

Learner Reciprocity in Text Chat-Mediated Dynamic Assessment

Piyumi Udeshinee

Department of Computer and Systems Sciences, Stockholm University, Stockholm, Sweden; NSBM Green University, Sri Lanka

Ola Knutsson

Department of Computer and Systems Sciences, Stockholm University, Stockholm, Sweden

Sirkku Männikkö Barbutiu

Department of Computer and Systems Sciences, Stockholm University, Stockholm, Sweden

ABSTRACT: Dynamic assessment (DA) is an effective tool for diagnosing learner abilities that are still being internalized. Although mediation and learner reciprocity are inseparable features of DA, the latter has rarely been analyzed or theorized about compared to mediation. To address this research gap, this paper examines learner reciprocity in a text chat-mediated environment. The study involved eight English as a Second Language (ESL) students and four ESL teachers who participated in task-based interactions. During these interactions, teachers used a DA-based regulatory scale to assist learners in completing the tasks. Data were collected from text chat-mediated interactions and oral conversations during the text chat interactions. Data were analyzed employing an approach inspired by conversation analysis (CA), and five reciprocity moves were identified: incorporating the mediator's feedback, providing a correct response following the mediator's feedback, imitating the mediator, seeking mediator's approval, and accepting and acknowledging the mediation. The findings indicated how the types of reciprocity moves could be used to diagnose the learner's current level of development, which can help teachers to decide how much more instructional effort might be needed.

KEYWORDS: Dynamic assessment, ESL, learner reciprocity, regulatory scale, self-regulation

Introduction

Dynamic assessment (DA), grounded in Vygotsky's sociocultural theory, is posited as a type of assessment that inextricably combines instruction and assessment into an activity that triggers learner development (Lantolf & Poehner, 2004). It is believed that DA can unravel the learner's actual and potential level of development through mediation as part of collaborative teacher-learner interactions (Lantolf, 2009). The application of DA in the context of computer-assisted language learning has been prominent in recent years (Qin & Zhang, 2018), although much of the discussion has revolved around using a computer application as the mediator. Most computer-based DA studies have also focused on listening or reading comprehension skills (e.g., Bakhoda & Shabani, 2019; Barabadi et al., 2018; Yang & Qian, 2020), and many are quantitative, meaning that they fail to capture the nuances of this activity.

Mediation and learner reciprocity (the responsiveness of the learner to the teacher's feedback) are considered inseparable features of DA, or as two sides of the same coin (Poehner, 2008). Mediation must be attuned to the linguistic needs of the learner (Vygotsky, 1987b) and must therefore be graduated and contingent (Aljaafreh & Lantolf, 1994). However, the linguistic needs of learners can only be identified through learner responsiveness, which is often referred to as learner reciprocity in the DA literature (Ableeva, 2018). Learner reciprocity helps the teacher identify the learner's abilities and the development that occurs through dialogic interactions (Ableeva, 2018). Although mediation has been given considerable attention in the literature, learners' responsiveness to mediation has been analyzed in only a few studies (e.g., Poehner, 2008; Rassaei, 2021; van der Aalsvoort & Lidz, 2002).

In this study, we explore learner reciprocity during teacher-learner dialogic interactions in a text chat environment. Though rarely used as a tool for DA, synchronous text chat-mediated communication is considered to be supportive in promoting language learning (Andujar & Salaberri-Ramiro, 2021; Giguère & Parks, 2018; Henderson, 2019; Razagifard, 2013) and collaborative learning (Warschauer, 1997). Text chat offers several affordances that support language development: It allows learners time for processing and planning, provides visual saliency for linguistic forms that could be overlooked in rapid spoken interactions, and gives a visual record of interactions (Sauro, 2009). Text chat-mediated communication is available in both computer and mobile phone environments, as well as both formal (educational platforms such as Zoom) and informal (social media platforms such as WhatsApp) settings, and allows for spontaneity and continuity in teacher-learner interactions. Furthermore, it takes language learning beyond the traditional classroom, thus overcoming time and space constraints.

Text chat can also serve as a tool that gives learners confidence and provides a safe environment to practice and evaluate their language skills (Satar & Özdener, 2008). Although it has been noted that the slowness of the typing process and the inability of participants to see each other in text chat interactions decrease learner engagement (Dao et al., 2021), text has also been considered as a thinking device (Warschauer, 1997), perhaps due to the slower typing speed. Online text chat seems to play a vital role in collaborative learning (Warschauer, 1997). One advantage is that it is not just the texting option that is available, but also visual expressions such as emojis and GIFs, which can help users express themselves more clearly and effectively.

This study focuses on learner reciprocity in teacher-learner dialogic interactions in a text chat environment. We will review the theoretical background of DA and learner reciprocity, and position the present study within the extant literature. We then provide a detailed description of the methodology. After elaborating on the study's findings, we conclude the paper by discussing implications for future research.

Dynamic Assessment

DA was initially applied to assessments in the context of psychology and education, and has attracted attention in the area of language learning research over the past decade (Qin & Zhang, 2018). It has gained popularity as a strategy for merging instruction and assessment to promote language development (Herazo et al., 2019). DA is grounded in the Zone of Proximal Development (ZPD), one of the central notions of Vygotsky's sociocultural theory (Poehner et al., 2017). ZPD refers to the difference between a learner's actual development, achieved alone, and the potential development that can be achieved with the assistance of a more capable person (Vygotsky, 1987b). Hence, DA evaluates not only the learner's current state of ability but also their evolving ability (Qin & Zhang, 2018).

Although DA has been applied in various language learning studies, its application in the context of computer-assisted language learning (CALL) is more recent. Few studies have examined computerized DA in the context of language learning (Yang & Qian, 2020).

Lantolf and Poehner (2004) distinguish between two approaches to DA: interactionist DA and interventionist DA. The former is a more flexible, negotiated process of interaction, whereas mediation is more response-driven and constantly attuned to the learner's responses. The interventionist approach involves a predefined form of mediation that is graduated from implicit to explicit feedback. The current study combines elements of both approaches, with a predefined scale and a flexible and negotiated mediation facilitated by a teacher. The mediation provided in the current study aims to foster the development and maturing of abilities, which

sets DA apart from the scaffolding that focuses solely on completing a specific task (Poehner & Lantolf, 2005).

Learner Reciprocity

Learner reciprocity is considered the crux of DA, in view of its vital role in revealing the learner's evolving linguistic needs (Lantolf et al., 2016; Poehner, 2008). It is therefore an important aspect that should be considered when examining learner development (Ableeva, 2018; Poehner, 2008; van der Aalsvoort & Lidz, 2002). Van der Aalsvoort and Lidz (2002) define reciprocity as the learner "responding to the teacher during didactic and socially meaningful interaction in the role of being a learner" (p. 115). They explain that reciprocity involves the openness and willingness of the learner to engage in mediation. Ableeva (2018) argues that intellectual development involves both progressive (moving forward in the development process) and regressive (moving backward in the development process) moves, and that even regressive moves can contribute to the overall development of an individual. For example, a learner may try to incorporate the teacher's feedback, but may be unable to correct the error, which could be considered a regressive move; however, this still contributes to the learner's overall development, as it is a signal to the teacher regarding how much more effort should be taken to assist the learner. Further, although the learner is unable to correct the error, they may at least be able to understand that what they produced was incorrect. On the other hand, if the learner can incorporate the teacher's feedback and correct the error, this could be considered a progressive move, as it indicates the learner's progress.

Although learner reciprocity is an essential indicator for learner development, a relatively limited number of studies have focused on this topic (Ableeva, 2018). In this section, we briefly review DA-based research that examines learner reciprocity, and the reciprocity moves identified by these studies are illustrated in Appendix 2.

The study by van der Aalsvoort and Lidz (2002) was one of the first to focus on learner reciprocity. They introduced a rating scale for responses to mediation and argued for the criticality of reciprocity in the mediation process. Building on this work, Poehner (2005) started a new discussion on learner development based on learner reciprocity and was the first to discuss learner development in relation to learner reciprocity. He presented a hierarchy of reciprocity typology listed according to the level of responsibility the learner takes for their independent performance, but emphasized that it is challenging to establish a fixed order for these moves, and that the order should be understood in terms of the context in which the interaction took place.

Although Poehner (2008) identified only five reciprocity moves, such as "negotiating," "rejecting mediation," and "seeking mediator approval," he argued that reciprocity is not solely about responding to mediation but also about asking for

more help, or even rejecting mediation. Poehner (2008) also highlighted that a higher level of learner reciprocity indicates interlanguage development and learner autonomy, and asserted that the level of learner reciprocity could only be interpreted by contextualizing it within mediator-learner interactions. He argued that reciprocity moves are as crucial as mediational moves in diagnosing learner development, and that the identification of possible mediating and reciprocity moves in L2 interactions would be beneficial to promote learning in the classroom.

“Imitation,” another reciprocity move, was introduced by Ableeva (2010). This is considered a process that leads to development (Vygotsky, 1998). Poehner (2005) also discussed a similar move, “repeating the mediator,” which is comparable to the action of imitating but may have a different underlying intention. In this case, the learner simply repeats the mediator without making any structural change, even when such change is needed. This may be because the target form is too complex and beyond the learner’s current level of ability. We assume this may also occur when the learner lacks voluntary attention, which is considered a higher mental function (Vygotsky, 1987a), leading them to mindlessly repeat the mediator’s words without engaging in voluntary thinking, although this assumption requires further investigation in future research. In contrast, when attempting to internalize the correct form, the learner engages in intentional “imitation.” As described by Lantolf and Thorne (2006; 176), “imitation” is an “intentional, complex, and potentially transformative process.” However, drawing on the Vygotskian perspective on learner development (Vygotsky, 1998), Ableeva (2010) argued that all of these reciprocity moves could be categorized into two types, regressive and progressive. In her study, progressive moves outnumbered regressive moves, and there was an increase in progressive moves over time.

Learner reciprocity in academic writing in distance education was first investigated by Shrestha and Coffin (2012). They identified 15 reciprocity moves and revealed nuanced aspects of learner development across multiple levels. They also emphasized that the type or frequency of these moves depends on the individual learning style or ability and the learner’s potential for development. Shrestha (2020) expanded this discussion by adding another reciprocity move to the reciprocity typology: suggesting a solution. The reason these studies report so many reciprocity moves can be attributed to their specific focus on learners’ academic writing, which revolves around subject-related content. Thus, moves such as “asking for content clues” can emerge.

Ebadi and Rahimi (2019) examined the impact of online (Google Docs) dynamic assessment on academic writing through one-to-one interactions. The findings revealed two novel reciprocity moves: overgeneralization of mediation and changing appropriate pieces of writing into inappropriate ones. However, this study did not identify any content-related reciprocity moves. Similarly, although

their focus was on academic writing, Vakili and Ebadi (2019) did not report any new content-related reciprocity moves. These authors examined learner reciprocity in face-to-face and computer-mediated (CM) environments, and found that the CM context could enhance the thinking ability of learners, as it fostered reflective communication.

A review of the existing literature gives rise to two main findings: (i) studies of DA using synchronous CM communication are limited; and (ii) there is a need for more studies of learner reciprocity in DA-based interactions, mainly because learner reciprocity is context-based, and it is beneficial to identify possible reciprocity moves that could occur in L2 interactions. This study aims to fill these gaps by examining the learner reciprocity that may emerge within the context of text chat communication. The following research questions were formed:

1. What specific types of learner reciprocity moves can be observed within text chat-mediated DA?
2. How do these reciprocity moves reveal the learner's potential for development?

The Study

The data for this study were drawn from an extensive work (Udeshinee et al., 2024) in terms of the scope of its findings, in which a DA-based regulatory scale was redesigned to promote language learning in a text chat environment. However, this study examines learner reciprocity in context where this regulatory scale was used to assist learners. The study was conducted in Sri Lanka, where English is taught as a second language.

Participants

Eight university students and four teachers volunteered for the study. The students were taking a certificate course in English at the university, which was mandatory for those who had not obtained a minimum "S" pass (40%) in General English in their Advanced Level Examination. When the researcher asked for participants for the study, these eight students volunteered. The teachers, who were also colleagues of the first author, volunteered to participate in the study as they were interested in learning about DA, an approach they had not previously used in their classes. Participants received an explanation of the study's purpose and provided informed consent. They were assured they could withdraw from the study any time they wished, with no impact on their university performance. Details of the teachers and students are given in Tables 1 and 2.

	Age	Gender	Qualification
Teacher 1	28	Female	BA in English/MA in Linguistics
Teacher 2	27	Female	BA in English/MA in Teaching Literature (Reading)
Teacher 3	32	Female	BA in English/MA in Linguistics
Teacher 4	28	Female	BA in English/MA in Linguistics

Table 1: Information on Teachers

Study Design

The four teachers were divided into two pairs, and the eight students were divided into four pairs. As shown in Figure 1, each teacher participated in two text chat interactions with learners and in an oral conversation with their partner teacher.

Figure 1 shows the teacher-learner interactions, where the blue arrows represent the interactions that took place via Zoom meetings. In this study, the pairs of students were required to discuss the problem with each other before responding to the teachers. This approach was chosen to examine how the students comprehended the teacher's mediation and regulated their own learning. These interactions helped them discuss their understanding of the teacher's mediation and their responses to the teachers, a process similar to Swain's notion of "languageing" (Swain & Lapkin, 2011), which can lead to self-regulation. Similarly, teachers were required to discuss their feedback with each other before giving it to the learners, for the same reason; however, the conversations between teachers were not analyzed, as teacher mediation or collaboration was beyond the focus of this study. Before this entire interaction, teachers read the story (for the dictogloss activity, which will be explained later) three times in a Zoom meeting where both teacher and learner pairs were present. After the story had been read, the meeting ended, and the interactions began.

	Age	Gender	Specialization
Student 1	22	Male	Business Communication
Student 2	22	Male	Accounting & Finance
Student 3	22	Female	Business Communication
Student 4	22	Female	Business Communication
Student 5	21	Male	Events, Tourism, & Hospitality Management
Student 6	21	Male	Accounting & Finance
Student 7	25	Female	Industrial Management
Student 8	23	Female	Industrial Management

Table 2: Information on Students

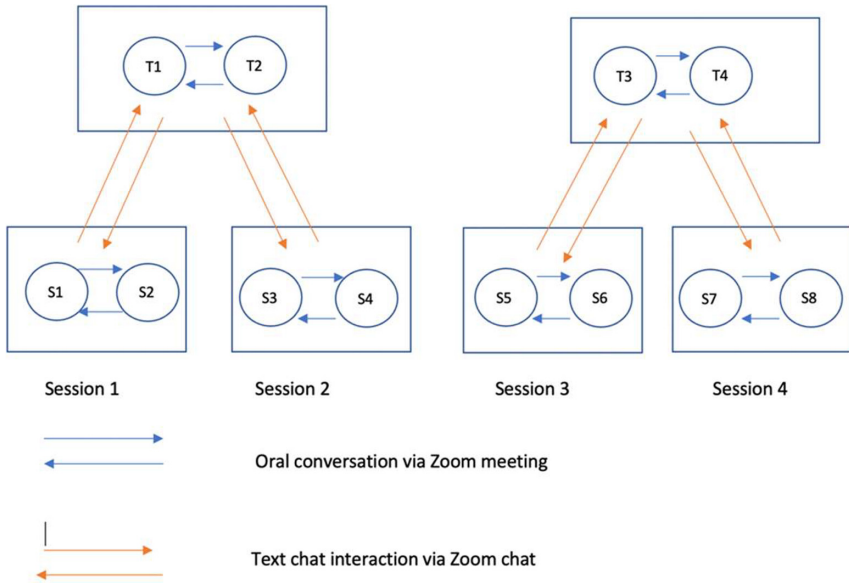


Figure 1: Study design: teacher-learner text chat interactions through Zoom chat

The red arrows represent the teacher-learner text chat interactions. Each teacher pair dealt with only one pair of learners at a time, resulting in a total of four text chat interactions. The first author added the relevant pairs to a chat group, allowing all four members and the first author to access the chat. Learners always discussed their responses, and one learner typed and sent the sentence on behalf of both. The same took place at the teachers' end.

Zoom Chat Channel and Its Use

Zoom (<https://zoom.us/>), a videoconferencing tool widely used in formal education, was used throughout the interaction. Zoom has already been proven valuable in learning contexts (Kohnke & Moorhouse, 2022; Lenkaitis, 2020). It should be noted that the text chat feature (Team Chat) within the Zoom app was used for communication between teachers and students, and it is not the chat option available inside the Zoom meetings. This feature allows for the creation of different chat channels (groups), which were used to set up chat groups with both teachers and students (Figure 2). Thus, four chat channels (with two teachers and two students in each) were created through Team Chat. In addition to the Team Chat option, the meetings option was also used: Teacher dyads communicated with each other via a separate Zoom meeting, and the same happened with the learner dyads.

https://upublishing.com/doi/pdf/10.3138/lst-25392-Udeshinee - Monday, March 30, 2026 9:06:05 PM - IP Address:220.247.221.159

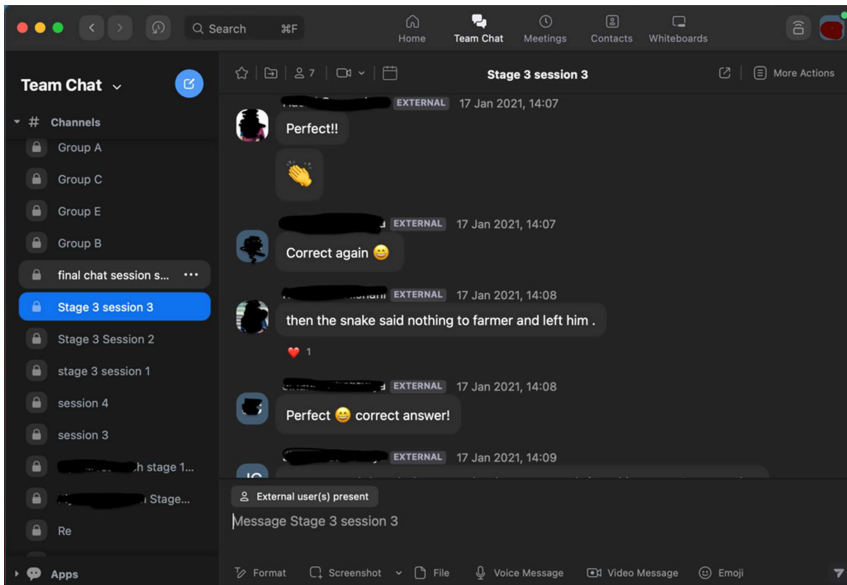


Figure 2: Text chat platform for the teacher-learner text chat interactions

Task

A dictogloss activity focusing on past simple and past continuous tenses, including affirmative, negative, and question forms (Appendix 1), was used as the task for the interaction. A dictogloss activity is a type of “supported dictation,” where the teacher reads a short text several times and the learners try to produce their own version as close to the original as possible. This activity was chosen because it can help learners produce language more effectively than other activities such as jigsaw puzzles, open-ended questions, or spot-the-difference activities (Udeshinee et al., 2024).

The teachers read the story (Appendix 1) three times, and the learners were asked to listen to it and retell it to the teachers via text chat. They were asked to send the story sentence by sentence, to enable teachers to provide feedback on each sentence individually. Learners were asked to wait for the teacher’s feedback before sending the following sentence, so that they could correct their errors, if any, before proceeding.

The DA-Based Three-Phase¹ Regulatory Scale from Implicit to Explicit CF

In this study, we used a DA-based three-phase regulatory scale adapted from Aljaafreh and Lantolf (1994). This scale was redesigned for the text chat platform

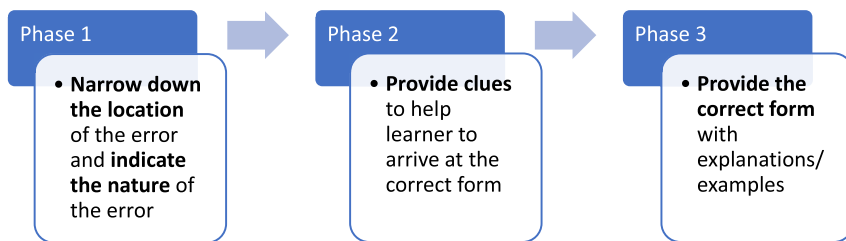


Figure 3: The DA-based three-phase regulatory scale (Udeshinee et al., 2024)

by (Udeshinee et al., 2024) in collaboration with teachers; thus, this scale is a result of both theory and practice.

As shown in Figure 3, this scale had three phases: “Narrow down the location and indicate the nature of the error,” “provide clues,” and “provide the correct form.”

All four teachers received a one-hour preparatory workshop on the use of this regulatory scale. They did not require a detailed workshop on DA, as they had already been introduced to this by the researcher at another workshop. In this one-hour workshop, the researcher used excerpts from the text chat interactions following the design process set out by (Udeshinee et al., 2024).

Data Collection and Analysis

The data presented in this paper were drawn from online interactions between teachers and students in a previous extensive study. The data included text chat transcripts from four sessions (avg. 49 minutes each) and transcripts of learners’ oral conversations in these four sessions (four transcripts). Students’ oral conversations took place in Sinhala, their first language. A three-line transcription was provided: The first line represented the original speech (in the adopted orthography), the second line provided a morpheme-by-morpheme translation, while the third line (in italics) provided a translation, which attempted to capture the local and interactional meaning of the original. These oral conversations between students were transcribed using Jefferson transcription conventions (Stivers & Sidnell, 2013) (Appendix 3).

Most studies analyzing computer-based interactions have applied qualitative analysis using excerpts from interactions, and only a few have adopted a micro-analytical perspective (González-Lloret, 2011). All the transcripts were analyzed using an approach inspired by conversation analysis (CA) to examine the minute details of the interactions. This approach was chosen when analyzing the data as it enables an analysis of not only how learners use language but also how they learn the language (Ellis & Barkhuizen, 2005).

			1. Sequences	2. Actions	3. Understanding of actions	4. Turn-taking	5. Role	6. Conclusions
1	S1	and the farmer asked from the snake why were you bit and hurt me although I saved you.	4:39 PM	Sentence 6/ beginning of the sequence	Erroneous production of language	Students take the turn to produce language	Learner-responsive	Incorporating mediator's feedback each time they receive mediation
2	T1	Please look... into the section 'why were you bit'	4:40 PM	Step 1- location & nature of the error	Prompt to promote learner's independent performance	teachers take the turn to assist learners	Teacher - mediator	
3	T1	When you ask a Wh question, you have to form the question in a different manner	4:41 PM	Nature of the error	Since there is no response for one minute, teacher is trying to be more explicit in step 1	students do not take the turn, so teachers take the turn	Teacher- mediator	
4	T1	*a different	4:41 PM	Self-correction	Thinking that they made a mistake in the previous prompt	Teachers take the turn to self-correct	Teacher - mender	
5	S1	why were you bite	4:43 PM	Second attempt	Incorporating the feedback, still erroneous	students take the turn to correct the error	Learners taking control- more control of their independent performance	
6	S1	why are you bit	4:43 PM	Third attempt	incorporating mediator's feedback, still erroneous	Students take the turn to self-correct, still wrong!	Learners taking control- more control of	
7	T1	S1, you have to use the verb "do" when you form a wh question	4:44 PM	Step2- provide clues	Teachers understand the difficulty of learners and move to step 2	Teachers take their turn after 1 minute	Teacher - mediator is contingent	
8	T1	And you have to change it according to the relevant tense	4:45 PM	Continuation of step 2	Since there is no response, teachers try to be more explicit in step 2	teachers take their turn as learners do not respond	Teacher - mediator is contingent	
9	S1	why did you bite	4:45 PM	Corrects after step 2	Realizes the correct form	students take the turn immediately/ sudden realization of the correct form/ Total 6 minutes to repair the form	learner taking control- more control of their independent performance	
10	T1	That's correct!	4:47 PM	Approves/ end of the sequence	Teacher does not have to move to step 3, as the learners correct the error.		Teacher - mediator	

1. Identifying sequences
2. Characterization of actions
3. Understanding of actions
4. Understanding of turn-taking process
5. Role/ identities
6. Putting it altogether

Figure 4: Example illustrating the process of analysis

Following the methodology suggested by Ellis and Barkhuizen (2005), the data analysis involved several steps. First, the interactions were divided into separate sequences. The learners' formation of a new sentence was considered the beginning of the sequence, whereas the teachers' confirmation of the learners' response (or the learners' acceptance of the teachers' response regarding the same sentence)

was considered the end of the sequence. Simply put, the discussion around one sentence was considered to represent one sequence. Thus, the interactions were divided into separate sequences. The actions within each sequence were then characterized to understand the participants' behavior, with a focus on learner reciprocity. The turn-taking process in the sequence was then examined, including timing and the speaker selection (whether the speaker was self-selected or selected by the prior speaker). This helped us gain a certain understanding of learner reciprocity and self-regulation. In the next step, the roles and identities taken on by the learners in the interactions were explored. Finally, the analyses in the previous steps were integrated to draw conclusions. Figure 4 illustrates how the analysis was conducted.

Findings and Discussion

In this study, we analyzed the reciprocity moves that could be identified when a DA-based regulatory scale was used to assist learners in text chat interactions. A qualitative analysis of the teacher-learner text chat interactions and learners' oral discussions revealed that reciprocity moves could be used to diagnose the learners' potential for development. Learner reciprocity moves emerged in the analysis, and the ways in which learners regulated their learning will be discussed in detail in the following section.

Learner Reciprocity Moves

Any kind of response to mediation, whether acceptable or unacceptable, is considered a reciprocity move (Ableeva, 2018). Five reciprocity moves are listed below (not in any particular order) that emerged from our analysis of the teacher-learner interactions in this study.

- Incorporating the mediator's feedback;
- Imitating the mediator;
- Providing a correct response following the mediator's feedback;
- Seeking the mediator's approval;
- Accepting and acknowledging the mediation.
 - a) Incorporating the mediator's feedback

Regardless of its accuracy, learner reciprocity is vital for learner development, as it enables active engagement in collaboration. It helps teachers assess the learner's current level of understanding and how much more instructional effort might be needed to promote their language development. As argued by Ableeva (2018), development may involve both progression and regression. Thus, regardless of its correctness, if learners attempt to incorporate mediation, we consider it as "incorporating feedback." Previous research (e.g., Poehner, 2005)

has explained this move as incorporating feedback to achieve the correct form; however, our study offers a different perspective. Incorporating feedback can occur in two ways: Learners may incorporate feedback without achieving the correct form, where their active involvement still fosters development; alternatively, they may incorporate feedback to get the correct form, which is considered a separate move in this study, and is classified as providing a correct response following the mediator's feedback. Excerpt 1 illustrates how learners incorporated the teachers' feedback.

Excerpt 1. Extract from the teacher-learner text chat interactions (Group 1)

1	S1	and the farmer asked from the snake why were you bit and hurt me although I saved you.	4:39 PM	Sentence 6/ beginning g of the sequence
2	T1	Please look into the section 'why were you bit'	4:40 PM	Step 1- location & nature of the error
3	T1	When you ask a Wh question, you have to form the question in a different manner	4:41 PM	Nature of the error
4	T1	*a different	4:41 PM	Supposed to be a self-repair, but no mistake
5	S1	why were you bite	4:43 PM	Incorporating feedback, but wrong
6	S1	why are you bit	4:43 PM	An attempt of self-repair, still wrong
7	T1	S1, you have to use the verb "do"when you form a wh question	4:44 PM	Step2- provide clues
8	T1	And you have to change it according to the relevant tense	4:45 PM	Being more explicit in step 2
9	S1	why did you bite	4:45 PM	Giving the correct form / partial self-regulation Corrects after step 2
10	T1	That's correct!	4:47 PM	Approves/ end of the sequence

Lines 5 and 6 in Excerpt 1 show learners attempting to incorporate the mediator's feedback into their language production. Although learners could not produce the correct form even after multiple attempts, their reciprocity moves show that the linguistic features of this question are in the process of "ripening." An analysis of learners' oral conversations during this episode reveals their engagement in the collaboration, and this excerpt indicates learners' potential for development. Whereas Excerpt 1 shows the interaction between teachers and learners on the text chat platform, Excerpt 2 shows the interaction that took place between the learners during the text chat communication in Excerpt 1.

Excerpt 2 contains an oral conversation between the two learners while they were interacting with the teacher through the text chat in Excerpt 1. It illustrates the learners' continuous attempts to incorporate the teacher's mediation into their responses. They were thinking about the use of the verb "to be" until the teachers provided the most essential clue in Excerpt 1, line 7, indicating the need to use "do" in questions. Their sudden realization of the need to use "do" in questions is seen in line 3 of Excerpt 2, and they promptly grasp the correct question form in line 4.

Excerpt 2. Oral conversation between the learners in Group 1

1	A	Why are you bite me(.)	Giving a suggestion
2	B	Na na :: No no ::	Disagreeing
3	A	why do you(.)	Giving another suggestion after teacher's clue
4	B	Why did you nemeйда? not Isn't it why did you?	Realizing the correct form
5	A	why did you (.) (laughing)	Agreeing/realizing the correct form/laughing at their mistake
6	B	Ayyo (.) (laughing) did you bite the neh? Ayyo (.) (laughing) did you bite the right?	Laughing/sounding a bit ashamed of their mistake
7	A	Ow(.) Why did you bite(.) Yes(.) Why did you bite(.)	Repetition
8	B	G miss baniy apita. Scold us G teacher will scold us.	Wondering whether the teacher would scold them
9	A	Ow. Yes.	Agreeing

Lines 5 and 6 show their happiness at achieving the correct form, while line 8 represents their thoughts, wondering whether the teacher would scold them for the mistake. In a way, this shows their realization that this is a mistake they should not have made, and is an indication of self-blame. Despite taking some time to realize their error, the oral conversation indicates potential for learner development. Excerpt 1 shows an eight-minute time frame for error realization, while Excerpt 2 shows their active engagement in regulating their learning. This interaction is likely to have helped them internalize the question form in the past tense.

(b) Imitating the mediator

“Imitating the mediator” is another reciprocity move identified in this study. In this case, “imitation” refers to the learners’ confirmation of their understanding of the correct form, or their attempt to internalize the learned form. The learners’ imitation of the mediator is illustrated in Excerpt 3.

Excerpt 3. Extract from the teacher-learner text chat interactions (Group 1)

1	S1	On cold morning a snake get hungry and went to find foods.	4:03 pm	Sentence 1/ beginning of the sequence
2	T1	ok There's a small issue	4:05 pm	Mediator's feedback
3	T1	On cold morning a snake get hungry"- Can you check this/ There's something wrong in the tense here	4:06 pm	Step 1- location & nature of the error
4	S1	On a cold morning a snake gets hungry	4:07 pm	Second attempt
5	T1	The entire sentence has to be in one tense	4:09 pm	More explicit in step 1
6	T1	On the second half of the sentence which is "went to find foods"you used simple past	4:10 pm	Step 2- provide clues
7	T1	Accordingly, please use the appropriate tense for the first half of the sentence	4:11 pm	With some explanation
8	S1	On a cold morning a snake gets hungry and going to find foods	4:11 pm	3 rd attempt
9	T2	Ok, look at this. The entire sentence should be in one tense.	4:13 pm	Repeating the feedback given in line 5
10	T2	therefore, you have to convert "get" to "got".	4:14 pm	Step 3- provide the correct form
11	T2	the second half of the sentence is correct. so, the correct format is a sane got hungry and went to find food".	4:15 pm	Providing the correct form
12	T2	a snake*	4:16 pm	Self-correction - typo
13	T1	S1, you can send the next sentence now	4:16 pm	Asking to send the next sentence
14	S1	On a cold morning a snake got hungry and went to find food	4:16 pm	Imitation of the mediator
15	T2	correct!	4:17 pm	Approves/ end of the sequence

In Excerpt 3, teachers use all three phases. In lines 4 and 8, learners incorporate teachers' feedback but fail to provide the correct form. Teachers then make their prompts more explicit, but eventually provide the correct form. After receiving the correct form, learners rewrite the correct sentence, realizing the error. Learners' imitation of the teachers' mediation (line 14) indicates their effort to internalize the correct form. An examination of the learners' oral conversation at this time confirms this phenomenon: S1 types the correct sentence while reading it aloud, which requires a cognitive effort. In Vygotsky's view, imitation is not simply a copying activity but "an intentional, complex, and potentially transformative process" (Lantolf & Thorne, 2006). This allows learners to internalize the linguistic rule in question, thereby fostering learner development (Poehner & Ableeva, 2011). In this study, imitation does not imply the learner's inability to comprehend a structure beyond their ability, as reported by (Poehner, 2005); instead, it implies the learner's attempt to understand the mediation or the process of internalizing the correct form as a result of understanding.

(c) Providing a correct response following the mediator's feedback

The following extract highlights the learners' incorporation of the teachers' mediation to provide a correct response. Although the focus of the interaction was on the simple past tense, the teacher also provided feedback on the use of articles. Excerpt 4 shows how the learners corrected their error based on the mediator's feedback.

Excerpt 4. Extract from the teacher-learner text chat interactions (Group 4)

1	S7	At that time farmer passed a snake and snake was frozen	15.02	Sentence / beginning of the sequence
2	T3	Please check the article before the second time you have written "snake"	15.03	Step 1- location & nature of the error
3	T3	the rest of the sentence is correct 😊	15.03	Explaining what is correct
4	S7	The snake was frozen in the road	15.05	providing the correct response after mediator's feedback

Line 4 in Excerpt 4 showcases the learners' provision of the correct response after receiving feedback on their error, indicating partial self-regulation. The students' oral discussion during this text chat interaction is presented in Excerpt 5.

Excerpt 5. Students' oral conversation during the text chat interaction shown in Excerpt 4

S7	Er(o.2)missing the articles () Ewa thamay bang () (.) () hmm hmm	Realizing the error after mediator's feedback
	Those only	
	Er (0.2)missing the articles () only those () (.) () hmm hmm	
S8	Eelangata mokadda bang thiyenne? () (.) Next what Have What do we have next? () (.)	Moving to the next sentence/ seems like correcting the error is not challenging, so they do not discuss the correct form

In Excerpt 5, the learners do not discuss the error, but send the correction. This suggests two possibilities: They either knew the correct form but made a mistake, or they made a correct guess. Regardless of whether this was a guess, this process can still lead to learning, because when the teacher confirms the accuracy, the learner can learn the correct form.

Both partial and complete self-regulation can be observed in these teacher-learner interactions. Learners gradually progress from partial self-regulation to complete self-regulation within the same interaction. In Excerpt 3, they produced the erroneous sentence, "On cold morning a snake get hungry and went to find foods." The teachers then asked them to be consistent in terms of tenses. After a 14-minute exchange of mediation and reciprocity moves, the learners realized the correct form. After another 12 minutes, when the learners had to form a similar sentence, they produced the correct form, achieving complete self-regulation, as shown in Excerpt 6. This demonstrates the application of the rules learned previously, indicating that providing the correct response after mediation can lead to complete self-regulation over time.

Excerpt 6. Extract from the teacher-learner text chat interactions (Group 1)

1	S 1	then he took the snake and put it into his cloths.	4:30 pm	Sentence 4/ beginning of the sequence
2	T 1	This is correct	4:31 pm	Approves/ end of the sequence

(d) Seeking mediator approval

When learners lack confidence about a linguistic rule they are applying, they seek the mediator's approval, which can be considered another reciprocity move that helps them improve their understanding of the correct form. It also demonstrates the level of responsibility for their independent performance. Excerpt 7 illustrates how learners seek the teacher's approval.

Excerpt 7. Extract from the teacher-learner text chat interactions (Group 1)

1	S2	Tha snake being Frozen in thr road at that time farmer found the snake.	15.14	Correction 1
2	T1	You have corrected the spellings of the verb.	15.15	CF – wrong CF
3	S2	is it correct miss	15.16	seeking for mediator approval
4	T1	But you need to add another supporting verb to complete it	15.16	Step 2 – provide clues
5	T1	You need to add a form of 'be 'verb Like is, am, was, were	15.17	Provide clues

Line 3 in Excerpt 7 represents the learners' attempt to seek the mediator's approval. In line 2, the teacher confirms the correction of a spelling error, but does not mention whether the sentence is correct. The learners therefore had to seek the mediator's approval, as they were not confident in their linguistic knowledge. This action led to receiving more clues to the correct form. Notably, there was no instance of seeking assistance, indicating that in this context, learners did not use the mediator as a resource as observed in certain previous studies (Ableeva, 2010; Poehner, 2005).

(e) Acceptance and acknowledgement of the mediation

The findings of this study reveal that there may be several ways in which learners explicitly accept mediation: verbal acceptance of mediation, non-verbal acceptance of mediation, displaying gratitude for the mediation, and being apologetic for the errors made.

(i) Verbal acceptance of mediation

Learners' explicit acceptance of the mediation was seen most often in this study. One method of accepting mediation was acknowledging their acceptance of the mediation. Excerpt 8 shows an example of learners' verbal acceptance of mediation.

Excerpt 8. Extract from the teacher-learner text chat interactions (Group 3)

1	S7	Then, Suddenly the farmer was bitten by the snake and worse hurts	15.21	Erroneous production of language/ beginning of the sequence
2	T4	Good :) But the last part "worse hurts" needs to be changed. Can you redo that part	15.23	Step 1
3	T4	Check the spelling of the word "worse"	15.23	Continuation of step 1
4	S4	is it worst	15.26	Incorporating mediator's feedback
5	T4	No , it should be 'was ' . So needs to be corrected as was hurt.	15.27	Providing the correct form with explanation
6	T4	Then, Suddenly the farmer was bitten by the snake and was hurt	15.28	Providing the correct form
7	S7	ok miss (heart given by S 8 and T4)	15.28	Explicit acceptance of mediator's feedback

Excerpt 8 reveals that the learners did not grasp the underlying linguistic rule for this sentence. The phrase "worse hurts" is an unusual combination not found in the target language, and suggests that learners tried to write the sentence based on how they heard it when the teachers were reading the story, and did not make any cognitive effort to reflect on the form. The use of the correct form, "was bitten" in the first part of the sentence, may be based on auditory input rather than an understanding of the rule. This entire exchange illustrates how the learners' limited abilities resulted in a low level of responsibility for their performance. This was further confirmed by their response in line 7, where they accepted the teacher's mediation; however, mere acceptance of the mediation does not imply internalization of the correct form.

(ii) Nonverbal acceptance of mediation

Text chat interactions, like face-to-face interactions, involve both verbal and non-verbal communication. In Excerpt 9, learners used reactions to express their acceptance or acknowledgement of the mediation.

Excerpt 9. Extract from teacher-learner text chat interactions (Group 1)

1	T4	👍 This sentence is correct. ((👍 by S1 & S2))	1:55 PM	Step 3	Explicit acceptance of mediation through emojis/reactions
---	----	---	---------	-----------	---

Excerpt 9 shows how the learners explicitly accepted the mediation provided by teachers with an emoji. This feature of the text chat platform supports the argument that text chat interaction is somewhat similar to face-to-face conversations, as it also enables non-verbal communication. One advantage of text chat is that it gives teachers and learners enough time to reflect and respond while allowing them to communicate nonverbally (using emojis/reactions) within seconds. Thus, the use of text chat in language development should not be overlooked.

(iii) Displaying gratitude for mediation

Another method learners used to show their acceptance of teachers' mediation was to show their gratitude for the correction. This could have been influenced by their culture, which places emphasis on actions such as showing gratitude, especially toward a teacher. This phenomenon is shown in Excerpt 10.

Excerpt 10. Extract from the teacher-learner text chat interactions (Group 1)

1	S1	He pick up the snake and they put in to clothes.	3:15 PM	Sentence 4/ beginning of the sequence
2	T2	Look at the first half of the sentence Vimukthi. You should change the tense there.	3:16 PM	Step 1 – location and nature of the error
3	S1	He picked up is it correct miss	3:17 PM	Providing correct response after mediator's feedback/ Seeking mediator approval
4	T2	Yes.. good.	3:17 PM	CF- completion
5	S1	Thank you miss	3:18 PM	displaying gratitude for mediation/ end of the sequence

This also indicates that the learners understood their error through the teacher's mediation. Line 3 represents an attempt to seek the mediator's approval, whereas line 5 demonstrates the learners' gratitude for mediation. By incorporating mediation, the learners show a certain level of responsibility for their learning. Showing gratitude for mediation can be considered a means of accepting mediation.

(iv) Being apologetic about the error

Another influence of the culture on learner reciprocity could be the learners' tendency to be apologetic for making language errors. The following extract shows an example of such an instance. Excerpt 11 gives an example of learners being apologetic for their errors.

Excerpt 11. Extract from the teacher-learner text chat interactions (Group 3)

1	S 7	The snake was wormed up in farmers clothes and it began to moved	15.10	Correction 3-completion
2	T4	Can you please recheck the spelling of the word you mentioned as "wormed"	15.12	Correction 1
3	S 7	Is it warm. Sorry my issue	15.15	providing the correct response after mediator's feedback/ being apologetic about the error

Line 3 in Excerpt 11 also suggests that apologizing for errors could be another way of responding to the mediator's feedback; it shows that the learners have understood their error, which is one of the most crucial aspects of language development. This behavior may be influenced by the Sri Lankan cultural context, which emphasizes the respect given to teachers.

Learner Reciprocity Typology

Although studies in the existing literature have identified numerous learner reciprocity moves, only five were observed in this study. Notably, the reciprocity move labeled as "unresponsive," which has been documented in previous studies (e.g., Poehner, 2005), was not identified in the interactions. Although there were one- or two-minute pauses between teachers' and learners' responses, these were not considered unresponsive, for two reasons: (i) learners required time to type their responses, and (ii) the study required them to discuss and respond, so it was as-

	Incorporating feedback	Providing correct response following feedback	Imitating the mediator	Seeking approval	Accepting mediation	Total
Group 1	2	6	–	–	1	9
Group 2	5	6	1	2	5	19
Group 3	2	2	–	–	1	5
Group 4	3	6	–	3	4	16
Total	12	20	1	5	11	49

Table 3: Reciprocity Moves

sumed that they were taking this time to discuss the issue. Each teacher prompt was followed by a learner response, indicating learner responsiveness. Unlike in other studies, the collaboration between learners may have helped them be constantly responsive.

In contrast to the findings of Lantolf et al. (2016), we did not observe learners challenging teachers' answers as a reciprocity move. Learners' responses mainly involved explicit acceptance of mediation, which could potentially indicate a lack of learner autonomy. This may also be due to cultural norms in the Sri Lankan context, where challenging teachers is seen as disrespectful (Marambe et al., 2012). Table 3 reveals that the frequency of reciprocity moves varied across learner groups.

Providing the correct response after the mediation was the most frequent type of reciprocity move; this demonstrates the partial self-regulation of the learner, thus supporting the findings of previous studies (e.g., Shrestha & Coffin, 2012). Partial self-regulation occurs when learners notice and correct their errors with minimal or no intervention. In this context, the learners could correct their errors after they received feedback from the teachers, or they could make further errors; however, most of the time, the learners were able to provide the correct response after they received the teachers' feedback.

The least frequent reciprocity move was imitating the mediator. This reciprocity move may occur for two reasons: to let the teacher know that the learner has understood the correct form, and as an attempt to internalize the correct form. The reason this move was least often used in this context may be due to the written mode of communication used, as learners may have understood and internalized the correction but may not have made an attempt to type it out. In an oral conversation, there may be more opportunities to see them imitating the teacher verbally.

The act of seeking approval was also seen infrequently. Since seeking approval can be considered as an autonomous action of the learner, this may indicate that the learners in this study lacked autonomy.

1. Providing correct response following feedback
2. Seeking approval
3. Incorporating the mediator's feedback
4. Imitating the mediator
5. Accepting the mediation

Figure 5: Typology of learner reciprocity moves

In view of what occurred in the text chat interactions, the reciprocity moves could be ordered based on the level of responsibility that learners took for their performance. To put it simply, each reciprocity move represents the extent to which a learner takes on responsibility for their performance. As argued by Poehner (2005), it is not easy to assign a hierarchical order to reciprocity moves, as they should be understood based on the context in which the interaction takes place. However, Figure 5 shows a learner reciprocity typology in order, from the move that represents the highest level of learner responsibility to the move that represents the lowest.

In this context, the first reciprocity move, “providing correct response following feedback,” represents a higher level of learner responsibility and control compared to the next move, “seeking approval.” The first move shows that the learner has actively made an effort to arrive at the correct form. In turn, seeking approval represents more responsibility for individual performance than incorporating feedback. When incorporating feedback, learners use the mediator’s help to correct errors, but they take a step forward when they seek the mediator’s approval for the accuracy of their language production. In this study, incorporating feedback meant that the learners had incorporated the feedback, although they did not arrive at the correct form. When incorporating feedback, the learner may use the feedback but arrive at a wrong form; however, when the learner seeks approval, they are showing more responsibility for their performance, as they are wondering whether there is an error in their form. Thus, they show more responsibility for their performance when they understand something is wrong, rather than just producing the incorrect form without any understanding of the error. Imitating the mediator reflects an attempt to internalize the correct form but entails a lower level of responsibility compared to incorporating feedback. When imitating the mediator, the learner makes an attempt to internalize the correct form, but when accepting mediation, the learner demonstrates the least responsibility for their individual performance, as it is a relatively passive move compared to the others.

We also analyzed the frequency of the reciprocity moves that indicated learners’ acceptance or acknowledgement of mediation. Table 4 presents the results.

	Verbal acceptance of mediation	Nonverbal acceptance of mediation	Displaying gratitude for mediation	Being apologetic about the error	Total
Group 1	0	0	1	0	1
Group 2	4	0	5	0	9
Group 3	1	2	1	0	4
Group 4	6	0	1	1	8
Total	11	2	8	1	22

Table 4: Frequency of Reciprocity Moves Indicating Acceptance and Acknowledgement of Mediation

Table 4 reveals that verbal acceptance of mediation was the most frequent move, whereas being apologetic about errors was the least common. Although learners were sometimes apologetic or thankful, there was no instance in which they showed disagreement or rejected the mediation. Learners may reject the mediation for two reasons: they may be confident they can work independently without mediation, or they may mistakenly ignore the mediation. However, this reciprocity move indicates the learner is striving to gain complete self-regulation, and that they are taking responsibility for achieving it. This shows an autonomous outlook by the learner, which can be considered an important aspect of development.

However, the learners in this study did not use the reciprocity move of rejecting the mediation. One reason for this could be that the students understood the corrections given by the teacher, and there was nothing to disagree with. Another possible reason might be that they did not want to disagree with the teacher or reject the teacher's feedback. This would indicate less autonomy and responsibility. However, it is important to note that these moves may be specific to the learning context, and that the characteristics of individual learners cannot be generalized to other learning contexts. Thus, it would be interesting to focus on research into the strategies that are available to improve the level of reciprocity of learners.

Conclusion

This paper has discussed various moves of learner reciprocity in teacher-learner interactions using a DA-based three-phase regulatory scale. Through an analysis of learners' oral conversations and teacher-learner text chat interactions, we explored the minute details of these interactions to examine learners' responsiveness to mediation.

Five reciprocity moves could be identified: incorporating the mediator's feedback, providing a correct response following the mediator's feedback, imitating the mediator, seeking the mediator's approval, and accepting and acknowledging mediation. These findings align with those of previous studies that reported similar reciprocity moves (Ableeva, 2018; Lantolf et al., 2016; Poehner, 2008; van der Aalsvoort & Lidz, 2002). In addition, several ways of accepting or acknowledging teachers' mediation were identified in this study: verbal acceptance of mediation, nonverbal acceptance of mediation, displaying gratitude for mediation, and being apologetic about the error. The last two moves may stem from the norms of politeness and respect embedded in Sri Lankan culture.

We can conclude that these reciprocity moves contribute to the diagnosis of the learners' current level of development, thereby helping teachers assess how much more assistance might be needed to promote their development. The findings of this study provide CALL researchers and teachers a theoretical understanding and empirical grounding for DA in synchronous text-mediated communication.

Limitations and Future Work

Learning is an individual process, meaning that these findings cannot be generalized to every learning context. The three-phase regulatory scale was also specifically designed for elementary-level students, and may not suit advanced-level learners; for example, indicating the nature and the location of the error in a single phase may be too explicit for advanced-level learners. Thus, more research is needed with regard to advanced learners. Furthermore, this scale may not be suitable for oral interactions, as grasping both the nature and location of an error simultaneously could be challenging.

In this study, rather than focusing on the individual ZPD, the teacher's mediation focused on the ZPD of both students. This group ZPD therefore represents a new dimension that should be considered in future research, especially when DA is implemented in the classroom.

Moreover, although teachers had taken part in a workshop on the DA-based regulatory scale, there were variations in how they implemented it. For example, though they were trained to focus on the past tense, they occasionally addressed other forms based on the learners' needs. These minor differences in implementation may have affected the results. In addition, we note that following the DA workshops conducted with teachers, their use of DA was not evaluated before the study was conducted. An evaluation of the teachers' use of DA prior to implementation would be helpful in future work. For further research, we suggest investigating the same scenario in an actual classroom, with several groups of learners, in order to explore group ZPD.

Note

1. This scale is called the “three-step scale” in the original study (Udeshinee et al., 2024). However, we refer to it as a three-phase scale here, as in the first and the second steps, there may be several mediating moves, meaning that the term “phase” is more appropriate than “step.”

References

- Ableeva, R. (2010). *Dynamic assessment of listening comprehension in second language learning* (Issue August) [The Pennsylvania State University]. https://etda.libraries.psu.edu/files/final_submissions/5374
- Ableeva, R. (2018). Understanding learner L2 development through reciprocity. *The Routledge handbook of sociocultural theory and second language development*, (pp. 266–281). <https://doi.org/10.4324/9781315624747>
- Aljaafreh, A., & Lantolf, J.P. (1994). Negative feedback as regulation and second language learning in the Zone of Proximal Development. *The Modern Language Journal*, 78(4), 465–483. <https://doi.org/10.1111/j.1540-4781.1994.tb02064.x>
- Andujar, A., & Salaberri-Ramiro, M.S. (2021). Exploring chat-based communication in the EFL class: Computer and mobile environments. *Computer Assisted Language Learning*, 34(4), 434–461. <https://doi.org/10.1080/09588221.2019.1614632>
- Bakhoda, I., & Shabani, K. (2019). Enhancing L2 learners’ ZPD modification through computerized-group dynamic assessment of reading comprehension. *Innovation in Language Learning and Teaching*, 13(1), 31–44. <https://doi.org/10.1080/17501229.2017.1286350>
- Barabadi, E., Khajavy, G.H., & Kamrood, A.M. (2018). Applying interventionist and interactionist approaches to dynamic assessment for L2 listening comprehension. *International Journal of Instruction*, 11(3), 681–700. <https://doi.org/10.12973/iji.2018.11346a>
- Dao, P., Nguyen, M.X.N.C., Duong, P.-T., & Tran-Thanh, V. (2021). Learners’ engagement in L2 computer-mediated interaction: Chat mode, interlocutor familiarity, and text quality. *Modern Language Journal*, 105(4), 767–791. <https://doi.org/10.1111/modl.12737>
- Ebadi, S. (2016). Mediation and reciprocity in online L2 dynamic assessment. *Call-EJ*, 17(2), 18–42.
- Ebadi, S., & Asakereh, A. (2017). Developing EFL learners’ speaking skills through dynamic assessment: A case of a beginner and an advanced learner. *Cogent Education*, 4(1), 1–18. <https://doi.org/10.1080/2331186X.2017.1419796>
- Ebadi, S., & Rahimi, M. (2019). Mediating EFL learners’ academic writing skills in online dynamic assessment using Google Docs. *Computer Assisted Language Learning*, 32(5–6), 527–555. <https://doi.org/10.1080/09588221.2018.1527362>

- Ellis, R., & Barkhuizen, G. (2005). Conversation analysis. In *Analysing learner language* (pp. 197–228). Oxford University Press.
- Giguère, C., & Parks, S. (2018). Child-to-child interaction and corrective feedback during eTandem ESL-FSL chat exchanges. *Language Learning & Technology*, 22(3), 176–192.
- González-Lloret, M. (2011). Conversation analysis of computer-mediated communication. *CALICO Journal*, 28(2), 308–325. <https://doi.org/10.11139/cj.28.2.308-325>
- Henderson, C. (2019). 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>
- Herazo, J.D., Davin, K.J., & Sagre, A. (2019). L2 dynamic assessment: An activity theory perspective. *Modern Language Journal*, 103(2), 443–458. <https://doi.org/10.1111/modl.12559>
- Izadi, M., Khoshsima, H., Nourmohammadi, E., & Yarahmadzahi, N. (2017). Advanced and upper-intermediate EFL learners' reciprocity to mediation: A dynamic listening assessment. *Applied Research on English Language*, 6(4), 523–542. <http://dx.doi.org/10.22108/are.2018.108533.1210>
- Kohnke, L., & Moorhouse, B.L. (2020). Facilitating synchronous online language learning through Zoom. *RELC Journal*, 53(1), 296–301. <https://doi.org/10.1177/0033688220937235>
- Lantolf, J.P. (2009). Dynamic assessment: The dialectic integration of instruction and assessment. *Language Teaching*, 42(3), 355–368. <https://doi.org/10.1017/S0261444808005569>
- Lantolf, J.P., Kurtz, L., & Kisselev, O. (2016). Understanding the revolutionary character of L2 development in the ZPD: Why levels of mediation matter. *Language and Sociocultural Theory*, 3(2), 153–171. <https://doi.org/10.1558/lst.v3i2.32867>
- Lantolf, J.P., & Poehner, M.E. (2004). Dynamic assessment of L2 development: Bringing the past into the future. *Journal of Applied Linguistics*, 1(1), 49–72. <https://pure.psu.edu/en/publications/dynamic-assessment-of-l2-development-bringing-the-past-into-the-f>
- Lantolf, J.P., & Thorne, S.L. (2006). Sociocultural theory and the genesis of second language development. In *Language and education*. Oxford University Press. <https://doi.org/10.2167/le127b.0>
- Lenkaitis, C.A. (2020). Technology as a mediating tool: Videoconferencing, L2 learning, and learner autonomy. *Computer Assisted Language Learning*, 33(5–6), 483–509. <https://doi.org/10.1080/09588221.2019.1572018>
- Marambe, K.N., Vermunt, J.D., & Boshuizen, H.P.A. (2012). A cross-cultural comparison of student learning patterns in higher education. *Higher Education*, 64(3), 299–316. <https://doi.org/10.1007/s10734-011-9494-z>

- Ozkose-Biyik, C., & Meskill, C. (2015). Plays well with others: A study of EFL learner reciprocity in action. *TESOL Quarterly*, 49(4), 787–813. <https://doi.org/10.1002/tesq.205>
- Poehner, M.E. (2005). *Dynamic assessment of oral proficiency among advanced L2 learners of French*. The Pennsylvania State University.
- Poehner, M.E. (2008). Both sides of the conversation: The interplay between mediation and learner reciprocity in dynamic assessment. In J.P. Lantolf & M.E. Poehner (Eds.), *Sociocultural theory and the teaching of second languages* (pp. 33–57). Equinox.
- Poehner, M.E., & Ableeva, R. (2011). Dynamic assessment: From display of knowledge to engagement in the activity of development. In D. Tsagari & I. Csépes (Eds.), *Classroom-based language assessment* (pp. 15–28). Peter Lang.
- Poehner, M.E., Davin, K.J., & Lantolf, J.P. (2017). Dynamic Assessment. In E. Shohamy, I.G. Or, & S. May (Eds.), *Language testing and assessment. Encyclopedia of language and education* (3rd ed., pp. 243–256). Springer. <https://doi.org/10.1007/978-3-319-02261-1>
- Poehner, M.E., & Lantolf, J.P. (2005). Dynamic assessment in the language classroom. *Language Teaching Research*, 9(3), 233–265. <https://doi.org/10.1191/1362168805lr1660a>
- Qin, T., & Zhang, J. (2018). Computerized dynamic assessment and second language learning: Programmed mediation to promote future development. *Journal of Cognitive Education and Psychology*, 17(2), 198–213. <https://doi.org/10.1891/1945-8959.17.2.198>
- Rassaei, E. (2021). Implementing mobile-mediated dynamic assessment for teaching request forms to EFL learners. *Computer Assisted Language Learning*, 36(3), 257–287. <https://doi.org/10.1080/09588221.2021.1912105>
- Razagifard, P. (2013). The impact of text-based CMC on improving L2 oral fluency. *Journal of Computer Assisted Learning*, 29(3), 270–279. <https://doi.org/10.1111/jcal.12000>
- Satar, H.M., & Özdenler, N. (2008). The effects of synchronous CMC on speaking proficiency and anxiety: Text versus voice chat. *Modern Language Journal*, 92(4), 595–613. <https://doi.org/10.1111/j.1540-4781.2008.00789.x>
- Sauro, S. (2009). Computer mediated corrective feedback and the development of L2 grammar. *Language Learning & Technology*, 13(1), 96–120.
- Shrestha, P., & Coffin, C. (2012). Dynamic assessment, tutor mediation and academic writing development. *Assessing Writing*, 17(1), 55–70. <https://doi.org/10.1016/j.asw.2011.11.003>
- Shrestha, P.N. (2020). Teacher mediation, learner reciprocity and academic writing development. In *Dynamic assessment of students' academic writing* (pp. 115–149). Springer. <https://doi.org/10.1007/978-3-030-55845-1>
- Stivers, T., & Sidnell, J. (2013). Introduction. In J. Sidnell & T. Stivers (Eds.), *The handbook of conversation analysis* (1st ed., pp. 1–8). Blackwell Publishing Ltd. <https://doi.org/10.1002/9781118325001>

- Swain, M., & Lapkin, S. (2011). Linguaging as agent and constituent of cognitive change in an older adult: An example. *Canadian Journal of Applied Linguistics (CJAL)/Revue Canadienne de Linguistique Appliquée (RCLA)*, 14(1), 104–117. <https://journals.lib.unb.ca/index.php/CJAL/article/view/19869>
- Udeshinee, W.A.P., Knutsson, O., Barbutiu, S.M., & Jayathilake, C. (2024). Re-designing a regulatory scale for dynamic assessment in the synchronous text chat environment in collaboration with teachers. *Computer Assisted Language Learning*, 37(7), 1527–1553. <https://doi.org/10.1080/09588221.2022.2092153>
- Vakili, S., & Ebadi, S. (2019). Investigating contextual effects on Iranian EFL learners' mediation and reciprocity in academic writing. *Cogent Education*, 6(1), 1–26. <https://doi.org/10.1080/2331186X.2019.1571289>
- van der Aalsvoort, G.M., & Lidz, C.S. (2002). Reciprocity in dynamic assessment in classrooms: Taking contextual influences on individual learning into account. *Learning Potential Assessment and Cognitive Training*, 7(June 2016), 111–144.
- Vygotsky, L.S. (1987a). Some major themes in Vygotsky's theoretical work. An introduction. In R.W. Rieber & J. Wollock (Eds.), *The collected works of L.S. Vygotsky: Problems of the theory and history of psychology* (Vol. 3). Springer Science & Business Media.
- Vygotsky, L.S. (1987b). The development of Vygotsky's thought: An introduction. In R.W. Rieber & A.S. Carton (Eds.), *The collected works of L.S. Vygotsky: Problems of general psychology*. Springer US.
- Vygotsky, L.S. (1998). The problem of age. In R.W. Rieber (Ed.), *The collected works of L.S. Vygotsky: Child psychology* (pp. 187–206). Springer.
- Wajnryb, R. (1990). *Grammar dictation*. Oxford University Press.
- Warschauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. In *The Modern Language Journal*, 81(4), 470–481. <https://doi.org/10.2307/328890>
- Yang, Y., & Qian, D.D. (2020). Promoting L2 English learners' reading proficiency through computerized dynamic assessment. *Computer Assisted Language Learning*, 33(5–6), 628–652. <https://doi.org/10.1080/09588221.2019.1585882>

About the Authors

Piyumi Udeshinee has a PhD in Information Society from the Department of Computer and Systems Sciences at Stockholm University, Sweden. Her research focuses on computer assisted language learning, dynamic assessment, second language acquisition, virtual exchanges and Use of AI for language development.

Ola Knutsson has a PhD in Human-Computer Interaction and is an Associate Professor at the Department of Computer and Systems Sciences at Stockholm University. His research focuses on the participatory design of learning and work environments, the use of design patterns, and research on digital literacy.

Sirkku Männikkö Barbutiu is an Associate Professor at the Department of Computer and Systems Sciences at Stockholm University. She holds a PhD in Human-Machine-Interaction, and her research interests are ICT for development, technology-enhanced learning, computer-mediated communication, social media, ICT in teacher education, digital humanities, digital media ethics, and action research.

Appendix 1

On a cold day in winter, a snake was very hungry. He went out to find food. It was snowing. The snake was frozen on a road. At that time, a farmer passed by, and he saw the snake. He picked up the snake and then put it into the farmer's clothes. The snake was warmed up and it began to move. The farmer was very happy. Suddenly, the snake bit the farmer and the farmer got hurt. He asked the snake, "Did you hurt me?" The snake said, "Well, you saved me, but now you have caught me, too." The farmer was very angry and said, "I saved you, but you bit me." Then the snake said nothing and left the farmer.

(Wajnryb, 1990)

Appendix 2

(van der Aalsvoort & Lidz, 2002, p. 122)	(Poehner, 2005)	(Poehner, 2008)	(Ableeva, 2010)	(Shrestha & Coffin, 2012)	(Ozkose-Biyik & Meskill, 2015)
<ol style="list-style-type: none"> 1. Responsiveness of interaction with mediator 2. Self-regulation of attention and impulses 3. Affective quality of interaction with mediator 4. Communication related to shared activity 5. Comprehension of activity demands 6. Use of mediator as resource 7. Reaction to challenge 8. Modifiability in response to interaction 	<ol style="list-style-type: none"> 1. Unresponsive 2. Repeats mediator 3. Responds incorrectly 4. Requests additional assistance 5. Incorporates feedback 6. Overcomes problem 7. Offers explanation 8. Uses mediator as resource 9. Rejects mediator's assistance 	<ol style="list-style-type: none"> 1. Negotiating mediation 2. Use of mediator as a resource 3. Creating opportunities to develop 4. Imitates mediator 5. Incorporates feedback 6. Accepts mediator's assistance 7. Rejects mediator's assistance 	<ol style="list-style-type: none"> 1. Requests a replay 2. Uses mediator as an evaluator 3. Uses mediator as a resource 4. Imitates mediator 5. Incorporates feedback 6. Accepts mediator's assistance 7. Rejects mediator's assistance 	<ol style="list-style-type: none"> 1. Asking for task clarification 2. Unresponsive 3. Limiting the mediator 4. Using the mediator as a resource 5. Checking conceptual understanding with mediator 6. Responding incorrectly 7. Asking for content clues 8. Identifying the problem 9. Explaining the problem 10. Evaluating mediator/feedback 11. Self-assessing 12. Incorporating feedback 13. Verbalizing conceptual understanding 14. Rejecting the mediator's feedback 15. Overcoming problems 	<ol style="list-style-type: none"> 1. Learner agency 2. Using teacher and peers as resources 3. Responding to teacher and peers 4. Affective dimensions of the interactions 5. Self-regulating attention 6. Reacting to challenge 7. Seeking opportunities for improvement
<ol style="list-style-type: none"> 1. Providing an answer 2. Accepting or challenging the answer provided by the mediator 3. Requesting explanation for the form 4. Explaining the rationale behind the (incorrect) answer 	<ol style="list-style-type: none"> 1. No response to mediation 2. Correcting some errors, missing others 3. Changing correct structures into incorrect ones 4. Overgeneralization of previous mediation 5. Backsliding and regression 6. Incorrectly responding 7. Asking for more help 8. Solving problem 9. Learners justifying their responses 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Imitating the mediator 3. Requesting a replay 4. Seeking the mediator's assistance 5. Using mediator as an evaluator 6. Using mediator as an evaluator only 7. Checking conceptual understanding with mediator 8. Asking for content clues 9. Operating on a feedback 10. Making guesses or inferences 11. Identifying the problem 12. Explaining the problem 13. Evaluating the mediator feedback 14. Self-assessing 15. Verbalizing conceptual understanding 16. Rejecting the mediator's feedback 17. Overcoming the problem 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Missing academic writing skills 2. Dealing with some academic writing skills, missing others 3. Changing appropriate pieces of writing into inappropriate ones 4. Overgeneralization of previous mediation 5. Backsliding and regression 6. Responding incorrectly 7. Asking for more help 8. Solving problems 9. Appropriately and explaining the reason behind their choices 	<ol style="list-style-type: none"> 1. Missing the opportunity for independent correction by learners 2. Meeting some academic errors and missing others 3. Wrong appliance of mediation 4. Negative transfer of mediation 5. Incomplete appliance of mediation 6. Wrong corrections 7. Requesting for different forms of mediation 8. Checking their understanding of mediation 9. Correcting errors
<ol style="list-style-type: none"> 1. Providing an answer 2. Accepting or challenging the answer provided by the mediator 3. Requesting explanation for the form 4. Explaining the rationale behind the (incorrect) answer 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Missing academic writing skills 2. Dealing with some academic writing skills, missing others 3. Changing appropriate pieces of writing into inappropriate ones 4. Overgeneralization of previous mediation 5. Backsliding and regression 6. Responding incorrectly 7. Asking for more help 8. Solving problems 9. Appropriately and explaining the reason behind their choices 	<ol style="list-style-type: none"> 1. Missing the opportunity for independent correction by learners 2. Meeting some academic errors and missing others 3. Wrong appliance of mediation 4. Negative transfer of mediation 5. Incomplete appliance of mediation 6. Wrong corrections 7. Requesting for different forms of mediation 8. Checking their understanding of mediation 9. Correcting errors
<ol style="list-style-type: none"> 1. Providing an answer 2. Accepting or challenging the answer provided by the mediator 3. Requesting explanation for the form 4. Explaining the rationale behind the (incorrect) answer 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Missing academic writing skills 2. Dealing with some academic writing skills, missing others 3. Changing appropriate pieces of writing into inappropriate ones 4. Overgeneralization of previous mediation 5. Backsliding and regression 6. Responding incorrectly 7. Asking for more help 8. Solving problems 9. Appropriately and explaining the reason behind their choices 	<ol style="list-style-type: none"> 1. Missing the opportunity for independent correction by learners 2. Meeting some academic errors and missing others 3. Wrong appliance of mediation 4. Negative transfer of mediation 5. Incomplete appliance of mediation 6. Wrong corrections 7. Requesting for different forms of mediation 8. Checking their understanding of mediation 9. Correcting errors
<ol style="list-style-type: none"> 1. Providing an answer 2. Accepting or challenging the answer provided by the mediator 3. Requesting explanation for the form 4. Explaining the rationale behind the (incorrect) answer 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Unresponsiveness 2. Repeating mediator 3. Responding incorrectly 4. Incorporating feedback 5. Overcoming problems 6. Offering explanations (beginner only) 7. Using mediator as a resource 8. Rephrasing (advanced learner only) 	<ol style="list-style-type: none"> 1. Missing academic writing skills 2. Dealing with some academic writing skills, missing others 3. Changing appropriate pieces of writing into inappropriate ones 4. Overgeneralization of previous mediation 5. Backsliding and regression 6. Responding incorrectly 7. Asking for more help 8. Solving problems 9. Appropriately and explaining the reason behind their choices 	<ol style="list-style-type: none"> 1. Missing the opportunity for independent correction by learners 2. Meeting some academic errors and missing others 3. Wrong appliance of mediation 4. Negative transfer of mediation 5. Incomplete appliance of mediation 6. Wrong corrections 7. Requesting for different forms of mediation 8. Checking their understanding of mediation 9. Correcting errors

Table A 1: Types of Learner Reciprocity

Appendix 3

Symbols taken from the Jefferson glossary of transcript symbols

(0.0) Numbers in parentheses indicate elapsed time in silence in tenths of a second; for example, (1.3) represents one and three-tenths of a second.

(.) A dot in parentheses indicates a tiny “gap” within or between utterances. These are likely to be no more than one-tenth of a second.

:: Colons indicate prolongation of the immediately preceding sound. The length of the colon row indicates the length of the prolongation.

↓↑ Arrows indicate shifts to a higher or lower pitch than would be indicated by just the combined stress/prolongation markers.

. A full stop indicates a downward intonation at the end of or over the course of a word.

? A question mark indicates an upward intonation of the whole word.

() Empty parentheses indicate the transcriber’s inability to hear what was said. The length of the parenthesized space indicates the length of the untranscribed talk. In the speaker-designation column, empty parentheses indicate an inability to identify a speaker. (word) Parenthesized words are especially dubious hearings or speaker identifications.

(()) Double parentheses contain transcribers’ descriptions, rather than (or in addition to) transcriptions.