whether two events happen simultaneously in computer-mediated interaction. Applied to feedback timing, synchronous feedback refers to feedback that is provided while the writer is engaged in the writing process or composing the text, in which case the feedback is synchronized with the writing behavior. Asynchronous feedback is separate from composition and is provided after the writing task is completed. In the context of feedback timing, synchronous feedback can be considered a type of immediate feedback whereas asynchronous writing can be equated with delayed feedback. Both Cheng and Zhang (2024)* and Shintani and Aubrey (2016)* found synchronous feedback more effective than asynchronous feedback, and the advantage of synchronous feedback was ascribed to the practice opportunities learners had to apply declarative knowledge when composing new sentences, learner agency, immediacy of feedback, and engagement. The benefits of synchronous written feedback are also underscored in Shintani (2016), where English as a foreign language (EFL) university students received direct feedback asynchronously and synchronously in two separate classes. The study investigated how students utilized and responded to written feedback in the two different feedback timing conditions. Results showed that synchronous feedback promoted interaction between students and the feedback provider (the researcher in the study) during the writing process, and it facilitated noticing, internalization, and students' self-correction of errors. Students who received asynchronous feedback, in comparison, had fewer opportunities for consolidation, as they might repeat the same errors until they received postponed feedback after the writing had been completed. Another benefit of synchronous feedback, as borne out in the findings, is that students could attend to form and meaning contiguously rather than separately, as in the asynchronous condition. Overall, Shintani's (2016) study has pointed to the positive influence of synchronous feedback on the writing process and in promoting language learning.

1.3 Feedback timing in drill-type activities

Drill-type activities refer to learning activities or exercises that consist of discrete, isolated items, that are purely form-based (except for structured input activities in Henshaw's (2011)* study that were meaning-based), and that do not involve form-meaning mapping (e.g., multiple choice grammar or vocabulary exercises) (Li, 2018). In these activities, feedback is provided on students' answers either during the activity, in which case the feedback is considered immediate, or after all questions are answered, in which case the feedback is delayed. Four studies have been conducted on feedback timing in drill-type activities. Among them, two examined grammar learning and involved comprehension practice (Henshaw, 2011*; Lavolette, 2014*); two examined vocabulary learning and involved production practice (Kim & Webb, 2023*; Nakata, 2015*). All but one study consisted of a presentation or instruction stage followed by a practice stage where learners were required to retrieve knowledge learned from the instruction and received feedback on their answers. Lavolette (2014)* is the only study without pre-practice instruction. The results of the four studies are homogeneous: there is no difference between immediate and delayed feedback in their effectiveness in L2 learning. However, no conclusion can be reached based on available research because of the small number of studies and methodological issues such as small sample sizes (e.g., only ten learners in a participant group), risks for test validity (e.g., only five items in a test of treatment effects), and so forth.

1.4 Individual difference factors in feedback timing

Individual difference (ID) factors refer to learner traits, dispositions, and propensities that cause learners to vary and that are posited to have a direct or indirect impact on learning behaviours, processes, and outcomes (Li, 2024; Li et al., 2022). ID factors examined in feedback timing research include

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anxiety, declarative memory (associative memory), language aptitude, procedural memory, and working memory. Studies where immediate feedback was provided during and delayed feedback after a communicative task show the following findings. Language analytic ability, a component of language aptitude, was correlated with the effects of delayed feedback in Li et al. (2016)*, but it showed no significant effects in Arroyo and Yilmaz (2017)*. Working memory was predictive of the effects of immediate feedback in Li et al. (2019)* and Rassaei (2024)*, but it was not a significant predictor under any treatment condition in Henderson (2020)*. Fu and Li (2021, 2024)* investigated IDs' roles in feedback provided immediately after explicit instruction and feedback provided after students completed some communicative practice. They found that the effects of immediate feedback were predicted by procedural memory and working memory while the effects of delayed feedback were associated with anxiety, declarative memory, and working memory. It is worth clarifying that in both feedback conditions, feedback was provided during rather than after task performance. A recent study by Yilmaz et al. (2024)* examined the associations between associative memory, a type of declarative memory and delayed CF embedded in the video recordings of learners' task performance. The learners received recasts, explicit correction, or no feedback depending on their group assignment. Treatment effects were measured by means of an oral production test and a grammaticality judgement test. Both feedback groups outperformed the control group, and there was no difference between the two treatment groups. Associative memory was a positive predictor of the effects of the two feedback types but a negative predictor of no feedback, and the significant results were found for the grammaticality test, not the oral production test. As can be seen, IDs have a complicated relationship with treatment effects, which varies as a function of the processing demands of learning tasks. In general, analytic ability is important when there is a lack of external assistance such as explicit instruction or when there is not a requirement for production (output) (Li, 2022b); working memory plays a role in conditions where learners have a heavy processing burden (Li, 2022c); procedural memory is involved when learners try to apply explicit knowledge; declarative memory surfaces when learners engage in processing and acquiring explicit knowledge; anxiety tends to cause a negative effect when learners' anxiety is triggered by the cognitive demands imposed by a learning task such as when learners' entrenched errors are corrected via delayed feedback.

1.5 Beliefs, practices, and reactions

Li (2017)* defined feedback beliefs as "attitudes, views, opinions, or stances learners and teachers hold about the utility of CF in L2 learning and teaching and how it should be implemented in the classroom" (p. 143). Practices refer to how immediate and delayed feedback occurs in the classroom or whether teachers provide immediate or delayed feedback in their teaching. Reactions refer to affective responses after receiving immediate and/or delayed feedback. Li (2017), who synthesized all empirical evidence on learner and teacher beliefs about CF, identified only two studies examining students' preferences regarding feedback timing, and the studies showed somewhat mixed results. However, studies that examined learners' reactions to feedback treatments showed that learners favored immediate feedback instead of delayed feedback. For example, Quinn (2014)* showed that students preferred to be corrected during an activity rather than after an activity or after all activities are finished. Murphy, Mackay and Tragant (2023)* used WhatsApp – a mobile instant messaging app – to provide feedback during and after communicative tasks and found that all learners were positive about within-task feedback. Finally, students' reactions to synchronous and asynchronous written feedback seemed unclear based on available evidence. According to Cheng and Zhang (2024)*, most L2 writers in the synchronous (6 out of 8) and asynchronous (5 out of 8) groups liked the feedback they received.

On the teacher's side, Li's (2017)* aggregation of the results of six studies showed that only 40% of the teacher participants in the studies agreed with providing immediate feedback. A recent study by Yuksel, Soruç, and McKinley (2023)* revealed that teachers' ratings for immediate and delayed feedback were similar, suggesting that they did not favour either feedback type. These results, together with the results on students' preferences, seem to demonstrate that there are disparities between teachers

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and students in their preferences: while students are overall positive about immediate feedback, teachers are hesitant. However, Roothooft (2014) found that teachers' preferences depended on error type: they thought it necessary to provide immediate feedback on errors that impede communication and delayed feedback on other errors. Yuksel et al. (2023) compared teachers' feedback providing practices in the classroom and their feedback beliefs and found incongruency between what teachers claimed and what they did in the classroom. Specifically, while they did not support immediate feedback in the survey, 66% of their feedback was immediate, and delayed feedback occurred in only 34% of the cases.

Several studies have examined pre-service teachers' beliefs. However, these results should not be seen as representative of practicing teachers' beliefs, as pre-service teachers are still students in training. These studies show that similar to students, pre-service teachers mostly favour immediate feedback (Kartchava et al., 2020). One interesting finding of Kartchava et al.'s (2020) study is that participants who had taken a second language acquisition (SLA) course were more positive about providing immediate feedback than those who had not. Thus, training may have led to a stronger faith in the significance of feedback, which should be provided immediately without delay in these pre-service teachers' opinion.

One study (Rolin-Ianziti, 2010)* used conversation analysis to provide a detailed analysis of episodes where teachers provided feedback after students completed communicative activities. Thus, it examines how delayed feedback is implemented by teachers. The study shows that an episode of delayed feedback normally starts with the teacher's initiation of the error correction sequence. There are multiple ways to initiate the sequence, such as by quoting the erroneous utterance (e.g. "You said…"), asking the learner to recall the erroneous utterance without providing it (e.g. "You talked about x. What did you say?"). When quoting an error, the teacher must decide the amount of context that is restored, such as the isolated error, the whole utterance, or the erroneous utterance plus the preceding and following utterances. After the error is presented, the teacher may correct the error in multiple ways, such as by providing the correct form, encouraging the learner to self-correct, eliciting the correct form from other learners, juxtaposing the wrong and correct forms and asking the learner to make a choice (e.g., "Is it x or y?"), and so forth. The teacher may also use a hybrid strategy consisting of different forms of correction depending on the nature of the error, such as providing the correct form for new linguistic knowledge and encouraging self-corrections for previously learned linguistic forms. After the error is corrected, the teacher may move on to the next error directly or ask the learner to repeat the correct form before proceeding to the next error. Thus, one contribution of this study is the discovery that delayed feedback can be more varied, elaborate, and engaging, unlike what has happened in current experimental research, where delayed feedback normally takes the form of a list of wrong and corrected sentences or isolated single-move error correction sequences similar to what happens in a grammar exercise. The researcher concludes that overall the teacher's delayed feedback falls into two types: "teacher initiated and teacher completed correction" and "teacher initiated and student corrected". In both cases, it is the teacher who initiated the error correction sequence. The difference is that in the former case the teacher provided the answer while in the latter the teacher elicited the answer from the student. It is necessary to emphasize that this is an observational study that describes what occurs in the classroom (Li, 2022a; Li & Vuono, 2019). Classroom observation studies are invaluable in L2 research because they explore phenomena that happen in the natural state and show features and variables that can be tested in subsequent experimental research (Mao et al., 2024). Therefore, classroom observation research has high ecological validity, and it also increases the ecological validity of experimental research by making what is tested experimentally relevant to L2 pedagogy.

1.6 Categories of feedback timing research

A. Feedback timing in communicative tasks

1. Face-to-face oral interaction

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2. Text chat
3. Video chat

3. B. Feedback timing in L2 writing
1. Synchronous vs. asynchronous written feedback
2. Immediate vs. delayed feedback
3. Timeliness of feedback

C. Feedback timing in drill-type activities
1. Grammar
2. Vocabulary

D. Beliefs, practices, and reactions
1. Beliefs
2. Practices
3. Reactions

E. Individual difference factors in feedback timing

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Year	Reference	Annotation	Theme
2010	Rolin-Ianziti, J. (2010). The organization of delayed second language correction. *Language Teaching Research*, 14(2), 183–206. https://doi.org/10.1177/1362168809353874	This study is the first that examined how teachers provide feedback after a communicative activity (also see Li et al., 2016; Quinn, 2014). The study used conversation analysis to demonstrate the "nitty-gritty" of the dynamics of correction episodes in delayed feedback, providing valuable insights into various options that teachers may adopt in the L2 classroom and that researchers may empirically investigate in experimental research. In existing research on feedback timing, the way delayed feedback is operationalized is similar to item-based grammar exercises, which may have contributed to the lesser effects of delayed feedback compared with immediate feedback because it may cause low learner engagement.	**D2**
2011	Henshaw, F. G. (2011). Effects of feedback timing in SLA: A computer-assisted study on the Spanish subjunctive. In C. Sanz & R. P. Leow (Eds.), *Implicit and explicit language learning: Conditions, processes, and knowledge in SLA and bilingualism* (pp. 85–100). Georgetown University Press.	This is the first study that investigated feedback timing as an independent variable that may affect learning outcomes. (Note that the above study by Rolin-Ianziti (2010) is an observational study that described what happened in the classroom instead of examining treatment effects). This study examined feedback timing in drill-type exercises. Other key studies involving drill-type exercises include Nakata (2015), Kim and Webb (2023), and Lavolette (2014). One hundred and two fourth-semester university Spanish learners were divided into four groups: immediate feedback, end of test (practice session) feedback, 24-hour delayed feedback, and no feedback. The target structure was the Spanish subjunctive. Learners received explicit instruction followed by structured input (processing instruction) and item-based practice where they received metalinguistic feedback on wrong answers to binary choice practice items. The study failed to find any differences between feedback types but a significant effect for feedback was found in comparison with the control group. One major limitation is that the test included only five target items. Also, only students scoring less than 25% (chance level for guessing on multiple choice tests) were included.	**C1**
2014	Lavolette, E. (2014). *Effects of feedback timing and type on ESL grammar rules*. [Unpublished Ph.D. dissertation]. Michigan State University.	This dissertation study was conducted in the same year as Quinn's (2014) dissertation study, but they used different methods. This study involved multiple choice questions, while Quinn's study used communicative tasks. One hundred and twelve ESL learners with diverse first language (L1) backgrounds and L2 proficiency were divided into four groups based on whether they received item-based or end-of-test feedback and whether feedback was combined with metalinguistic information. They answered multiple choice questions on English article use in two identical treatment sessions. Overall item-based feedback was more effective than end-of-test feedback, but the differences were nonsignificant and effect sizes small. Another drill-type study that failed to find significant effects for feedback timing is Nakata (2015), which investigated vocabulary learning.	**C1**
2014	Quinn, P. (2014). *Delayed versus immediate corrective feedback on orally produced passive errors in English*. [Unpublished Ph.D. dissertation]. University of Toronto.	This is the first large-scale experimental study that examined the comparative effectiveness of immediate and delayed feedback in communicative tasks. The study failed to find any significant differences between the participant groups. The lack of significant results may be due to pre-treatment explicit instruction, ceiling effects, the laboratory setting, and the provision of delayed feedback between communicative tasks rather than after the completion of both tasks. Both **Quinn** (2014) and Li et al. (2016) investigated feedback timing in oral communication, but a major difference is	**A1, D3**

		that Quinn's study was a laboratory study while Li et al.'s study was conducted in the classroom.	
2014	Roothooft, H. (2014). The relationship between adult EFL teachers' oral feedback practices and their beliefs. *System*, 46, 65–79. https://doi.org/10.1016/j.system.2014.07.012	**Roothooft** compared teachers' feedback beliefs and their feedback providing practices (also see Li, 2017; Yuksel et al., 2023). The study showed many inconsistencies between what teachers claimed they normally did and what they actually did in the classroom in terms of the use of CF. Feedback timing is not a focus of the study, but two teachers distinguished errors that need to be addressed immediately (those interfering with communication) and errors that can wait, suggesting teachers' consideration of error types when making decisions on whether to provide immediate or delayed feedback.	**D1, D2**
2015	Lavolette, E., Polio, C., & Kahng, J. (2015). The accuracy of computer-assisted feedback and students' responses to it. *Language, Learning, & Technology*, 19(2), 50–68. https://doi.org/10125/44417	This study examines immediate and delayed feedback in L2 writing, with the former referring to feedback provided immediately after the completion of a writing task and the latter to feedback provided 1–3 weeks after completion of the writing task. The students submitted their essays to a software tool that provided metalinguistic feedback on the nature of their errors. They then revised their essays and resubmitted one or two revisions. No differences were found between the two participant groups. The study is not strictly experimental, and the results are subject to confounding variables such as different lengths of delay, different writing topics, and lack of pretests and posttests. The other two studies on feedback timing in L2 writing are Cheng and Zhang (2024) and Shintani and Aubrey (2016), both of which examined synchronous and asynchronous written CF. A study that adopted a similar (but not identical) design as **Lavolette et al.** (2015) is Eckstein et al. (2020).	**B2**
2015	Nakata, T. (2015). Effects of feedback timing on second language vocabulary learning: Does delaying feedback increase learning? *Language Teaching Research*, 19(4), 416–434. https://doi.org/10.1177/1362168814541721	**Nakata**'s study is the first study that examined feedback timing in drill-type vocabulary exercises (also see Kim & Webb, 2023). Ninety-eight high school Japanese EFL students were divided into four groups based on the number of times they practiced the target items: 1, 3, 5, and 7. The treatment consisted of a presentation stage where learners were provided with word definitions, followed by practice where they typed out English translations of L1 words. Feedback was given either immediately after each item or at the end of a practice session. Feedback included L1–L2 pairs and learner's response. Each retrieval phase was followed by a review session to control for lag-to-test. Two tests were used to measure treatment effects: a receptive test (English to Japanese) and a productive test (Japanese to English). Immediate, 1-week delayed, and 4-week delayed posttests were administered. No significant differences were found between the treatment conditions. The study had small group sizes (approximately ten in each group) and a small number of treatment items (eight for each feedback type), and a review session at the end of each practice session – factors that were likely responsible for the lack of significant between-group differences.	**C2**
2016	Li, S., Zhu, Y., & Ellis, R. (2016a). The effects of the timing of corrective feedback on the acquisition of a new linguistic structure. *Modern Language Journal*, 100(1), 276–295. https://doi.org/10.1111/modl.12315	**Li et al**. (2016a) is the first study investigating the impact of feedback timing in the classroom, a setting that is different from the laboratory settings in Nakata (2015), Quinn (2014), and Arroyo and Yilmaz (2018). This study involved 120 eighth-grade EFL learners divided into four groups: immediate feedback, delayed feedback, task only, and control. The treatment groups performed two dictogloss tasks where they listened to a narrative presented by the teacher, worked in pairs to practice retelling the narrative, and were called on to report to the whole class. The two immediate	**A1**

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Year	Reference	Annotation	Theme
		feedback groups received corrective recasts on their wrong use of the English passive voice, the target structure. The delayed feedback group received feedback after completing the two tasks. The task only group performed the tasks without receiving any feedback. Finally, the control group only took the pretests and posttests. Treatment effects were measured by using an elicited imitation test and a grammaticality judgement test. The results showed an advantage for immediate feedback over delayed feedback on the grammaticality judgement test, but there were no effects on the elicited imitation test.	
2016	Li, S., Ellis, R., & Shu, D. (2016b). The differential effects of immediate and delayed feedback on learners of different proficiency levels. *Foreign Languages and Foreign Language Research*, 286(1), 1–15.	This study examines whether the effects of immediate and delayed feedback vary as a function of overall L2 proficiency. The study is based on the same larger project as Li, Zhu, and Ellis (2016a), which is annotated above. In this study, the learners were divided into high and low proficiency levels based on the median of the learners' midterm exam scores. The results showed that immediate feedback was effective for the low-proficiency learners but delayed feedback was not, and that the two types of feedback were equally effective for the high-proficiency learners. The results further showed that the mere performance of communicative tasks (with no feedback) was more effective than the control condition at the high proficiency level. This study shows the importance of learner proficiency when making decisions on feedback timing. For example, for low-proficiency learners, it is advisable to provide immediate feedback instead of delayed feedback. For high-proficiency learners, both feedback types are effective, but given the disruptive nature of immediate feedback, delayed feedback is ideal.	**A1**
2016	Shintani, N., & Aubrey, S. (2016). The effectiveness of synchronous and asynchronous written corrective feedback on grammatical accuracy in a computer-mediated environment. *Modern Language Journal*, 100(1), 296–319. https://doi.org/10.1111/modl.12317	Similar to Cheng and Zhang (2024), **Shintani and Aubrey** (2016) investigated synchronous and asynchronous feedback. Sixty-eight Japanese university EFL learners were divided into three groups including two treatment groups and one control group. The learners received direct correction during the composition process via Google Docs or 10 minutes after the completion of the writing task. Treatment effects were measured using text reconstruction tasks where learners listened to an audio recording and retold what happened in the audio. Synchronous feedback was found to be more effective than asynchronous feedback, and the difference was attributed to the practice opportunities in the former condition to apply declarative knowledge when composing new sentences. The researchers reported the process aspects of the treatment including how learners progressively reduced the number of errors and the amount of assistance required to correct an error in synchronous feedback.	**B1**
2017	Arroyo, D., & Yilmaz, Y. (2017). The role of language analytic ability in the effectiveness of different feedback timing conditions. In L. Gurzynski-Weiss (Ed.), *Expanding individual difference research in the interaction approach: Investigating learners, instructors, and other interlocutors* (pp. 71–97). John Benjamins.	This study is based on the same larger project as Arroyo and Yilmaz (2018), which is described below. It explores the role of language analytic ability measured via the LLAMA_F test, a test battery for language aptitude, in immediate and delayed feedback on learners' errors committed during Skype text chat. The study did not find a significant correlation between language analytic ability and treatment effects in any treatment condition. This finding is different from Li et al. (2019) who found a significant role for language analytic ability in delayed feedback and task only. The disparity may have to do with the methodological features of the two studies such as the research context (lab vs. classroom), different linguistic structures (Spanish gender agreement vs. English passive voice), different feedback types (explicit correction vs. hybrid feedback (prompt + recast)), and so forth.	**A2, E**

2017	Li, S. (2017). Student and teacher beliefs and attitudes about oral corrective feedback. In H. Nassaji & E. Kartchava (Eds.), *Corrective feedback in second language teaching and learning* (pp. 143–157). Routledge.	This is a research synthesis of empirical evidence on teacher and learner beliefs about various aspects of CF, such as whether feedback should be provided, who should provide feedback (teacher, peer, or self), when feedback should be provided, which errors (grammar, vocabulary, etc.) should be corrected, and what types of feedback should be provided. One striking feature of the synthesis is that it integrated meta-analysis and narrative review, encompassing both quantitative (e.g., surveys) and qualitative (e.g., interviews) evidence. Regarding feedback timing, the synthesis showed that in general students were enthusiastic but teachers were hesitant about immediate correction. Overall, there was limited research on student beliefs and more research on teacher beliefs on feedback timing. Also, teachers and students were only asked about their views on immediate feedback but not delayed feedback, so it is unclear whether they would have endorsed both. Other studies on feedback beliefs in this annotated bibliography include Kartchava et al. (2018), Roothooft (2014), and Yuskel et al. (2023).	**D1, D2**
2018	Arroyo, D., & Yilmaz, Y. (2018). An open for replication study: The role of feedback timing in synchronous computer-mediated communication. *Language Learning*, 68(4), 942–972. https://doi.org/10.1111/lang.12300	**Arroyo and Yilmaz** investigated immediate and delayed feedback during a communicative task implemented via the Skype text chat function. Forty-five university L2 Spanish and L1 English learners were divided into three groups, and the two treatment groups performed a picture description task with the interlocutor using the target structure – Spanish noun-adjective gender agreement, a non-salient, difficult structure. Two tests were given to measure treatment effects: an oral test and a grammaticality judgement test. Immediate feedback outperformed delayed feedback on the oral test, but they were equally effective on the grammaticality judgment test. The authors interpreted the results by referring to a three-component cognitive window where immediate feedback was provided during the communicative task: meaning, error, and correction. It is noteworthy that Henderson (2021) used a similar design to investigate vocabulary learning but did not find any differences between immediate and delayed feedback.	**A2**
2019	Li, S., Ellis, R., & Zhu, Y. (2019). The associations between cognitive ability and L2 development under five different instructional conditions. *Applied Psycholinguistics*, 40(3), 693–722. https://doi.org/10.1017/S0142716418000796	This study examined whether language analytic ability and working memory had differential associations with the effects of five different treatment conditions formed based on different configurations of pretask explicit instruction and CF. One group received pre-task grammar instruction; a second group received within-task feedback; a third group received both pretask instruction and within-task feedback; a fourth group received post-task feedback; a fifth group only performed communicative tasks without receiving pre-task instruction or CF. The results showed that language analytic ability was drawn upon by the group that received post-task feedback and the group that only performed communicative tasks. Working memory, on the other hand, was associated with treatment effects of the two groups that received within-task feedback. The authors concluded that language analytic ability plays a role in the absence of form-focused instruction – either explicit instruction or CF, and that the role of working memory is evident when learners are engaged in effortful information processing as a result of receiving CF during communicative tasks. The results of this study deviate from Arroyo and Yilmaz (2017; above) who found no effects for analytic ability and from Henderson (2020; below) who found no effects for working memory.	**E**
2020	Eckstein, G., Sims, M., & Rohm, L. (2020). Dynamic written corrective feedback among graduate students: The effects of feedback timing. *TESL Canada Journal*, 37(2), 78–102. https://doi.org/10.18806/tesl.v37i2.1339	This study examined the effects of dynamic written CF (WCF) on L2 graduate student writing, where WCF was provided in two feedback timing conditions throughout a 12-week semester. The first group of graduate students received biweekly WCF during the whole semester – that is, timely feedback. The second group received WCF until the last two weeks of the intervention – that is, postponed feedback. Student texts were analyzed in terms of grammatical accuracy, lexical and syntactic complexity, and fluency. The findings indicated that both timely and postponed feedback did not	**B3**

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Year	Reference	Annotation	Theme
		result in significant improvement in grammatical accuracy. However, timely feedback was found to be more beneficial in helping students enhance fluency and complexity in writing. Another study that examined immediate and delayed written CF is Lavolette et al. (2015), which showed no effects for feedback timing.	
2020	Henderson, C. (2020). *Perfect timing? Exploring the effects of immediate and delayed corrective feedback, communication mode, and working memory in the acquisition of Spanish as a foreign language* [Ph.D. dissertation]. Indiana University.	In this dissertation study that examined the effects of three independent variables – feedback timing, communication mode, and working memory (also see Li et al., 2019)) – on learning gains, 58 L2 Spanish students at a U.S. university were divided into four groups with 14–15 students in each group based on mode of communication (face-to-face (FTF) communication versus synchronized computer-mediated communication (SCMC) using text chat) and timing of feedback (immediate vs. delayed). The learners received feedback during dyadic interaction. Immediate feedback was provided during the task and delayed after task completion. In both feedback types, the learner's wrong utterance was repeated, followed immediately by a recast. They were given two tests: oral production and multiple choice. They participated in two treatment tasks with one or two days in between. Immediate feedback was more effective than delayed feedback on both oral test and multiple choice. There were no differences between FTF and SCMC, which deviates from other feedback studies that often find an advantage for text-based CMC over FTC because of the increased opportunities for noticing linguistic forms and the corrective force of feedback. Working memory was not a significant predictor in any feedback condition, which was attributed to the simple tasks used and spaced instruction – the two treatment sessions were one or two days apart. Learners' favourite CF timing was during task after a few errors, and their favourite CF type was the provision of the correct answer or preceded by a prompt; their least favourite CF type was a prompt alone. Learners reported feeling joy and excitement as well as a little anxiety during immediate feedback, but only frustration and embarrassment in delayed feedback. Other studies examining learners' reactions to immediate and delayed feedback include Cheng and Zhang (2024), Henshaw (2011), and Quinn (2014).	**A1, A2, D3, E**
2020	Li, S. (2020). What is the ideal time to provide corrective feedback? Replication of Li, Zhu & Ellis (2016) and Arroyo & Yilmaz (2018). *Language Teaching*, 53(1), 96–108. https://doi.org/10.1017/S026144481800040X	In this article, **Li** called for replication of two representative studies on feedback timing: Li et al. (2016a) and Arroyo and Yilmaz (2018), which represent classroom and laboratory contexts and FTF and computerized communication, respectively. The article started with an introduction to major theoretical models regarding the ideal time to provide CF, including the Interaction Hypothesis, Skill Acquisition Theory, Transfer Appropriate Processing, and Sociocultural Theory. All theoretical models favor immediate feedback over delayed feedback, and the two studies for replication confirmed larger effects for immediate feedback. The author then summarized each study's methods and results, followed by recommendations for replication. For Li et al.'s study, one recommendation is to add a group that receive feedback between tasks to verify the hypothesis that delayed feedback would be equally effective if learners have a chance to apply the knowledge learned from feedback, as happens in	**A1, A2**

		immediate feedback. For Arroyo and Yilmaz's (2018) study, one way proposed to replicate it is to carry out the study in a FTF mode to prevent learners from reviewing feedback provided on previous errors during the text chat, which Arroyo and Yilmaz speculated might be partly responsible for the advantage of immediate feedback. For both studies, Li recommended replicating them with several alterations, including trying another sample, investigating new variables such as learner proficiency, increasing treatment lengths, and so on.	
2021	Canals, L., Granena, G., Yilmaz, Y., & Malicka, A. (2021). The relative effectiveness of immediate and delayed corrective feedback in video-based computer-mediated communication. *Language Teaching Research*. https://doi.org/10.1177/13621688211052793	This study investigated immediate versus delayed or synchronous versus asynchronous video-based CMC (computer-mediated communication) feedback. Fifty-two L1 Spanish L2 English learners (mean age 34.6 years) partook in dyadic one-way communicative item-based picture description tasks with a native speaker in the learning of English -ing and -ed participal adjectives. They received explicit correction on their errors in the use of the target structures during the task or 24 hours later by watching video playbacks of their oral performances where oral feedback was added as video overlays. Treatment effects were measured using a grammaticality judgement test and an oral production test. No significant differences were found between the treatments, but immediate feedback showed larger effect sizes. This study demonstrates that when delayed feedback is contextualized, such as by being inserted in learners' recorded performances, it is likely as effective as immediate feedback. Cheng and Zhang (2024) and Shintani and Aubrey (2016) also examined synchronous and asynchronous feedback, but the two studies concerned written CF.	**A3**
2021	Fu, M., & Li, S. (2021). The associations between implicit and explicit language aptitude and the effects of the timing of corrective feedback. *Studies in Second Language Acquisition*, 43(3), 498–522. https://doi.org/10.1017/S0272263121000012	The focus of this study is the interaction between individual difference factors and the effects of immediate and delayed feedback (also see Henderson (2020) and Li et al. (2019)). The individual difference factors examined were implicit and explicit aptitude, purported to be responsible for unconscious and conscious L2 learning, respectively. Implicit aptitude was operationalized as procedural memory, and explicit aptitude as working memory and declarative memory. In this study, immediate feedback was provided immediately after explicit instruction, and delayed feedback was given after learners completed some communicative practice. The learners were seventh-grade EFL students, who received grammar instruction on the English past tense and subsequently performed communicative tasks and received feedback on their wrong use of the target structure. Both feedback types were provided during task performance. It was found that working memory was involved in both immediate and delayed feedback, procedural memory in immediate feedback, and declarative memory in delayed feedback.	**E**
2021	Ha, X., Murray, J., & Riazi, A. (2021). High school EFL students' beliefs about oral corrective feedback: The role of gender, motivation and extraversion. *Studies in Second Language Learning and Teaching*, 11(2), 235–264. 10.14746/ssllt.2021.11.2.4	The study found that students' beliefs about CF were influenced by individual difference factors. For example, girls were more positive about feedback than boys, and students studying for exams were more positive about feedback than those learning English to improve their communicative ability. In follow-up interviews, most students (13 out of 15) expressed their preference for immediate correction, confirming learners' overall positive attitudes toward immediate feedback found by other studies. For other studies on feedback beliefs, see Kartchava et al. (2018), Li (2017), Roothooft (2014), and Yuskel et al. (2023).	**D1**
2021			**A2**

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Year	Reference	Annotation	Theme
	Henderson, C. (2021). The effect of feedback timing on L2 Spanish vocabulary acquisition in synchronous computer-mediated communication. *Language Teaching Research*, 25(2), 185–208. https://doi.org/10.1177/1362168819832907	Building on Arroyo and Yilmaz (2018), which examined feedback timing using text chat in learning grammar, **Henderson**'s study adopted the same research design to explore whether the findings could be generalized to vocabulary learning. Unlike Arroyo and Yilmaz, who found larger effects for immediate feedback (provided during chat) than delayed feedback (provided after chat), Henderson found the two feedback types equally effective, both showing larger effects than the control condition. The study suggests that the impact of feedback timing is likely subject to the learning domain, in light of the disparity between the findings of the two studies using the same design.	
2021	Quinn, P. (2021). Corrective feedback timing and second language grammatical development: Research, theory, and practice. In H. Nassaji & E. Kartchava (Eds.), *The Cambridge handbook of corrective feedback in second language learning and teaching* (pp. 322–340). Cambridge University Press.	**Quinn**'s article (also see Li (2018)), published as a chapter in an edited volume on various aspects of CF, provided a comprehensive synthesis of the empirical research on feedback timing, and it also discussed the theoretical models on this topic. The author also identified future directions.	**A1, A2, A3, B1, B2**
2022	Fu, M., & Li, S. (2022). The effects of immediate and delayed corrective feedback on L2 development. *Studies in Second Language Acquisition*, 44(1), 2–34. https://doi.org/10.1017/S0272263120000388	This is the first study comparing the effects of immediate and delayed feedback provided at the initial and a later stage of an instructional cycle. In this study, immediate feedback occurred immediately after explicit grammar instruction and delayed feedback was provided after learners completed communicative practice. The study found immediate feedback more effective than delayed feedback, which – according to the authors – might be because immediate feedback was close to the explicit instruction. It was followed by further practice (Li et al., 2016a; Shintani & Aubrey, 2016), and errors were corrected promptly before they were entrenched.	**A1**
2022	Kiliçkaya, F. (2022). Pre-service language teachers' online written corrective feedback preferences and timing of feedback in computer-supported L2 grammar instruction. *Computer-Assisted Language Learning*, 35(1–2), 62–87. https://www.tandfonline.com/action/showCitFormats?doi=10.1080/09588221.2019.1668811	Sixty-four pre-service language teachers enrolled in a grammar class in Turkey completed four quizzes, each with ten multiple choice questions. Each item includes a short text with blanks, followed by five options. If the answer was wrong, feedback was provided. Students could choose which type of feedback to view and whether to view the feedback immediately or at the end of the quiz. Over 95% of the students chose to view feedback immediately. Furthermore, the most favored feedback was metalinguistic feedback, followed by concordance feedback (providing examples of how the structure was used), and direct feedback; the least favored was recasts. This study represents a stream of research reporting on observations on classroom practices and learner reactions (Cheng & Zhang, 2024; Murphy et al., 2023; Quinn, 2014)	**D3**
2023	Kim, S., & Webb, S. (2023). Does spaced practice have the same effects on different second language vocabulary learning activities? Fill-in-the-blanks versus flashcards. *Modern Language Journal*, 107(4), 944–964. https://doi.org/10.1111/modl.12879	In this large-scale study, **Kim and Webb** explored how L2 vocabulary learning is impacted by three variables: practice type (fill-in-the-blanks vs. flashcards), spacing of practice (no interval vs. 1-day interval), and feedback timing (immediate vs. end of session). The treatment consisted of a presentation stage and a practice stage. In the presentation stage, words were presented by providing a definition in Korean (L1), the pronunciation in the audio modality, and a sentence exemplifying its use. Spaced practice outperformed massed practice in both flashcard and gap filling conditions, and feedback timing did not make a difference. It is likely that the production practice during treatments cancelled the effects of feedback timing. This study, together with Nakata (2015) and Henderson (2021), demonstrated that feedback timing has no influence on vocabulary learning. However, as described below, Kourtali and Borges (2023) found delayed feedback more effective than immediate feedback, especially for vocabulary learning.	**C2**

2023	Kourtali, N., & Borges, L. (2023). The effects of feedback timing on L2 development in written SCMC. *Computer Assisted Language Learning,* 37(8), 1–29. https://doi.org/10.1080/09588221.2023.2171066	**Kourtali and Borges** examined the effects of immediate and delayed feedback provided to young learners (mean age = 12.75 years) on errors they made during text chat. The feedback was unfocused, unlike other experimental studies where feedback focuses on a single linguistic structure. The study found delayed feedback more effective, especially for lexical errors. This finding is different from other studies (e.g., Arroyo & Yilmaz, 2018; Henderson, 2020), most of which found immediate feedback more effective. The advantage of delayed feedback found in this study is likely because of the unfocused nature of feedback. Feedback targeting extensive errors may work better if it is provided in the post-task stage where learners can concentrate on the feedback. Delayed feedback may work particularly well for young learners who are less able to concentrate than adult learners.	**A2**
2023	Murphy, B., Mackay, J., & Tragant, E. (2023). 'Ok I think I was totally wrong:) new try!': Language learning in WhatsApp through the provision of delayed corrective feedback provided during and after task performance. *The Language Learning Journal*, 51(4), 491–508. https://www.tandfonline.com/action/showCitFormats?doi=10.1080/09571736.2023.2223217	This is a small-scale (n = 10) exploratory classroom study (also see Rolin-Ianziti, 2010) on feedback timing in mobile instant messaging using WhatsApp. The primary objective was to explore students' affective reactions to feedback received during tasks or after all tasks were completed. Students were interviewed about their reactions. They were overwhelmingly positive about within-task feedback and negative about post-task feedback. The study exemplifies the possibility and options in using instant messaging to provide feedback.	**A2, D3**
2023	Yuksel, D., Soruç, A., & McKinley, J. (2023). The relationship between university EFL teachers' oral feedback beliefs and practices and the impact of individual differences. *IRAL*, 61(2), 387–414. https://doi.org/10.1515/iral-2021-0051	The study involved 51 experienced EFL teachers who were asked to rate various aspects of CF based on their beliefs (also see Ha et al., 2021; Kartchava et al., 2018; Li, 2017). They were also observed on their feedback-providing practices in their teaching. Their ratings and feedback providing practices were then compared to determine whether they were consistent. Consistency was found in the necessity of feedback (i.e., teachers who claimed feedback was important also provided more feedback in the classroom), correction of grammar errors, and explicitness/implicitness of feedback. However, there were no correlations between teachers' beliefs and their classroom practices in terms of feedback timing. The teachers rated immediate and delayed feedback as equally important but, in the classroom, they provided more immediate feedback than delayed feedback (66% vs. 34%).	**A2, D1, D2, E**
2024	Cheng, X., & Zhang, L. (2024). Investigating synchronous and asynchronous written corrective feedback in a computer-assisted environment: EFL learners' linguistic performance and perspectives. *Computer Assisted Language Learning*, 1–30. https://www.tandfonline.com/action/showCitFormats?doi=10.1080/09588221.2024.2315070	This is the second study on the comparative effectiveness of synchronous and asynchronous feedback in L2 writing. The first such study is Shintani and Aubrey (2016). In both studies, synchronous feedback was provided while the L2 writers were composing their essays via an online synchronization tool such as Google Doc, and asynchronous feedback was provided after the writing task was completed. The outcome variables of the two studies are different—while Shintani and Aubrey focused on the English hypothetical, **Cheng and Zhang** did not focus on a particular linguistic target. Similar to Shintani and Aubrey's study, this study found a larger effect for synchronous feedback. These two studies demonstrate how synchronous feedback can be provided in writing and show the superiority of this type of feedback to delayed feedback, which has dominated the research on written feedback.	**B1, D3**
2024	Fu, M., & Li, S. (2024). The associations between foreign language anxiety and the effectiveness of immediate and delayed corrective feedback. *Foreign Language Annals*, 57(1), 201–228. https://doi.org/10.1111/flan.12708	**Fu and Li** found that foreign language anxiety was negatively predictive of the effects of delayed feedback but not immediate feedback. In this study, immediate feedback was provided immediately after learners received grammar instruction and delayed feedback after completing some communicative practice (also see Fu & Li (2022)).	**E**

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Year	Reference	Annotation	Theme
		Negative associations of anxiety with delayed feedback were speculated to be caused by the greater amount of anxiety incurred through the delay of feedback.	
2024	Rassaei, E. (2023). Immediate vs. delayed prompts, individual differences in working memory, and L2 development. *Language Awareness*, 33(3), 649–672. https://doi.org/10.1080/09658416.2023.2291040	**Rassaei** examined the comparative effectiveness of immediate (provided during a communicative task) and delayed (provided after a task is completed) feedback and working memory's associations with their effects. The design is similar to Li et al. (2016), except that the feedback was implemented as prompts in this study but as corrective recasts in Li et al.'s study. The study failed to find any difference between the two feedback types. Working memory was a significant predictor of immediate feedback but not delayed feedback, similar to Li et al. (2019).	**A1, E**
2024	Li, S., Li, J., & Qian, J. (under review). What is the ideal time to provide corrective feedback? An approximate replication of Li, Zhu, & Ellis (2016).	This study was a partial replication of Li et al. (2016a), the purpose being to verify the hypothesis that the advantage of immediate feedback over delayed feedback found by Li et al. was due to the practice opportunities available in the immediate feedback condition where feedback was provided in the ongoing task. The practice opportunities were missing in the delayed feedback condition because feedback was provided after communicative tasks were completed and feedback was not followed by further task performance. In the replication study, a third feedback condition called interim feedback was added where learners received feedback between two tasks. The hypothesis was that interim feedback would be as effective as immediate feedback and more effective than delayed feedback because learners would be able to practice the knowledge learned from the interim feedback in the second task. The results confirmed this hypothesis: interim feedback was found to be more effective than both delayed and immediate feedback.	**A1**

Note. Authors' names are shown in small capitals when the study referred to appears elsewhere in this timeline.

Shaofeng Li is Professor of Applied Linguistics at The Hong Kong Polytechnic University, where he conducts research and teaches courses on second language acquisition and language pedagogy. He received a Ph.D. in Second Language Studies from Michigan State University. Dr. Li has published on a wide range of topics including task-based language teaching and learning, corrective feedback, second language writing, research methods, meta-analysis, and cognitive and affective individual difference factors such as anxiety, motivation, language aptitude, and working memory. He is the founding editor and editor-in-chief of *Research Methods in Applied Linguistics*, the first and only journal focusing exclusively on research methods in applied linguistics. He is also the book review editor of *TESOL Quarterly*, and the co-editor-in-chief of *Digital Studies in Language and Literature*. He is included in the Stanford University list of the world's top 2% most influential scientists.

Ling Ou is Associate Professor of English in the School of Foreign Languages and Cultures, at Chongqing University, China. Her research focuses on curriculum development and language teaching. She has made significant contributions to both academic research and pedagogical innovation. She has authored a number of articles, directed six research projects, and edited 12 textbooks. Her work has been central to the university's educational reform, particularly in the area of foreign language education. She led the development of a school-based English course system and played an important role in advancing language pedagogy at the university.

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