

Final Synthesis Paper

Measuring and Developing L2 Linguistic Competence

1. Introduction

Second language acquisition is fundamentally different from first language acquisition in the aspect of knowledge and information processing. It is argued that L1 acquisition is triggered by input of implicit knowledge (Bley-Vroman, 1990; N. Ellis, 2006) while explicit knowledge in L2 acquisition facilitates L2 linguistic knowledge (Seliger, 1979; N. Ellis, 2002; R. Ellis, 2002). Pedagogical approaches in L2 grammar instruction are always heatedly-discussed topic in second language teaching and learning. It becomes controversial whether L2 linguistic knowledge should be taught in form-based instruction and meaning-based communicative instruction. An important focus of SLA research is to describe how linguistic competence develops over time (R. Ellis, 2005; Erlam, 2006) and specify variables contributing to the process (R. Ellis, 2005). Hence, it is critical for us to understand how learners process explicit and implicit knowledge in second language, how explicit and implicit knowledge are represented in the learner's performance, and how we can measure L2 learner's explicit and implicit knowledge. More importantly, we should investigate how we can support and develop L2 learners' emerging linguistic competencies after learners' competencies are assessed and measured.

2. Background information

2.1 Implicit knowledge v.s Explicit knowledge

It is necessary to have a general picture about theoretical constructs of linguistic knowledge. There are two types of knowledge processed in second language acquisition, namely, explicit knowledge and implicit knowledge (R. Ellis, 2004, 2005; Erlam, 2006). Explicit knowledge focuses on language code developed through formal practices while implicit knowledge is developed through exposure to communicative language use (Bialystok, 1978). Paradis (2004, 2009) provides a clear comparison between implicit competence and explicit knowledge (as is shown in the chart). Implicit linguistic competence requires incidental non-conscious acquisition under procedural memory. On the contrary, explicit metalinguistic knowledge requires attentional conscious learning under declarative memory.

Implicit	Explicit
Implicit linguistic competence	Explicit metalinguistic knowledge
Incidental Acquisition	Attentional Learning
Non-conscious	Conscious
Procedural memory	Declarative memory

(Paradis, 2009)

To date, interfaces/non-interfaces of explicit knowledge and implicit knowledge have been debated for decades (Bowles, 2011). Researchers take the interface position put that explicit knowledge can be converted into implicit knowledge through repeated use and practices. Moreover, Bialystok (1990) and Schmidt (1994) argue that the system represents two types of knowledge as intersecting continua rather than two dichotomous knowledge systems. Interrelation/interfaces of explicit and implicit knowledge are also promoted by Smith (1981) and DeKeyser (1998).

Even though implicitly acquired knowledge tends to remain implicit, and explicitly acquired knowledge tends to remain

explicit, explicitly learned knowledge can become implicit in the sense that learners can lose awareness of its structure over time, and learners can become aware of the structure of implicit knowledge when attempting to access it. (DeKeyser, 2003, p. 315)

By contrast, the interface position does not convince all researchers in the field of SLA. Erlam (2006) presents that explicit knowledge may or may not play role in the development of implicit knowledge. Bialystok (1994) argues what other researchers may interpret as a move from explicit to implicit knowledge, she would interpret as a change in control of processing. Paradis (2004, 2009) puts forward that there is no continuum between explicit knowledge and implicit competence. Explicit knowledge requires controlled processing while implicit competence needs automatic processing. These two separate processes are by no means interrelated. According to Paradis (2004), there is only continuum ranging from predominant reliance on controlled processing to predominant reliance on automatic processing.

2.2 Methods to measure implicit competence and explicit knowledge

Explicit knowledge tests are based on testing on learners' receptive language knowledge and targeting language production (Akakura, 2009). Grammaticality judgment test is often employed to measure explicit knowledge, which requires learners to judge grammaticality in decontextualized and discrete sentences (Han & Ellis, 1998). Untimed grammaticality judgment is considered to be one method to measure explicit knowledge (R. Ellis, 2005; Han & Ellis, 1998; Sorace, 1985). Another approach is assessment of metalinguistic knowledge. The most commonly-used methods of metalinguistic knowledge are error correction and verbalizing grammatical rules (Alderson et al., 1997;

R. Ellis, 2005). Compared with grammaticality test, these tests of written production proved to be more effective in assessing L2 learners' ability in explicit grammatical knowledge.

By comparison, measures of implicit competence are to elicit internal subconscious linguistic competence. There are relatively few studies addressing the issue of elicitation of implicit linguistic knowledge (Genesee & Upshur, 1996; Norris & Ortega, 2000). Recently, measures of implicit knowledge are advanced and validated (Erlam, 2006; R.Ellis, 2005). The typical method is based on free production of language. Tasks like narrative and story-telling are commonly employed to produce learners' spontaneous oral language. However, unplanned production task does not necessarily measure L2 learners' implicit knowledge. Learners have strong metalinguistic awareness are able to monitor and manipulate explicit linguistic knowledge in the oral production tasks. Erlam (2003) mentions that oral production should be directed to focus on meaning with time pressure. Elicited production task is another optional method. Elicited imitation task consists of repetition a grammatical sentence. It is hypothesized that learners would be able to imitate accurately by employing their internalized linguistic competence. Moreover, Erlam (2006) modifies the elicited imitation (EI) task to specify some key criteria in elicited imitation task in order to distinguish this task from rote repetition. These criteria include (1) time constraint (2) focus on meaning (3) correction of ungrammatical sentences.

3. Critical Evaluation

Compared with explicit linguistic knowledge, implicit linguistic competence is internalized as a way of automatic processing. Using implicit linguistic competence is a neuropsychological process in human's mind. As I mentioned before, there are still few studies covering measures of implicit linguistic competence. Validation of relevant tasks in measuring implicit linguistic competence is an important task. In this part, several points are raised to talk about the measures of implicit competence. Meanwhile, it is important to see if there is any gap between emerging competencies and developing competencies; if there are further steps researchers can take in order to promote L2 development of linguistic competence.

3.1 Problematizing measures of implicit competence-EI tasks

As is shown in the foregoing analysis of measures of implicit linguistic competence, free oral language production has been questioned. Although tasks like story-telling/narrative oral speaking requires focus on meaning by communicative language use, "more aware learners" would still be able to control his processing in explicit knowledge within unplanned oral free production (Erlam, 2003). Erlam (2006) carries out a validation study to investigate if elicited imitation (EI) task can effectively measure L2 implicit knowledge. Some crucial points are generalized in her reconstructive elicited imitation test design (e.g primary focus on meaning, "time-pressured" conditions). Ultimately, the results reflect the correlations among some important variables she explores (performance on EI tests, oral narrative task, and time-pressured standardized language test).

However, some problems come up with this validation study even if the results justify its effectiveness and feasibility of measuring implicit linguistic knowledge. First of all, focus on meaning versus focus on form is a salient issue in this empirical study. It is definitely understandable that the researcher intended to make students focus on the meaning in order to elicit the internal linguistic knowledge to correct grammatical errors spontaneously. Also, the author groups sentences with similar topics together so as to make subjects concentrate on meaning. However, one requirement the researcher added in research design seems to be problematic, which is to require participants to repeat in correct English as apposed of mechanic repetition. The expression of “repeat sentences in correct English” is confusing in terms of the author’s goal to direct participants on meaning focus. The requirement of repetition in “correct” English, as far as I am concerned, indicates that participants are supposed to focus on linguistic form as well (to see whether word choices are appropriate; whether the expressions or sentences are grammatical, etc.). Thus, it is entirely possible that before the EI tests participants were conscious of one of their tasks is to identify and correct grammatical errors in the repetition. That is to say, we would be aware to draw upon explicit knowledge in the repetition. This contradicts the assumption that L2 learners focus on meaning and correct errors by their internal grammatical ability.

Furthermore, implementation of reconstructive EI task seems plausible and successful. The scoring criteria of the participants’ responses, however, undermine the validity of the task somehow. The researcher takes away points because of learners’ structural modification when repeating the sentences in correct English, like “Death of Diana” instead of “Diana’s death”. In this study, model responses in the training session

are supposed to guide participants to understand the constraints of structural modification. However, others may cast doubts upon whether the researcher explicitly talked about what modification of original stimulus is and whether she addressed all the possible constraints of structural modification in real repetition tests.

It is true that elicited imitation task is more complex to create compared with other measures of implicit knowledge (Akakura, 2009). Researchers measure implicit knowledge based on EI task are required to control lots of criteria and also have a consistent and reliable scoring rule for repeated responses. In the dissertation of Akakura (2009), she employs a story-based elicited production test to assess learners' L2 implicit knowledge. The task is based on the adaptation and modification of elicited imitation task in first language and second language acquisition (R. Ellis, 2005; Erlam, 2006; Fraser, Bellugi, & Brown, 1973; Hale-Haniff & Siegel, 1981; McDade et al., 1982). Akakura (2009) revises the task that learners are “not required to always ‘imitate’ what they have heard, but to make modifications to the content of some of the sentences so that it matches the pictures” (p.126). Sample question is shown as below. She created the task based on a specific context-story rather than isolated sentences so as to provide a stronger focus on meaning.

Sample question:

Recording: “*During the night when no one was looking, unexpected thing happened. Is this true or false?”

Picture:

Picture of a frog stepping out of a glass

jar at night, while the boy and dog are
fast asleep on the bed.

Words provided: During the night when..., unexpected thing...

Some questions, nonetheless, may arise regarding the measures of implicit knowledge in the dissertation of Akakura (2009). In the main study, she tested on the same group (N=95) of L2 learners under multiple tasks including tests of both explicit and implicit knowledge. Although the researcher controls all the possible criteria and tests the validity of each individual test, some questions would be asked about the overall validity of task chains. For example, each task of implicit knowledge itself would possibly raise learners' awareness of explicit linguistic knowledge in the following tasks. It is necessary for the researcher to explain how the inter-task influence is controlled.

In all, it is important for researchers to carry out follow-up study to test the validity of measures of implicit linguistic competence. The studies implemented recently are predominantly based on similar groups of L2 learners due to demographic or logistic restrictions.

3.2 Bridging the gap between emerging and developing competencies

Admittedly, assessment of L2 internal linguistic competence furnishes us with a picture about how researchers can identify learners' current linguistic capabilities. In addition to diagnosis of real-time linguistic competencies, what needs us more attention is how we could support L2 development through some specific tasks and how learners are able to learn something valuable from the assessment task.

3.2.1 Sociocultural theory

In 1980s, Frawley and Lantolf touched upon connecting Vygotskian sociocultural theory (SCT) with second language acquisition. Sociocultural theory has recently extended to second language learning and teaching (Lantolf, 2000; Lantolf & Thorne, 2006).

One important question addressed by SCT researchers is how L2 learners deploy this new language to mediate their psychological activity (Lantolf, 2006). Vygostky (1986) argues that human mental processing and functioning are mediated by symbolic tools. The most salient tool is language, which can be used to organize their own and others' social and mental functioning. Mediation is a key construct in sociocultural theory for second language development. L2 learning and development are considered as mediational processes (Lantolf & Thorne, 2006; Wertsch, 1985).

The other key construct of sociocultural theory is internalization. "Internalization is the process through which members of communities of practice appropriate the symbolic artifacts used in communicative activity and covert them to psychological artifacts that mediate mental activity" (Lantolf, 2006, p.90). Kinginger (2001) generalizes some important themes in sociocultural theory. The learning is the process of inward and outward growth through mediational means.

Sociocultural Theory (SCT)	
Focus	Higher mental functions in individuals, groups, and societies
Method	Genetic/historical
Language Unit	Utterance

Learning	Internalization
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(Kinginger, 2001)

In the foregoing chart, the method of SCT is genetic and historical. Learning can be traced back to its original stage of development. Microgenetic analysis enables researchers to observe the real-time revolutionary shifts leading to independent mental functioning (van Compernelle & Williams, 2012).

3.2.2 Zone of Proximal Development

Vygotsky (1978) mentions that effectiveness of learning would be maximized in the zone of proximal development (ZPD).

Zone of proximal development is “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers”

(Vygotsky, 1978, p.86).

ZPD is dialogically co-constructed between novice and expert (Aljaafreh & Lantolf, 1994; Lantolf, 2000). ZPD is collaborative interaction between experts and novices/peers who use mediational means to achieve jointly-constructed expertise (van Compernelle & Williams, 2012). Thus, ZPD is not action that the expert assists the learner in one-way. Instead, a learner and a more capable partner jointly participated in the mediational actions to solve the problem. Holzman (2009) interprets that ZPD consists of three components: (1) Individual learners’ property (2) An approach to offer social support to learners (3) A collective and transformative activity undertaken with learners.

Aljaafreh & Lantolf (1994) design the study to investigate the effects of corrective feedback within socio-cultural theory on the microgenetic development of a second language among adults. They observed the different levels of need for intervention, noticing and correcting errors (5 levels). As a result, they conclude that collaborative endeavor to co-construct ZPD through dialogues is conducive for learners to appropriate the responsibility for their own linguistic performance (self-regulation).

Corrective behaviors co-constructed by learners and dialogical partners (especially language experts) in the interaction are critical for L2 learners' development. Other-regulation and mediation have an impact on learner's production of specific linguistic forms (Aljaafreh & Lantolf, 1994). Meanwhile, collaborative frame would be able to make novices self-regulate their performance and monitor their linguistic output more effectively. In this study, in accordance with authors' proposal that microgenetic development is evidenced from the bottom (explicit) to the top (strategic/implicit) of regulatory hierarchy, regulated methods like metalinguistic feedback seems problematic to be positioned in the continuum of explicit to implicit feedback. Metalinguistic feedback for some learners with strong metalinguistic knowledge would be explicit correction as opposed to implicit correction.

Another study probes microgenesis in a group ZPD. Van Compernelle & Williams (2012) explores the microgenetic development of learners' understanding of sociolinguistic variation in French during an instructional conversation (IC). In the study, the instructor helps learners to construct the conceptual understanding of sociolinguistic variation in French by employing graduated mediational methods (from implicit to explicit) to support the class's zone of proximal development. Teacher-student interaction

successfully creates a group ZPD within which learners have deeper and more conceptually-based understanding of language variation in French (like tu v.s vous, verbal negation). This study provides us with a new perspective on group ZPD construction.

In summary, two important themes can be synopsized from these studies, namely graduation and contingency. The methods of mediation do not need to be pre-fabricated. Corrective feedback/mediation is based on learners' ongoing proficiency or sensitiveness to different mediational methods. After the expert and the learner(s) are situated in the ZPD, the expert would provide graduated feedback to help learners produce accurate linguistic forms (Aljaafreh & Lantolf, 1994) or raise learners' conceptual understanding of language variation (van Compernelle & Williams, 2012). Developing in second language is not only represented from the learner's ability to generalize what have been appropriated but also reflected through expert-learner joint engagement in creating a developmental environment.

3.2.3 Developing L2 learning through Dynamic Assessment (DA)

As I mentioned above, Holzman (2009) argues that ZPD is a collective and transformative activity. Learning potential created in the ZPD indicates that how learners can get benefit from instruction or assistance from the more experienced peer or expert. Importantly, mediation is not a process of offering assistance, but a process of offering appropriate assistance (Poehner & Lantolf, 2010). The modifier "appropriate" indicates the assistance not only helping learners to solve the problem but also help them be able to apply and transfer what is appropriate to broader contexts.

Traditionally, assessment is the way to measure the result of learners' development and not directly promote the emerging development. Assessment is typical a static testing, namely a standardized test (Antón, 2009). Based on sociocultural ZPD, it is important to diagnose learners' abilities, intervene in their learning and document/trace learners' development (Antón, 2009). Dynamic assessment (DA) is the alternative tool to traditional assessment, which measures, intervenes and documents the process of learning. Lidz (1987) defines DA as "an interaction between an examiner-as-intervener and a learner-as-active participant, which seeks to estimate the degree of modifiability of the learner and the means by which positive changes in cognitive functioning can be induced and maintained" (p.4). From the perspective of Vygotsky, the application of ZPD to assessment is a way to provide a more complete picture of learners' stage of development.

There are basically two approaches to DA, interventionist DA and interactionist DA (Poehner & Lantolf, 2010). Interventionist DA is fixed set of clues and hints determined beforehand. Assistance is offered based on sequence from implicit to explicit mediation. Interactionist DA is contingent and mediation is adjusted based on learners' responses. Poehner & Lantolf (2010) investigated the case of interactionist DA. The results show that the mediator-learner interaction is systemized by dynamic assessment in which learners benefit from a range of both implicit and explicit mediational means. Mediation is attuned to learners' emerging linguistic abilities. L2 DA interactions in their study strongly support Vygotsky's claim that past development would not be an indicator for the future development. As Aljaafreh & Lantolf (1994) argue, individuals would be positioned in different ZPDs even if they are in similar levels of proficiency. Thus, individual's response to mediation is the stepping stone for the teacher or mediator to

adjust mediational tools in order to assist learners to transfer their abilities to new and more complex tasks.

Moreover, Poehner & van Compernelle (2011) highlight ZPD as transformative activity as Holzman (2009) proposes. DA works as the method to diagnose learners' abilities as well as support ongoing development of learners to help them to extend and transfer their understandings in broader context. The other important feature from this study should be taken into account is the intent of mediation. Mediators must interpret DA as purposeful activity. Feuerstein et al.(1988) argues that the mediator is supposed to insert himself/herself into the relation between the learner and the social where learning could occur. And this notion of intentionality of mediation should be specified along the goal to co-construct a collaborative or cooperative interactional frame with L2 learners (Poehner & van Compernelle, 2011).

To sum up, the interactionist approach to DA provides the conceptual basis and frame for diagnosis and development of L2 learners' abilities (Antón, 2009). Researchers are encouraged to lay more emphasis on intentionality of DA to co-construct a cooperative interactional environment for L2 learners.

4. Discussion

As I talked about measures of assessing implicit competence in section 2, researchers recently draw upon elicited imitation task to test L2 learners' implicit linguistic competence. However, some problems exist in implementation of the elicited imitation tasks. These difficulties may be demographic and logistic limitations or controlling of criteria in the study. Duff et al. (2009) mention that there are several validation

procedures researchers should follow to measure L2 implicit grammatical knowledge. Seven criteria are summarized as follow: (1). Performance of EI is not influenced by learners' rote repetition skill. (2). Short-term memory should not greatly influence performance. Thus, stimulus sentences should exceed learners' short-term memory capacity. (3). Participants must focus on meaning rather than form. (4). Linguistic complexity and difficulty should not influence EI performance; so some grammatical structures should be easy to repeat. (5). Task ease and difficulty should not influence performance (e.g floor and ceiling effects). (6). Instructions about how to do the EI task should not influence the performance. Clear instructions like "repeat sentences in correct English" should be provided. (7). Comparing results with other implicit measures.

Furthermore, from synthesis of sociocultural theory, it is found that theoretical underpinnings of ZPD and application of DA, provides us insights into extension to the task design of L2 learning. Dynamic assessment provides us with a good example to implement both assessment and teaching in the same task. DA, nonetheless, does not necessarily assess the internal/implicit linguistic competence at the very beginning. Through certain ways, like learner verbalization (Poehner & van Compernelle, 2011), and other mediational tools, researchers are able to situate L2 learners in ZPD, but they would not have a clear picture of specific implicit grammatical/linguistic competence of L2 learners. There is a gap between measuring/diagnosing the real-time emerging linguistic competencies and supporting learners to develop L2 linguistic competencies in the same study.

5. Conclusion

It is critical for us to probe the issue of diagnosis and development of second language learning. On one hand, we should accurately assess learner's internal linguistic competence to see how non-conscious language acquisition goes on among second language learners. On the other hand, teachers should take some measures to help learners to develop their emergent competencies further. Combining measures of implicit linguistic competence and approaches to Dynamic Assessment, researchers may find it would be a great idea to measure learners' implicit linguistic competence through specific elicitation tasks and develop learners' emergent internal linguistic competencies with the tool of DA to further develop learners' competencies.

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