

## Master's Thesis Abstract

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Title: A Study of the Measurement of Implicit and Explicit Knowledge in Second Language Learning:  
Focusing on the Three Design Features of the Grammaticality Judgement Test

In second language acquisition, it is widely accepted that implicit knowledge is unconscious linguistic knowledge and explicit knowledge is conscious linguistic knowledge. The theoretical and operational definitions of these two kinds of knowledge need to be further elaborated. The most controversial problem of implicit/explicit knowledge is how these two kinds of knowledge are related to each other. In order to solve this problem, the measures of implicit/explicit knowledge are needed to be developed. This study focused on the three design features (the time condition, modality, and stimulus type) of grammaticality judgement tests (GJTs). Some researchers insisted that GJTs can measure implicit/explicit knowledge separately by incorporating these three design features. However, the validity of GJTs with the three design features as the measures of implicit/explicit knowledge is at issue and needs further research. Thus, the current study addressed the following two research questions:

RQ1. How do the three design features affect participants' performance on GJTs?

RQ2. Are GJTs with the three design features valid measures for implicit/explicit knowledge?

Vafae et al. (2017) concluded that what GJTs can measure is only explicit knowledge since learners focus mainly on 'forms' during the tasks. According to the operational definitions formulated by Ellis (2005) learners access to implicit knowledge when they focus on 'meaning', while they access explicit knowledge when they focus on 'forms'. Therefore, the current study incorporated comprehension questions to make learners focus on 'meaning' while engaging in GJTs. In order to answer RQ1, repeated measures ANOVA was conducted. For RQ2, a principal component analysis was conducted. A total of 40 Japanese learners of English as a foreign language from one university in Japan (female: N=21; male: N=19) participated in the current study. Aural timed GJT, written timed GJT, aural untimed GJT, written untimed GJT, and a metalinguistic knowledge test were conducted.

The results of ANOVA showed that all of the three design features significantly affected the participants' performance on GJTs. The results also indicated that the scores on grammatical sentences of GJTs may not reflect learners' pure grammatical knowledge. The results of the principal component analysis showed that timed and aural inputs make learners access to implicit knowledge and that modality contributes to the purest implicit/explicit knowledge of the three design features. Aural inputs made the participants depend on real-time processing. This probably limited their 'reflecting', which requires learners to access to explicit knowledge. The fleetingness of the aural inputs also probably made the participants' reflecting difficult. In this study, the participants tended to perform poorly on some grammatical structures which are considered not to be salient enough. A possible reason is that the participants may have had difficulty with noticing grammatical errors of such structures since the comprehension questions made learners focus on meaning.

The current study could not adequately take into account the consistency between the participants' proficiency levels and the difficulty levels of the stimulus sentences. Therefore, in the future research it is required that the participants' proficiency be more rigorously measured and that the selection of the tasks be refined accordingly.