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RESEARCH ARTICLE

# Explicit Instruction within a Task: Before, During, or After?

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## Abstract

This study addresses the effects of the timing of explicit instruction within the three phases of a task cycle (pretask, task, posttask) while considering learner's previous knowledge. Eight intact groups ($N = 165$) of French L2 university-level students (4 B1- and 4 B2-level groups) completed two tasks. Groups were formed according to previous knowledge. Three groups received explicit instruction on the French subjunctive during the pretask, task, or posttask phase of each task. The control groups completed the task without prior instruction. Participants completed an elicited imitation test and a grammaticality judgment test as pretests, immediate posttests, and delayed posttests. Results showed that explicit instruction embedded in a task facilitates the development of explicit and implicit knowledge and that the efficacy of instruction is not significantly influenced by the timing at which it is provided or by the learners' level of previous knowledge.

## Introduction

Task-based language teaching (TBLT) is a teaching approach that has been gaining ground around the world, with task-based curricula being adopted in different second language (L2) and foreign language teaching settings (East, 2012; Ellis et al., 2020). Tasks offer a communicative context in which emphasis is primarily placed on meaning and where L2 learners mobilize linguistic and nonlinguistic resources to learn a language. TBLT relies on the premise that languages are primarily acquired implicitly (Long, 2015) with the attention of learners focused on meaning while also acknowledging the potential benefits of focusing on formal elements of language. This is especially true for older learners whose capacity for implicit L2 learning may no longer be optimal (ibid.). The incorporation of form-focused instruction is a characteristic of TBLT, but the type of instruction—proactive, preemptive, or reactive—remains a contentious issue of debate. This distinction has been conceptualized along the lines of task-based language teaching versus task-supported language teaching. At one end of the spectrum, a purely task-based approach follows a curriculum consisting of unfocused tasks where there is no preplanned instruction of a specific linguistic structure.

The attention to linguistic features happens reactively and incidentally in response to students' questions or errors (Ellis, 2003) or can happen in a preemptive way during the task or at the end of the task. In this approach, tasks are selected and sequenced based on a learners' real-world needs (Long, 2015), interest (Philp & Duchesne, 2016) or familiarity with the content at hand (Prabhu, 1987). From a teaching perspective, Van den Branden (2016) questioned the existence of true examples of this approach. On the other end of the spectrum, a task-supported approach relies on focused tasks in which a specific feature (usually a grammatical notion) is taught at the beginning of a task (Ellis, 2003). Ellis (2018) maintained that proactive focus on form drawing learner attention to a particular linguistic feature that could help them perform a task is an equally valid option. This approach is comparable to the traditional presentation-practice-production methodology still widely practiced in L2 classrooms (Nassaji & Fotos, 2011) where production takes the form of a task. It draws on research indicating that explicit instruction (EI) promotes L2 learning (Goo et al., 2015; Norris & Ortega, 2000).

Given these two opposing views, teachers face a choice integrating EI and task-based language teaching (East, 2012, 2017).

## Teaching with tasks: A three-phase approach

To implement task-based teaching in the classroom, researchers have proposed several task-based methodologies involving three phases, namely pretask, task, and posttask (Ellis & Shintani, 2013; Willis & Willis, 2007). The pretask phase includes activities teachers and students can undertake before they engage in a task. Activating previous knowledge, modeling task examples, providing input, and giving learners time to plan are examples of activities that usually occur during the pretask phase. The task phase is where learners mobilize all the resources necessary to perform the task. The posttask phase is where learners demonstrate the results of their work, reflect on what they have learned, or engage in task repetition. Teachers using the three-phase task methodology while seeking to provide EI on specific linguistic features face the inevitable question pertaining to the timing of EI. Explicit instruction could occur in the pretask phase so learners can familiarize themselves with forms that are useful or essential during the task. It could also happen during the task phase to prevent or allow reaction to difficulties learners encounter with certain linguistic forms. In the posttask phase, EI can direct learners' attention to forms that they may have encountered during the task.

Most TBLT methodologists argue that instruction should be reserved either for the task phase in response to learners' errors and questions (Long, 2015) or for raising students' awareness of a certain structure (Samuda, 2001), or during the posttask phase (Willis & Willis, 2007). Willis and Willis (2007) warned against focusing on form in the pretask and task phase, arguing that learners might, as a consequence, focus exclusively on practicing the language property at hand and lose sight of the task objectives. Despite these recommendations, recent studies have suggested that teachers still prefer proactive EI that occurs during the pretask or task phases (East, 2017; Zheng & Borg, 2014). These diverging views have indicated the importance of addressing the research question pertaining to the differential effects of EI provided during each of the three phases of TBLT.

## Theoretical perspectives about the timing of explicit instruction

Even though *focus on form*, consisting of brief episodes of instruction often taking the form of corrective feedback, has been more traditionally associated with TBLT (Long,

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2015), recent publications on the topic include EI as a valid option (Ellis, 2018; Ellis et al., 2020). Explicit instruction involves the explanation of rules with or without metalinguistic comments either in a deductive or an inductive way (Norris & Ortega, 2000). It is a deliberate attempt to intervene in the process of acquisition (Ellis, 2018). As we have highlighted, EI can occur in any phase of a task. We will explore theoretical perspectives which support the benefits of EI by phase starting with the pretask, followed by the posttask, and conclude with the task phase.

Providing EI in the pretask phase may be supported by skill acquisition theory (DeKeyser, 1998, 2007) according to which learning entails a transition from declarative knowledge (e.g., knowing grammar rules) to procedural knowledge (e.g., knowing how to use the rules to perform a task) by virtue of practice. As DeKeyser (1998) explains, practice does not correspond to the mechanic behavioristic drills that result in "language-like behaviour" (p. 53) but rather to the use of language in meaningful ways. From skill acquisition theory principles, it can be argued that EI in the pretask, followed by meaning-oriented controlled exercises, contributes to the development of the initial representation of rules in a declarative format and that engaging in the task immediately after EI is given helps learners proceduralize the acquired knowledge. In other words, the task provides real operating conditions where learners can develop their procedural knowledge.

The theoretical justification for the provision of EI during the posttask draws from research on preparatory attention (N. C. Ellis, 2005; LaBerge, 1995). Hondo (2015) argues that creating a context in which a certain feature is required to solve a task might entice and nudge learners toward a particular form. Relying on James (1890), Laberge (1995) maintained that, when exposed to a certain stimulus, the brain can start preprocessing information, thus easing the effort of processing the actual stimulus when the time comes. From an L2 acquisition perspective one can infer that, when completing a certain task, learners may notice their incomplete knowledge of language, rendering them more receptive to any teaching that would help them fill the gap. In the same vein, Doughty and Williams (1998) argued that "[m]ore direct instruction should be delayed until learners have demonstrated at least some emerging knowledge of the form" (p. 255). This latter assertion finds echo in usage-based theories (Ellis & Wulff, 2015) that have postulated that learning an L2 is mainly achieved through exposure to input. By relying on their cognitive faculties, L2 learners come to make associations between the form that they perceive and its meaning. According to this theoretical approach, the relationships between form and meaning are emergent and develop over time in a dynamic and adaptive way. This theoretical position could serve to justify waiting for the emergence of initial understandings of form-meaning relationships before proceeding with EI pertaining to those relationships.

Support for EI during the task phase could be argued from the two aforementioned perspectives. In the task phase, learners have had time to familiarize themselves with the context of the task and may begin trying to convey some meaning. Accordingly, during the pretask and the beginning of the task work, learners may realize a void in their knowledge preventing them from expressing what they want to say, as per the Output Hypothesis (Swain, 2000). In this instance, and in accordance with preparatory attention, they might be more receptive to information by way of EI to fill the knowledge gap. However, contrary to the posttask phase, learners in the task phase still have time to apply the information under real operating circumstances which could intensify the proceduralization of knowledge as supported by skill acquisition theory. Lastly, even if EI cannot be considered a brief attention to form in a communicative context as focus on form is normally conceptualized, the fact that it is provided during

the task phase while the students are immersed in the communicative context where the use of a given form is particularly relevant might facilitate the acquisition of the form. They may have started to understand the meaning or function of the form while the EI stimulates their awareness of that form in accordance with the noticing hypothesis (Schmidt, 2001).

## Empirical findings

This issue of timing of instruction was raised in the late 1990s (Lightbown, 1998), but very little empirical work has been conducted since to address a research question that is of great relevance to both researchers and teachers. Spada (2019) raised this concern recently when arguing that more must be known about the impact of timing on teaching and learning. Recently, Ellis (2018) explored the timing of EI within the three phases of a task and acknowledged that "it is perhaps disappointing to conclude a chapter whose purpose is to examine the research that has investigated the impact of EI in the different stages of a task-based lesson by just pointing out the need for such research" (p. 126). Timing of instruction has been addressed either by looking at the effects of EI provided at different phases of a task (Li et al., 2016a; Shintani, 2017; Spada et al., 2014) or by evaluating the impact of immediate (within a task) and delayed (after the task) corrective feedback (Li et al., 2016b; Quinn, 2014).

### *Timing of explicit instruction*

To the best of our knowledge, no research looking at the timing of EI has compared the effects of instruction across the three timing conditions (pretask, task, posttask phases) in one single study, though some have looked at the effects of the timing of EI in specific phases of a task (before and during a task (Li et al., 2016a), or before and after a task (Shintani, 2017)).

The differential effects of the timing of EI were first investigated by Spada et al. (2014), who compared two timing conditions that they referred to as integrated and isolated instruction. In both conditions, instruction occurs in a communicative environment, with integrated instruction happening during the communicative activity and isolated instruction occurring before or after the activity. In Spada et al.'s study, adult learners of L2 English in intact groups received either isolated instruction before taking part in a communicative activity or integrated instruction while they were taking part in the communicative activity. Learning operationalized as explicit and implicit knowledge gains was measured using a written error correction task and an oral production task, respectively. Results did not show any significant differences between the two conditions. However, the integrated group showed an advantage for the development of implicit knowledge, whereas the isolated group showed an advantage for explicit knowledge as measured by both tests. Although interesting, the reported findings should be interpreted with caution because of one major methodological flaw. The experimental group conditions did not differ in terms of timing of instruction only but also in terms of the nature of the instruction that the learners had received. In fact, the isolated group completed grammatical exercises that the integrated group did not. Furthermore, the integrated group received corrective feedback, but the isolated group did not. Accordingly, it is not clear if the results can be attributed to a difference in timing of instruction or rather to differences in the way instruction was provided.

To better understand the effects of the timing of instruction, Li et al. (2016a) compared conditions in which learners received instruction at different moments of

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a task. The conditions that are relevant to the present study were: (a) EI at the beginning of a task (pretask), (b) corrective feedback during the task (within-task), (c) a group that completed only the task, and (d) a control group that did only the pretests and posttests. It is worth noting, once again, that instruction differed not only in terms of timing but also in terms of operationalization (explicit instruction vs. corrective feedback). The task consisted of two dictoglosses targeting the passive structure performed in a 2-hour period. Learning gains were assessed by a grammaticality judgment test (GJT) and an elicited imitation test (EIT) that were meant to tap explicit and implicit knowledge, respectively. For the GJT, only the pretask group outperformed the control group and almost outperformed the task-only group for the GJT ($p = .06$, $d = 0.63$ and $p = .09$, $d = 0.60$ for the immediate and delayed posttests, respectively). No significant differences between the three treatment groups were obtained in the EIT. Li et al. (2016a) also controlled for the level of knowledge of the structure by their participants and found that the learners who possessed some knowledge of the passive structure in the EI + task group outperformed the control group at both posttests of the GJT, whereas the learners with no previous knowledge did not benefit from that same instruction. This study indicated that learner previous knowledge of the structure might moderate the impact of the timing of instruction. Shintani (2017) seemed to validate that conclusion when comparing the timing of providing written explanations during a writing task. In Shintani's study, one group received EI in the form of a self-study handout explaining the rules of the feature and then performed the writing task while another group completed the task and then studied the handout for 5 minutes, after which time the learners in the second group were allowed to review their text. Learning gains were measured using an error correction test and a text reconstruction test. Results showed that the learners with no previous knowledge drew more benefit from explicit pretask instruction and that the learners with previous knowledge were best served by having access to the instruction after the task.

### *Timing of corrective feedback*

Even though EI and corrective feedback represent two different forms of instruction (the former being proactive and the latter reactive) and given the scarcity of research specifically addressing the question of timing of proactive instruction, reviewing research which focuses on the effects of the timing of CF may shed more light on the issue at hand. In terms of studies focusing on the timing of corrective feedback, Quinn (2014) was the first to address this research question in an adult L2 laboratory learning context. In this study where students engaged in three different oral tasks, one group received corrective feedback during the tasks, one group received corrective feedback after each task, and a control group simply completed the tasks. Learning was assessed using a GJT, an oral production test, and a written error correction test. No significant differences were observed between the groups. In a study on L2 learning similar to Li et al. (2016a), Li et al. (2016b) evaluated the effects of corrective feedback timing within two dictogloss tasks. While one of the two experimental groups received corrective feedback during the task, the other group received the same type of corrective feedback but at posttask phase. On the EIT, results indicated no effects for either of the two treatment groups. On the GJT, the immediate feedback group showed superior results. Similar results were obtained by Fu and Li (2022) who reported no significant differences between learners who received immediate or delayed corrective feedback during a task. However, the immediate group presented significant differences with the

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control group. In Arroyo and Yilmaz (2018), learners were involved in a computer-based spot-the-difference task during a one-on-one chat-exchange with an experimenter in a laboratory setting. Learners in the experimental groups received either immediate corrective feedback in the form of recasts or delayed corrective feedback where their errors were presented in a document with the correct answer underneath. The control-group participants only did the pretests and posttests. Results showed that the immediate group outperformed the delayed and the control groups at both posttests at an oral production test. At a GJT, both experimental groups outperformed the control group at both posttests, but there was no difference between the two groups.

In sum, it seems more advantageous to provide feedback within a task than to wait until after the task (Arroyo & Yilmaz, 2018; Fu & Li, 2022; Li et al., 2016b)

## Research questions

Not only are empirical research studies addressing the question pertaining to the effects of the timing of EI on L2 learning scarce but they are also difficult to compare because of differences in methodological choices (e.g., the way instruction is operationalized differs between and across studies). More important, this same body of research has reported contradictory results. In fact, although some studies have reported no effects for different timing conditions (Quinn, 2014; Spada et al., 2014), others have shown that the benefits of instruction depend on the time of its provision (Arroyo & Yilmaz, 2018; Fu & Li, 2022, Li et al., 2016a, 2016b). Given the limited and contradictory empirical evidence, the first research question guiding the present study was: Does the timing of EI in the pretask phase, the within-task phase, or the posttask phase affect L2 learning? Based on research results indicating that learners' level of previous knowledge seemed to mediate the differential effects of instruction provided at different moments of the task (Li et al., 2016a; Shintani, 2017), the second research question guiding this study was: Is the effect of the timing of EI moderated by learners' previous knowledge of the target grammatical structure?

## Method

### *Context*

The study took place in an English-speaking university located in the French-speaking province of Quebec, Canada. The department followed a task-based curriculum that could be described as modular, including unfocused and focused tasks (Ellis, 2018), and emphasized real-life, meaningful tasks.

### *Participants*

For the study, we recruited 165 adult intermediate level learners of French as an L2 from eight intact classes—four B1-level and four B2-level classes. Levels are determined in two different ways: returning students who took the previous level class or new students whose level was determined by an in-house placement test. Heterogenous groups are generally obtained because of these placement methods. Learners from two different levels were included to ensure some diversity in their level of previous knowledge of the target structure. Classes were taught by five different French L2 teachers. One of the participating teachers was responsible for three classes, another teacher was in charge of two classes, and the remaining three teachers were each in charge of one class.

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Participants were undergraduate students pursuing different fields of studies. They took French L2 courses on a voluntary basis as part of an elective course or a minor program for diverse reasons and came from different linguistic backgrounds. The average participant age was 20.2 years.

### Target structure

The present study targeted the French subjunctive because it is a verbal mood that normally appears in the B1 level (Howard, 2008). In the context where we collected the data, the subjunctive mood is introduced at the B1 level and is reinforced at subsequent levels. Apart from its pedagogical relevance, we chose the subjunctive mood because research had shown that its learning and usage are a challenge even for advanced L2 learners (Bartning & Schlyter, 2004). A sentence using the subjunctive contains two clauses: a matrix clause that prescribes the use of the subjunctive mood and an embedded clause where the verb has to be conjugated in the subjunctive mood (e.g., *J'aimerais que vous veniez me voir après le cours*, "I would like you to come see me after class"). The use of the subjunctive in the embedded clause may be required by a verb, a subordinating conjunction, or an adjective in the matrix clause. In terms of morphological inflexions, the subjunctive can be qualified as nonsalient. For regular verbs ending in *-er*, the subjunctive inflexion does not differ from the present tense of the indicative mood except for the first and second persons of the plural. For irregular verbs, the morphological inflexion can be perceived both at the oral and written level except for the third-person plural. The conjugation of the subjunctive follows a regular pattern (one radical with the same endings for each person and number) except for certain verbs with two radicals and verbs that do not follow a regular pattern (e.g., *avoir*, *être*, *aller*, *faire*, *pouvoir*, *savoir*). In terms of complexity, it is a feature that could be characterized as complex because of its low saliency and its communicative redundancy (DeKeyser, 2015).

### Treatment tasks

Following calls to explore tasks in classroom environments (Ellis, 2018), we took care to ensure that the materials and the interventions reflected teaching methods and behaviors to which the participants were accustomed, namely the integration of EI within a communicative task. We used two different tasks: a ranking task and a decision-making task. We made the decision to include two tasks rather than one to increase the likelihood of observing differential effects based on the intervention and to ensure that the participants who received EI in the posttask phase of the first task would have the opportunity to use that knowledge in a meaningful context at least once. We recognize that having two tasks might influence the overall timing where posttask instruction in the first task might be considered pretask instruction for the second. To attenuate this possibility, we chose two tasks dealing with two different topics and students did not know at the start of the second task that the subjunctive would be targeted. The two tasks were part of the participants' normal curriculum.

In the ranking task, the participants had to provide advice to students who would be coming to study at their university in the winter. The aim of the task was for the participants to produce a short video to be posted on a website to better prepare incoming students arriving in the winter. In the pretask, the participants were invited to share their personal experiences regarding winter and to watch a video depicting the

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experience of refugee families in the process of integrating themselves in Canada. During the task, the participants were first invited to think individually of five recommendations to include in the video. They were then asked to work in teams of four to select the five best pieces of advice to include in the video. Once this had been achieved, the participants produced the video in which they gave their advice to future students. At the posttask, videos were shown in the classroom and the participants had to vote on the best video to include on the website. The three-phase task took 80 minutes to complete.

In the second task, the decision-making task, the participants had to reach a common decision. They worked in teams of four and were asked to play the role of a student committee in charge of organizing a winter carnival to be held at the university. In the pretask, teachers first led a discussion on winter activities that the participants enjoyed. They, then, went through some pictures of an annual winter carnival, presenting some cultural information about that event. During the task, the participants were required to assess seven activity proposals and to eliminate one. At this phase, the participants were first required to develop criteria on which they would base their decision. They then read the proposals and came to an agreement on which proposal would be eliminated. Finally, the participants were required to write a report explaining their reasoning for the activity that they had eliminated. At the posttask, each team shared with the rest of the class the activity that they had eliminated.

Both tasks provided a context where the subjunctive mood was inherently useful to make recommendations and give advice (Loschky & Bley-Vroman, 1993). However, to maintain a focus on the communicative outcome of the tasks (Ellis, 2018), the teachers never told the participants that they were specifically required to use the subjunctive mood. It was presented as a useful way to express advice and recommendations (see "Teaching Material" on IRIS database). Care was taken to ensure that the participants in each group had a common understanding of the task. To make sure that the teachers respected the different experimental conditions to which they had been assigned, they were provided with all the necessary teaching materials (i.e., PowerPoint presentation and slide notes containing the talking points for each slide). We met with the teachers before and after each session to review the teaching protocol and to ensure that they operationalized the experimental conditions as we had intended. Even though some teachers did not agree to let the researchers observe the tasks, all sessions were audio-recorded. Verification of the recordings allowed to confirm that all teachers adhered to the protocol that was established, that is they respected the timing that was scheduled for each step and they followed the notes that were on the PPT slides. Table 1 illustrates all interventions that took place.

### *Experimental instruction*

To focus on the subjunctive, we favored EI of the deductive kind (Goo et al., 2015) and developed the instruction in collaboration with the teachers taking part in the research to make sure that the instruction reflected their actual teaching practices.

In the first experimental task, the EI consisted of a 15-minute presentation of the form, the meaning, and the use of the subjunctive mood. By way of a PowerPoint presentation, the teachers showed the participants sentences containing advice using the subjunctive. The teachers explained with nontechnical metalanguage the structure of the subjunctive. They also explained when to use the subjunctive and with what type

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**Table 1.** Schedule for the intervention and testing

| | Conditions | | | |
|---|---|---|---|---|
| Time | Pretask | Task | Posttask | Control |
| Day 1: Pretest | Pretests (EIT and GJT) | | | |
| Day 3: Task 1 | EI (15 min) + pretask (25 min) + Task (25 min) Posttask (15 min) | Pretask (25 min) Task (25 min) + EI (15 min) Posttask (15 min) | Pretask (25 min) Task (25 min) Posttask (15 min) + EI (15 min) | Pretask (25 min) + Comprehension questions Task (25 min) Posttask (15 min) |
| Day 5: Task 2 + | EI (7 min) + pretask (15 min) Task (20 min) Posttask (8 min) | Pretask (15 min) Task (20 min) + EI (7 min) Posttask (8 min) | Pretask (15 min) Task (20 min) Posttask (8 min) + EI (7 min) | Pretask (15 min) + discussion (7 min) Task (20 min) Posttask (8 min) |
| Posttest Day 19: Posttest | Immediate posttests (EIT and GJT) Delayed posttests (EIT and GJT) | | | |

*Note*: EIT = elicited imitation test; GJT = grammaticality judgment test; EI = explicit instruction.

of verbs (e.g., verbs expressing necessity: *Il faut que tu prennes le métro pour venir à l'école*, "You need to take the metro to go to school") and how to conjugate the verbs. They then showed the participants sentences that featured advice requiring the subjunctive. The instruction concluded with the teachers presenting 10 sentences and asking the participants to conjugate the verbs in the sentences.

The second task involved making recommendations. Because use, function, and meaning were presented in the first task, the EI for the second task was not as exhaustive and lasted approximately 7 minutes. After reviewing how to form the subjunctive, the teachers showed the participants ways to formulate recommendations in French using the subjunctive. They also presented five sentences illustrating recommendations in which the participants had to conjugate verbs in the subjunctive mode.

### *Treatment conditions*

Six intact classes received explicit grammatical instruction on the French subjunctive according to three timing conditions: the pretask phase ($n = 43$), the task phase ($n = 40$) or the posttask phase ($n = 42$). We assigned two classes to each of the three treatment conditions; two additional classes ($n = 40$), the control group, completed the tasks without receiving any EI.

In the first experimental condition, the pretask group, EI was provided in the pretask phase after the teacher had explained the objective of the tasks and led a group discussion. In the second experimental condition, the within-task group, EI was provided during the task. In this instance, the instruction occurred 7 minutes after students started the group work for both tasks which happens to be at the middle point of the whole task. Students still had time to complete the tasks afterward. In the third experimental condition, the posttask group, the teacher provided EI at the end of the posttask after the participants had completed and presented their tasks. The control group participants completed the task without receiving any EI. They instead answered comprehension questions about the video for the first task and took part in a longer discussion about winter activities for the second task.

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## Data collection tools

Research in L2 acquisition showing an advantage for instruction often includes measures tapping into explicit knowledge (Norris & Ortega, 2000). To mitigate this bias, researchers have called for including tools that measure both explicit and implicit knowledge (R. Ellis, 2005, 2015). In this study, we used an untimed GJT for the measurement of explicit knowledge and an EIT for implicit knowledge. Each test contained 32 items: 24 targeting the subjunctive and 8 distractors. Half the target items were ungrammatical. For the ungrammatical items of both tests, the verbs in the embedded clauses were conjugated in the indicative mood instead of the subjunctive (e.g., *Il faut que tu prends* l'escalier*, "You must use the stairs"). For validation purposes, we had administered earlier versions of the tests to 60 learners taking French L2 courses within the same context where we conducted the present study. The Cronbach alpha values were .91 for the GJT and .72 for the EIT.

### *Grammaticality judgment test*

In the GJT that we used to assess explicit knowledge (R. Ellis, 2005), the participants were presented with sentences targeting certain linguistic features (e.g., agreements, verb conjugation, negation) and were required to indicate whether or not the sentences were grammatical and to correct each sentence that they judged to be ungrammatical. Although it has been argued that judging grammatical versus ungrammatical sentences may tap into two different types of knowledge, recent studies (e.g., Vafaee et al., 2017) have indicated that both types of statements measure explicit knowledge. The test was paper administered.

### *Elicited imitation test*

We used the EIT to evaluate implicit knowledge (R. Ellis, 2005; Erlam, 2006; Kim & Nam, 2017) even though some recent studies have suggested that elicited imitation may assess automatized explicit knowledge (Suzuki & DeKeyser, 2015). What seems to be clear is that GJTs and EITs load on different factors (Kim & Nam, 2017) and, as DeKeyser (2017) pointed out, automatized explicit knowledge is functionally equivalent to implicit knowledge. In EITs, learners are presented with statements and are required to judge their content by indicating whether the statements are true or false or to indicate whether or not they agree with what has been stated. Deciding whether statements are true or false incites learners to focus on the meaning of the statements, reducing their chances that they would pay attention to form (Erlam, 2006). Learners are then asked to repeat the statements correctly. In this study, the statements in the EIT took the form of advice to give (e.g., *Il faut que nous recyclions les déchets*, "We are required to recycle waste"). For each statement, the participants had to indicate on an answer sheet if they agreed with the advice (i.e., if they thought it was good advice or not appropriate or relevant to the topic at hand). They were told to repeat the statement immediately in correct French, but no time limit was given. The test was administered using CAN-8 Virtual Lab (Version 3.16, 2018), language-learning software used in the computer laboratory of the university where the study took place.

## Procedures

The interventions involved four 80-minute class periods, each spanning a 4-week period (see Table 1). During the first session (Day 1), the participants first complete

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the EIT and then the GJT, which took approximately 30 minutes. The second session took place 5 days later when the participants completed the ranking task. Two days later, during the third session (Day 5), the participants completed the decision-making tasks (50 minutes), and they completed the immediate posttest (30 minutes). Two weeks later (Day 19), the participants completed the delayed posttest. All interventions and tests took place during regularly scheduled class time.

### Scoring

For the GJT, one point was given for participants identifying a target item as grammatical and one point was given for properly correcting an ungrammatical target item. Only one-half point was given for their correctly identifying a target item as ungrammatical when the correction contained an error (*J'aimerais qu'il peuve** [*puisse*] *venir à la fête ce soir*, "I would like for him to be able to come to the party tonight").

For the EIT, one point was given for participants correctly repeating a correct target item and one point was given for properly correcting an ungrammatical target item. Only one-half point was given for partially correcting an ungrammatical target item (*Il faut que tu rendisses** [*rendes*] *un bon travail*, "You must submit good work").

### Analysis

We conducted analyses of covariance (ANCOVAs) to determine the differential effects of the three timing conditions, using the pretest scores as a covariate (Tabachnick & Fidell, 2013). We performed pairwise post hoc comparisons to locate the source of difference, applying the Bonferroni correction to adjust for the number of pairwise comparisons. We calculated Cohen's *d* to estimate effect sizes, which we interpreted following Plonsky and Oswald's (2014) recommendations: small effect $\geq 0.4$; medium effect $\geq 0.7$; and large effect $\geq 1$. To assess the mediating effect of the learner's previous level of knowledge on the timing at which instruction is given, we performed regression analyses using the posttest scores as the dependent variables and the pretest scores and groups (timing of instruction) as the independent variables.

We verified all assumptions for the statistical tests and have reported the results when the assumptions were violated.

## Results

### Timing conditions

To answer the first research question, we analyzed the data to determine the overall effects of the different timing conditions. Tables 2 and 3 show the descriptive statistics for the GJT and the EIT for the three testing sessions.

As Figures 1 and 2 illustrate, we observed similar trends for the GJT and the EIT. All groups performed comparably at the pretest. By the time of the immediate posttest, the experimental groups had improved more than the control group, but the experimental groups showed a slight decline at the delayed posttest, whereas the control group had continued to improve. Looking at the performance data,[1] participants of the pretask groups used on average 5.00 (SD = 2.00) occurrences of the

[1]For more about the performance data, see Michaud (2021).

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**Table 2.** Grammaticality judgment test: Descriptive statistics for overall learning effects by group

| | | Pretest | | Immediate posttest | | Delayed posttest | |
|---|---|---|---|---|---|---|---|
| Group | *N* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Pretask | 41 | 13.10 | 5.96 | 19.81 | 3.94 | 18.05 | 4.79 |
| Task | 35 | 13.00 | 4.56 | 20.16 | 3.68 | 19.00 | 4.01 |
| Posttask | 38 | 12.41 | 5.98 | 19.09 | 4.60 | 18.91 | 4.57 |
| Control | 38 | 12.38 | 5.08 | 14.91 | 5.30 | 15.25 | 5.12 |

*Note*: Maximum score = 24. The *n*s for the GJT and EIT are not the same because some participants did not complete one or the other of the tests for a variety of reasons.

**Table 3.** Elicited imitation test: Descriptive statistics for overall learning effects by group

| | | Pretest | | Immediate posttest | | Delayed posttest | |
|---|---|---|---|---|---|---|---|
| Group | *N* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Pretask | 41 | 3.60 | 4.44 | 9.92 | 6.57 | 8.93 | 6.75 |
| Task | 39 | 2.95 | 2.66 | 9.14 | 5.87 | 9.30 | 5.20 |
| Posttask | 42 | 3.93 | 3.57 | 9.38 | 6.38 | 8.79 | 5.82 |
| Control | 36 | 3.22 | 2.89 | 4.74 | 4.03 | 5.32 | 3.90 |

*Note*: Maximum score = 24. The *n*s for the GJT and EIT are not the same because some participants did not complete one or the other of the tests for a variety of reasons.

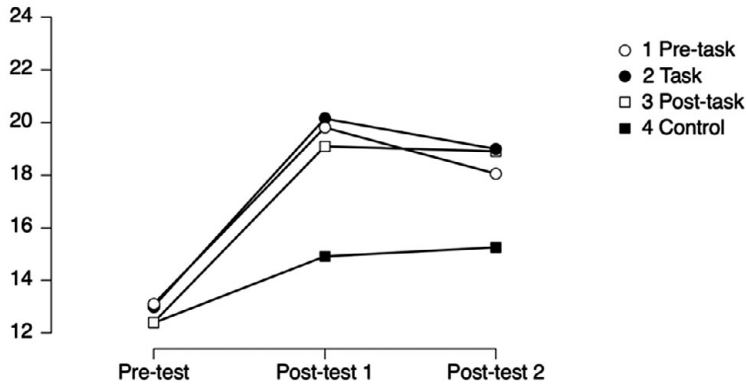


**Figure 1.** Grammaticality judgment test: Trends for the four groups across testing sessions.
*Note*: Maximum score = 24.

subjunctive in their tasks, the task groups 3.50 (SD = 1.51) and the posttask group 1.91 (SD = 1.64), which suggests that the earlier instruction is provided the more the notion is used.

Results of a one-way analysis of variance (ANOVA) showed no significant differences between groups at the pretest for the GJT, $F(3, 148) = 0.19$, $p = .91$, $n_p^2 = .00$, nor for the EIT, $F(3, 154) = 0.61$, $p = .61$, $n_p^2 = .01$. To determine if there were any significant differences between the groups at the posttests, we conducted ANCOVAs with the pretest scores as a covariate after checking the ANCOVA assumptions. The skew index and the kurtosis index were below 3 and 10, respectively (Kline, 2020), and

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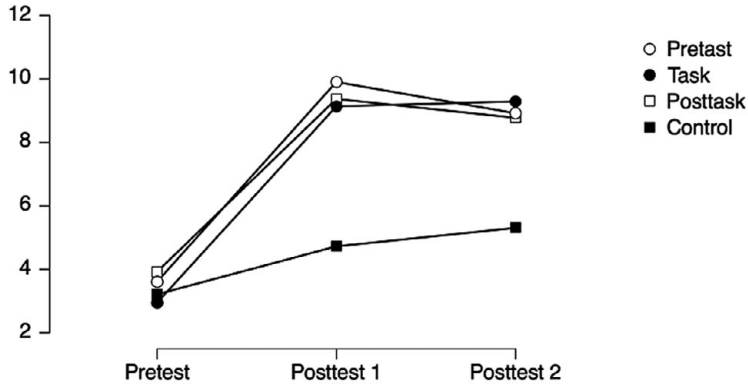


**Figure 2.** Elicited imitation test: Trends for the four groups across testing sessions.
*Note*: Maximum score = 24. Adjusted means.

**Table 4.** Grammaticality judgment posttests: Post hoc pairwise comparisons for participants' adjusted means using the grammaticality judgment pretest as a covariate

| | | Immediate posttest | | | Delayed posttest | | |
|---|---|---|---|---|---|---|---|
| Comparison | | 95% CI ($M_{diff}$) | $p$ | $d$ | 95% CI ($M_{diff}$) | $p$ | $d$ |
| Pretask vs. | Task | [−0.39, −2.74] | 1.00 | −0.10 | [−1.00, −3.31] | 1.00 | −0.22 |
| | Posttask | [0.45, −1.85] | 1.00 | 0.11 | [−1.19, −3.45] | 1.00 | −0.25 |
| | Control | [4.63, 2.32] | <.01 | 1.00 | [2.46, 0.19] | .03 | 0.50 |
| Task vs. | Posttask | [0.84, −1.56] | 1.00 | 0.20 | [−0.19, −2.55] | 1.00 | −0.05 |
| | Control | [5.02, 2.62] | <.01 | 1.09 | [3.45, 1.10] | <.01 | 0.75 |
| Posttask vs. | Control | [4.17, 1.83] | <.01 | 0.84 | [3.65, 1.34] | <.01 | 0.75 |

*Note*: The $p$ values were adjusted using the Bonferroni correction.

tests of homogeneity of variance were not violated ($p > .05$)[2]. For the GJT, the analyses indicated that the differences between the four groups were significant at the immediate posttest, $F(3, 147) = 13.22$, $p < .01$, $n_p^2 = .21$, as well as at the delayed posttest, $F(3, 147) = 7.08$, $p < .01$, $n_p^2 = .13$. Table 4 provides the results of post hoc pairwise comparisons of the means for the grammaticality judgment posttests adjusted for the grammaticality judgment pretest in the ANCOVA.

Inspection of the post hoc analyses for the GJT revealed that all experimental groups significantly outperformed the control group at the immediate posttest and delayed posttest, with the within-task group showing the highest effect size ($d = 1.09$ and 0.75, respectively). The pretask group initially presented a large effect size ($d = 1.00$) but the effect dropped at the delayed posttest ($d = 0.50$), whereas the two other experimental groups maintained their scores in a relatively more stable way. However, there were no significant differences between the experimental groups, and the effect sizes were all small (< 0.4).

We observed a similar profile for the EIT. ANCOVAs revealed significant effects at the immediate posttest, $F(3, 153) = 9.27$, $p < .01$, $n_p^2 = .15$, and the delayed posttest, $F(3, 153) = 6.35$, $p < .01$, $n_p^2 = .11$. Table 5 presents the results of the post hoc pairwise

[2]While some ANCOVAs did not meet the homogeneity assumption, when sample sizes are equivalent—as in the case in the present study—they can be considered sufficiently robust to overcome violations of the homogeneity assumption (Howell, 2008).

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**Table 5.** Elicited imitation posttests: Post hoc pairwise comparisons for participants' adjusted means using the elicited imitation pretest as a covariate

| Comparison | | Immediate posttest | | | Delayed posttest | | |
|---|---|---|---|---|---|---|---|
| | | 95% CI ($M_{diff}$) | *p* | *d* | 95% CI ($M_{diff}$) | *p* | *d* |
| Pretask vs. | Task | [−2.57, 2.70] | 1.00 | 0.01 | [−3.58, 1.53] | 1.00 | −0.17 |
| | Posttask | [−1.70, 3.45] | 1.00 | 0.14 | [−2.05, 2.96] | 1.00 | 0.07 |
| | Control | [2.08, 7.45] | <.01 | 0.86 | [0.62, 5.83] | .01 | 0.58 |
| Task vs. | Posttask | [−1.82, 3.43] | 1.00 | 0.13 | [−1.07, 4.02] | .80 | 0.27 |
| | Control | [1.98, 7.41] | <.01 | 0.93 | [1.61, 6.88] | <.01 | 0.92 |
| Posttask vs. | Control | [1.22, 6.56] | <.01 | 0.72 | [0.18, 5.36] | .04 | 0.55 |

*Note*: The *p* values were adjusted using the Bonferroni correction.

comparisons of the means for the elicited imitation posttests adjusted for the elicited imitation pretest in the ANCOVA.

Once again, all experimental groups significantly outperformed the control group at the immediate and delayed posttests, with the task group showing the highest effect sizes, that were relatively stable at both posttests ($d = 0.93$ and $d = 0.92$). No significant differences were observed between the experimental groups.

### *Learner level of knowledge*

The second research question concerned the mediating effect of learner previous knowledge of the target form as a result of the three timing conditions. B1- and B2-level groups participated in the research. We took care to include one class from each proficiency level in each condition (both experimental and control) to answer the second research question. To establish the mediating effect of the participants' readiness to acquire the subjunctive, we performed regression analyses using the posttest scores as a dependent variable and the pretest scores and groups as independent variables. An inspection of the standardized residuals graphs and the Q-Q plot standardized residuals do not show any specific concerns. For the variance inflation factor (VIF), we obtained results below 10, which is the generally accepted limit suggesting a multicollinearity problem, except for the GDT, where the VIF for the interactions between groups and pretest scores was 10.30, which is slightly higher than the accepted limit. Tables 6 and 7 present the results of the regression analyses.

For the GJT, the group and the pretest were significant predictors for the immediate posttest and for the delayed posttest, respectively. For the EIT, groups and pretest scores were significant predictors for both posttests. However, the interactions between groups and pretest scores were not a significant predictor for any posttests, indicating that the level of previous knowledge does not have a significant moderating effect.

## Discussion

This study sought out (a) to investigate the effects of timing of EI within a task-based cycle among intermediate-level French L2 students and (b) to determine the mediating effect of learner previous knowledge. Participants took part in two tasks over two class periods where they received explicit instruction on the French subjunctive either during

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**Table 6.** Predictors for the grammaticality judgment test scores

| | Immediate posttest | | Delayed posttest | |
|---|---|---|---|---|
| Predictors | β[a] | *p* | β[a] | *p* |
| (Intercept) | | <.01 | | <.01 |
| Groups | −0.60 | <.01 | −0.24 | 0.16 |
| Pretest | 0.19 | 0.24 | 0.46 | <.01 |
| Interactions Groups*Pretest | 0.36 | 0.11 | 0.11 | 0.61 |

[a]Standardized regression coefficient; $R^2$ for the immediate posttest = 0.32; $R^2$ for the delayed posttest = 0.32.

**Table 7.** Predictors for the elicited imitation posttests scores

| | Immediate posttest | | Delayed posttest | |
|---|---|---|---|---|
| Predictors | β[a] | *p* | β[a] | *P* |
| (Intercept) | | <.01 | | <.01 |
| Groups | −0.31 | <.01 | −0.21 | 0.02 |
| Pretests | 0.53 | <.01 | 0.60 | <.01 |
| Interactions Groups*Pretest | 0.10 | 0.48 | <.01 | 1.00 |

[a]Standardized regression coefficient; $R^2$ for the immediate posttest = 0.44; $R^2$ for the delayed posttest = 0.73.

the pretask, the task, or the posttask cycle of each task. A control group completed the two tasks without receiving any explicit instruction.

In the assessment of the overall trends, all participants in the experimental groups significantly outperformed the control group on both posttests for both the GJT and the EIT. This confirms the well-established efficacy of EI over zero instruction (Goo et al., 2015; Norris & Ortega, 2000). However, no significant differences were observed between the experimental conditions. This finding is in line with previous studies that also did not observe differences between different timing conditions (Li et al., 2016a; Quinn, 2014; Spada et al., 2014). However, contrary to Li et al. (2016a), the present study did find significant differences between the experimental groups and the task-only group. Participants in Li et al.'s (2016a) study completed tasks in only one class period and may not have had sufficient time to take advantage of the instruction that they had received, whereas the participants in this present study had two separate occasions to reinvest their knowledge. Furthermore, the participants in Li et al. (2016a) were relative beginners and were likely hindered in their ability to make good use of the EI provided at the beginning of the task. In Spada et al. (2014), even though no significant differences were noted between the isolated and integrated groups, based on the effect sizes of the tests reputed to assess implicit and explicit knowledge, greater gains were observed for implicit knowledge for the integrated group and for explicit knowledge for the isolated groups. In our study, the effect sizes between the GDT and the EIT do not seem to favor the development of one kind of knowledge over another for any experimental group. This might be explained by the fact that the type of instruction was different in Spada et al. for both conditions whereas participants in this study received the same instruction (only timing differed). Therefore, from an acquisitional perspective, the timing of EI does not seem to significantly influence efficacy, both for explicit and implicit knowledge.

Among the experimental groups, although the differences are not significant, the within-task group showed greater effect sizes than the other groups, reaching a large effect size for the GJT at the immediate posttest and almost reaching a large effect size for

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both posttests of the EIT (respectively, $d = 0.93$ and $d = 0.92$). It was also this group that showed the least knowledge decay between both posttests. The fact that within-task participants showed the highest effect sizes is in line with previous research reporting that within-task instruction had a facilitating L2 development effect (Arroyo & Yilmaz, 2018; Fu & Li, 2022; Li et al., 2016b). The proximity of the context of teaching and learning might be at the origins of the obtained result in the sense that such proximity might have eased the processing demand on learners who are trying to understand a new notion. This result can also be interpreted from the perspective of preparatory attention theory with participants in the within-task conditions seeing a need for the subjunctive mood to help them with their tasks. The tasks may have provided the participants with the impetus to start an initial bottom-up processing of the input (LaBerge, 1995) and EI may have rendered more noticeable a feature with low saliency, as usage-based theories would predict. Finally, the fact that the within-task group performed somewhat better than the posttask group is likely explained by the immediate opportunity afforded to apply newly acquired knowledge in a meaningful context. The task was still in progress when the within-group received the EI, giving the participants the chance to dynamically reinvest and validate their knowledge in a meaningful situation, an outcome supported by skill acquisition theory. This last hypothesis might also explain why within-task groups showed an advantage over posttask groups in Li et al. (2016b), Fu and Li (2022), but not in Quinn (2014). In Li et al. (2016b) and Fu and Li (2022), learners who received posttask CF did not have the chance to reinvest the knowledge in a communicative context allowing them to develop procedural knowledge, whereas in Quinn (2014) learners engaged in three task cycles and received delayed CF after each task, giving them the opportunity to make use of the information in the follow-up tasks. Similarly, our study also relied on a two-task cycle. The absence of practice opportunities following posttask instruction may therefore explain the difference in learning outcomes, a hypothesis that should be empirically validated.

### *Learners' previous knowledge*

To appreciate the moderating effect of previous knowledge on timing of instruction, learners from different levels took part in this study. Contrarily to previous studies which showed that a learner's prior knowledge has a moderating effect on the timing of instruction (Li et al., 2016a; Shintani, 2017), results from the present study did not reveal such effects. The difference in the reported findings might be caused by the way level of previous knowledge was operationalized. Li et al. (2016a) and Shintani (2017) elected to use a cut-off point based on the pretest scores in accordance with established criteria (zero vs. some knowledge) and separated learners into two different groups. In our analyses, instead of considering proficiency as a categorical variable, we elected to control for the level of previous knowledge of all participants in a continuous manner to avoid any data loss. The fact that learners' level of previous knowledge does not seem to influence timing of instruction might be attributed to a lack of variability in terms of level. In fact, while we included learners from two different levels (B1/B2), both are within the intermediate stage when it comes to the knowledge of the subjunctive. In other words, the difference in terms of knowledge was not sufficiently present to permit an accurate evaluation of the mediating effect of previous knowledge. Unlike Li et al. (2016a) whose sample included learners with zero knowledge, few of the participants in the present study possessed zero knowledge of the subjunctive. Accordingly, it is possible that results would have been different with more beginner learners. In any

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event, the results of this study do not support a moderating effect of level of knowledge on timing of instruction.

### *Pedagogical implications*

Results from this study indicate that planning an explicit instruction segment of a grammatical form within a task leads to an improvement of both explicit and implicit knowledge, regardless of whether it happens during the pretask, the within-task, or the posttask phase and regardless of the learner's level of previous knowledge. Accordingly, the criticisms against a proactive or a task-supported approach seems to be unwarranted from an acquisition perspective. Even the slight advantage accruing from integrating explicit instruction during the within-task phase should not dissuade a teacher who prefers pretask instruction (East, 2017; Zheng & Borg, 2014) from proceeding. There remains, however, the hypothesis issued by Willis and Willis (2007) that focusing on form in the pretask or within-task phase might distract the learner away from the communicative intention of the task. More work in this area remains to be undertaken, but a complementary study by Michaud (2021) does not support this claim: Pretask or task instruction was shown not to have a negative impact on performance data.

## Conclusion

This study sought to ensure ecological validity, working with students and teachers in a regular classroom setting. It was therefore not possible to include a true control group that would have only completed the pretests and posttests. Furthermore, to extend the instruction effect and reflect pedagogical practices, a two-task cycle was included. While we endeavored to attenuate the possibility that posttask EI could serve as pretask instruction in the second task, we cannot exclude this possibility. We are confident, however, that the 2-day interval between tasks was eventually sufficient to mitigate this possibility. Even though care was taken to ensure that teachers followed the established protocol, we cannot rule out teacher effect. With respect to assessment, we used two different measures to assess learning gains, a GJT and an EIT. These tests have been subjected to multiple validations in different studies yielding contradictory results as to whether they are a true measure of explicit/implicit knowledge versus declarative/procedural knowledge. This is especially the case of the EIT that might be a measure of proceduralized knowledge rather than implicit knowledge (Suzuki & DeKeyser, 2015). It is warranted that future studies include new tests that tap more into implicit knowledge, such as a self-paced reading or word monitoring.

This study was the first to look at the timing of instruction in the three phases of a task. Given the increased interest in task-based instruction and teaching practices with respect to form-focused instruction, much more remains to be done in this area. Future research might look at different proficiency levels and target grammatical forms of varied complexity. Adopting a process-oriented framework focusing on how learners perform the task might also be valuable to inform teaching practices.

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