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Learning Outcomes Generated through the Collaborative Processing of Expert Peer Feedback

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ABSTRACT

Background. Studies have shown that the collaborative processing of feedback on a jointly produced text facilitates language learning in a traditional classroom. However, it is still unknown whether there are similar learning benefits when the feedback is provided through an online modality from an expert peer during an international virtual exchange (IVE).

Purpose. The present study fills this gap in the literature by investigating Japanese learners engaged in processing written corrective feedback from expert language users in the United States.

Methods. Qualitative data concerning students' perceptions of learning outcomes were collected via retrospective interviews and narrative frames, then triangulated with their first and final drafts of written texts and analyzed using activity theory (AT).

Results. Findings indicate that learning benefits accrued in areas of language skills such as vocabulary, spelling, and grammar, as well as deepening learners' reflexive awareness of themselves as language users.

Conclusion. A discussion of these findings, informed by sociocultural theory and shaped by the categories of AT, brings to light some of the interactional dynamics that contributed to the creation of these outcomes. These interactional dynamics show that the learning benefits of the activity primarily resided in the peer-to-peer interactions rather than interactions with the expert-peer.

KEYWORDS

activity theory, collaborative writing, peer feedback, international virtual exchange, written corrective feedback

INTRODUCTION

International virtual exchange (IVE), also known as telecollaboration (Çiftçi & Savaş, 2017) or online intercultural exchange (O'Dowd & Lewis, 2016), is a rapidly developing field of inquiry. Sadler and Dooly (2016) define these exchanges as "an embedded, dialogic process that supports geographically distanced collaborative work through social interaction, involving a/synchronous communication technology so that participants co-produce mutual objective(s) and share knowledge-building" (p. 402). These mutual objectives usually include two goals: growth in additional language learning and deepening of intercultural competence, with the extant literature showing achievement of these goals is often successful (Avgousti, 2018; Carney, 2006; Çiftçi & Savaş, 2017).

When researching student interactions in virtual exchange, peer feedback on writing is a particularly worthy avenue of inquiry, not least because it can facilitate opportunities for additional language development (e.g., Díez-Bedmar & Pérez-Paredes, 2012; O'Dowd, 2020) but is also often something that students find worthwhile and enjoyable (Ennis et al., 2021). Very often feedback in an IVE is received at the level of the individual, with the learning outcomes of participants in an IVE who collaboratively process peer feedback provided by expert peers on jointly produced texts being

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significantly under-researched. As Storch (2021) highlights, this gap is noteworthy, due to a growing body of research suggesting that talking through responses to feedback on jointly produced texts facilitates language learning (e.g., Brooks & Swain, 2009; Coyle et al. 2018; Storch & Wigglesworth, 2010).

This study seeks to add to this body of research in two ways. First, it aims to provide more specific detail on the type of knowledge learners co-construct when collaboratively processing peer-feedback in an online modality. Secondly, this investigation endeavors to provide a rich description on how learners approached the task of collaboratively processing the feedback and identify factors which influenced the activity's outcome. Data were collected from student work, narrative frames and interviews; the authors used activity theory (AT) to investigate the experiences of Japanese learners of English who received expert peer feedback from American learners of Japanese.

Novices Helping Novices: Face-to-Face and Computer-Mediated Peer Feedback

Several studies have investigated peer feedback on writing, and the collaborative processing of feedback, using a sociocultural theory (SCT) framework. Informed by a Vygotskian view of development, research has shown that the co-construction of knowledge is not limited to traditional expert–novice interactions, but includes novices pooling their resources to form a collective expert (Donato, 1994) and shaping and reshaping cognition as learners discuss language use (Swain, 2006). De Guerrero and Villamil (1994, 2000) and Villamil and de Guerrero (1996, 1998, 2019) investigated language learners receiving feedback from their peers orally in a face-to-face language learning classroom. All five studies revealed that learners were able to support each other despite no traditional expert being present, enabling learners to perform at a level higher than they could individually. Additionally, the support was often bidirectional, because each member of the dyad assisted the other to find solutions, rather than the traditional one-way, didactic, expert-novice type interaction (Villamil & de Guerrero, 2019).

Another means of employing a collective expert is for learners to collaboratively process a teacher's feedback on jointly produced texts. Such studies have shown that participants can co-construct knowledge during text construction (Brookes & Swain, 2009) and through the interactions initiated by teacher feedback (Brooks & Swain, 2009; Storch & Wigglesworth, 2010). Furthermore, the process of talking about the feedback with a peer has been argued to be a key factor in facilitating the construction of knowledge (Coyle et al. 2018; Swain, 2006).

Sociocultural theory posits that changes in one's environment lead to changes in additional language learning processes (Lantolf & Poehner, 2014). Therefore, the findings of peer feedback in traditional face-to-face environments should not be assumed to hold true in computer-mediated environments. The medium of feedback delivery and its timing, either synchronous (oral or text) or asynchronous (oral or text with a delay), have been shown to influence the nature and quantity of peer feedback and the author's engagement with it (Chang, 2012; Guardado & Shi, 2007). Furthermore, as Guardado and Shi point out, the influence of computer-mediated peer feedback on learning cannot be described in simple categorical terms as more or less beneficial than traditional face-to-face peer feedback.

One benefit of computer-mediated peer feedback is that it is less face-threatening when compared to face-to-face discussions (Liu & Sadler, 2003). Additionally, it has been argued that the online environment frees peers from the embarrassment of communicating in the additional language when learners share the same dominant language (Jones et al., 2006). When the online environment ensures anonymity, the honesty and level of criticism in the feedback has been found to increase (Guardado & Shi, 2007; Strenski et al., 2005). Despite these advantages, the level of engagement when responding to peer feedback has been reported as lower when using asynchronous computer-mediated peer feedback (Chang, 2012; Guardado & Shi, 2007). Guardado and Shi argued this was partly due to online communication requiring more effort than face-to-face interactions. Synchronous computer-mediated peer feedback has been found to result in less engaging discussions between peers than face-to-face discussions (Chang 2012; Liu & Sadler, 2003); the reasons for this range from learners going off task (Schulz, 2000) to difficulty in understanding turn taking and a lack of paralinguistic cues (Liu & Sadler, 2003).

Expert Peers Helping Novices: Feedback in IVEs

Advances in communication technologies enable novices to receive feedback from geographically distant expert language users. This process, referred to as tandem language learning, involves expert peers and novices coming together to support each other in learning the other's language (O'Rourke, 2005). Expert peers are foreign language learners, closely related in age to the novices, and expert users of their peers' target language. They can provide feedback via synchronous or asynchronous interactions.

The small body of research into text-based synchronous feedback suggests that synchronous text feedback results in a low percentage of error correction. Bower and Kawaguchi (2011) performed a comparative analysis of synchronous and asynchronous corrective feedback provided in an eTandem project. Their study, involving language learners of Japanese and English, found that synchronous text interactions produced very low rates of corrective feedback: 0.8% of total errors in English sessions and 4.1% in Japanese sessions. In contrast, Lee's (2006) study found a much higher rate of

correction, with 73% of learners' errors receiving feedback. However, the expert speakers in this study were language teachers, which probably inflated the rate of correction. Iwasaki and Oliver (2003) paired adult native speakers of Japanese with learners of Japanese in Australia, and found their synchronous chat exchanges resulted in 14% of errors receiving implicit corrective feedback. However, the study was unable to conclude whether this feedback resulted in actual language learning.

Synchronous, webcam-based interaction was studied by Konishi (2017). The interactions were between groups of three, with each group consisting of one dyad of Japanese learners and one Australian student. While there is no evidence that negative (corrective) feedback on language use was exchanged, there is evidence that positive feedback in terms of exposure to language produced by expert peers, being understood and sharing a communicative experience increased learners' motivation to study and willingness to communicate. Indeed, it seems likely that the format of the exchange influences the type of feedback given. Díez-Bedmar and Pérez-Paredes (2012) compared digital forums with wikis, and found that feedback in the forums was more affective and goal-oriented, whereas feedback in the wikis focused more on language form: specifically, morphosyntactic and lexical concerns.

This kind of feedback on form does not naturally occur in interaction without explicit instruction. Ware and O'Dowd (2008), taking a sociocultural approach, studied peer feedback and attention to form in asynchronous writing. They found that participants desired written feedback on form, but only provided it when explicitly instructed to do so, suggesting that corrective feedback does not emerge spontaneously during interactions. Bower and Kawaguchi (2011) supported this conclusion. Despite finding an almost total absence of corrective feedback during synchronous interaction, they observed that when instructed to provide corrections by email after learners participated in online chat, over 60% of errors were corrected.

Students tend to trust feedback from a classmate (defined in this paper as a near peer) less than feedback from a teacher, believing that near peers may lack sufficient knowledge (Sengupta, 1998, cited in Hyland & Hyland, 2006.) An expert user of the target language, however, is in a better position to make linguistic evaluations. Even so, Díez-Bedmar and Pérez-Paredes (2012) found that a small amount of feedback from expert peers was rejected when the writer believed it to be incorrect.

Aranha and Cavalari (2015) supplemented asynchronous, text-based feedback with synchronous, spoken feedback from expert peers in institutionally integrated teletandem. After making written comments and corrections on writing produced by their overseas partners, learners then engaged in online discussion of those corrections. Learners' direct corrections focused on form, especially spelling, prepositions, vocabulary, accuracy, and verb form. However, Aranha and Cavalari found that this approach to correction, by being prescriptive and thus impeding their partners' exercise of their own learning strategies, did not align with their pedagogical goals of promoting autonomous and collaborative foreign language learning.

Significance of this Study

IVEs in an Asian context have been the subject of little research to date (Çiftçi & Savaş, 2017; O'Dowd & Lewis, 2016). Additionally, within the extant literature on the provision of feedback on writing, the learning potential of feedback provided by expert peers remains under-researched. In the few studies of feedback provided by expert peers, participants have worked individually throughout the writing process (Díez-Bedmar & Pérez-Paredes, 2012; Ware & O'Dowd, 2008), with the research mainly focusing on the quality and quantity of feedback and not exploring the experiences and learning outcomes of participants. However, an emerging body of research suggests that learners benefit from working collaboratively in both the production of texts and processing of subsequent asynchronous feedback (e.g., Coyle et. al, 2018). Consequently, there is a need to investigate learners working collaboratively throughout the whole writing process when receiving expert peer feedback in an IVE to study their experiences and learning outcomes.

This study aimed to contribute to these under-researched areas by providing a rich description of the outcomes that Japanese university students identified as arising from discussing expert peer feedback on jointly produced texts during their participation in an IVE with American college students. Furthermore, this study aimed to contribute to our understanding of *how* and *why* these outcomes came to be. Based on these aims, the following research questions were developed:

RQ1. What are the outcomes of Japanese university students collaboratively processing expert peer feedback on jointly produced texts?

RQ2. What interactional dynamics within the dyad contributed to the creation of these outcomes?

METHODS

IVE Program Design

A case study methodology was adopted to explore the research questions presented above. The subject of investigation, or bounded instance (Nunan & Bailey, 2009), was an IVE program conducted between two language classes. Participants in the first class, titled English Writing I, were first-year English students at a Japanese university (n=15). Partic-

ipants in the second class, titled Advanced Japanese, were third- and fourth-year students at a university in the U.S. (n=16). Participants were divided into four groups. Three groups comprised four U.S. and four Japanese students, and one group had four U.S. and five Japanese students. The program had two stages: Stage 1 consisted of an asynchronous video exchange, in which students introduced themselves to their partners; Stage 2 was a collaborative writing task. This paper focuses on the second stage.

This study sought to illuminate how learning processes and IVE program outcomes are affected when the active agent is a dyad, rather than a sole individual. It did this by focusing on dyads and one group of three (henceforth referred to as a dyad for expediency), exploring how the students at the Japanese university worked together to process feedback on a piece of collaborative writing. After the Japanese (JP) students completed their jointly produced text, it was then shared with a group of expert peers in the partner school (US students). The US students were instructed to provide feedback on the language and content of the text written in the target language (see Figure 1). In addition to receiving some training in methods and types of feedback (such as focusing on content or form), all participants were experienced language learners. Consequently, it was judged that they possessed the necessary meta-linguistic knowledge for commenting on peers' writing. They were instructed to provide feedback to their partners on linguistic forms that they perceived as incorrect, in a condition that Ware and O'Dowd (2008) termed e-tutoring. This is qualitatively different to another form of interaction, tandem language learning, which adheres to the principle of learner autonomy and thus rejects prescribed sequences of tasks (O'Rourke, 2005).

After having received feedback, each dyad reflected on the feedback and decided collaboratively how to respond. The importance of reflective practice during IVEs has been affirmed repeatedly in the literature (Bueno-Alastuey & Kleban, 2016; Lewis et al., 2016; Martí & Fernández, 2016; Müller-Hartmann & Kurek, 2016). Often this takes the form of individual reflection in a written journal or teacher-guided reflective sessions. Collaborative reflection is a way to encourage learners to externalize their emerging knowledge and support each other in learning (Swain, 2006). The writing process was run over four weeks, as shown below.

Week 1: Dyads collaboratively produced a written report.

Week 2: These reports were uploaded to a shared online folder. Individuals from the partner school then read the reports and gave feedback in the form of written comments.

Week 3: Dyads collaboratively processed the feedback and revised the report.

Week 4: Reports were submitted to the class teacher for evaluation.

Data Collection and Analysis

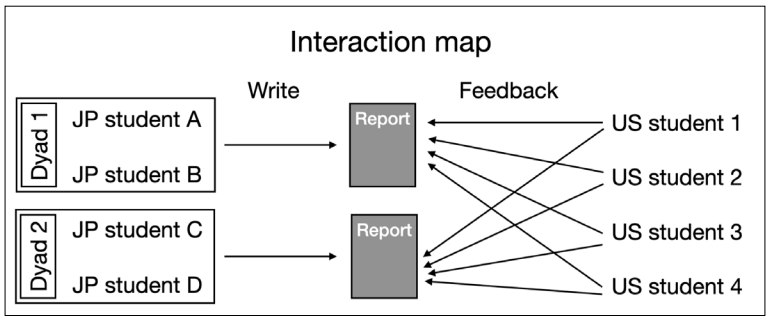
Data were collected via three main instruments: documents related to participants' writing tasks, narrative frames, and semi-structured interviews. Data from these three sources were gathered consecutively and triangulated. This follows Yamagata-Lynch's (2010) recommendation that researchers engaging in activity systems analysis collect data that address both observable behavior and cognitive mental activities. The documents from the writing tasks provide a record of observable behavior, while narrative frames and semi-structured interviews gave insight into participants' mental activities and the thought processes that guided that behavior.

The first data source, documents from the exchange, includes the collaboratively written first drafts of the students' reports, expert peers' written feedback, and the final drafts of the reports. These documents were all created and shared online, then exported as PDF documents and imported into NVivo 12 for coding.

The second data source was narrative frames; these are essentially a series of sentence completion tasks, woven together in a logical and cohesive sequence, which scaffold the writer and provide a guide for narrating experiences (Barkhuisen & Wette, 2008). They provide students with time and space to reflect on their responses and to express their ideas freely (see Appendix). These narrative frames aimed to elicit data concerning how students processed feedback,

Figure 1

Provision of Expert Peer Feedback



evaluated learning gains, and experienced the IVE overall. As three participants did not return their narrative frames, twelve completed narrative frames were collected and the data were input into a spreadsheet and coded according to each category in the narrative frame.

The third source of data was semi-structured interviews with six of the Japanese students, who were randomly chosen by the class teacher. Interviews were conducted by one of the authors who was not the class teacher, and answers were elicited in both English[1] and Japanese. These interviews aimed to capture deeper insights into the *how* and *why* of participants' experiences within the IVE-experiences which may not have been captured in the narrative frames due to their written mode, use of English only, and inability to follow up on points of interest. After transcribing the interviews, each researcher coded all the data using NVivo. The coding scheme was created deductively by the researchers working in consultation and according to the foci of the study. A coding comparison query was performed in order to obtain a statistical measure of inter-rater reliability. After a process of negotiated agreement, a kappa coefficient of 0.8 was achieved, indicating good reliability.

Interpretation of Activity Theory

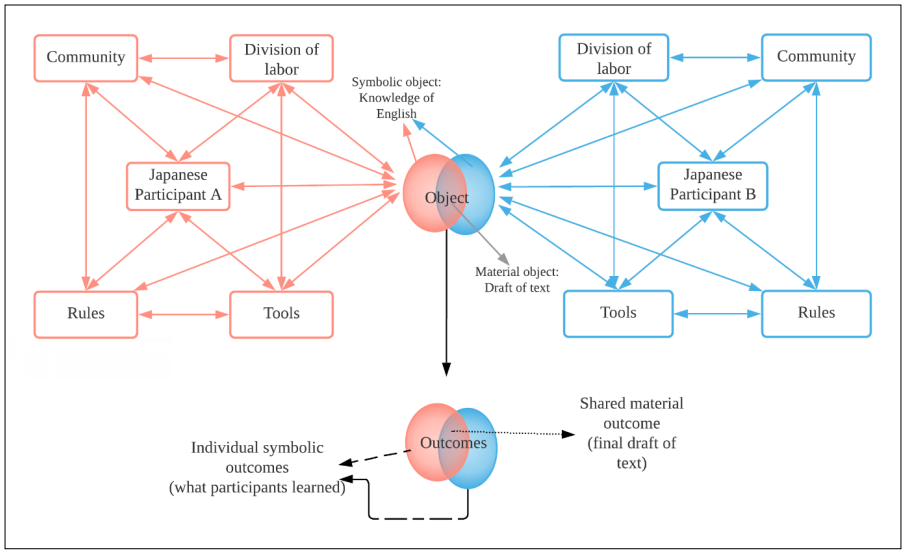
Data were analyzed through the lens of AT. In addition to AT being used in previous investigations of IVEs (e.g., Antoniadou, 2016; Müller-Hartmann & Kurek, 2016; Nishio & Nakatsugawa, 2020; Priego & Liaw 2017), the theory met the aims of the current study. AT is capable of facilitating a rich description of a learning activity (Barahona, 2015) and further developing our understanding of collective human behavior (Yamagata-Lynch, 2010). Additionally, AT is a useful framework when data has been collected from multiple sources (Yamagata-Lynch, 2010). Finally, AT allows Miles and Huberman's (1994, p. 61) "prior and inductive" approach to be employed—with themes emerging naturally from the data initially and later being ascribed to the pre-existing categories of AT. For example, participants' use of online dictionaries and translation software was first coded as "online resources", which was then assigned to AT's pre-existing category of tools.

Central to our interpretation of AT is the work of Engeström (1987, 2001) and Wells (2002). Engeström further developed the second generation (G_2) of AT to more explicitly highlight the interdependent relationship between an activity and a participant's social environment and historical background when acting upon an object. In other words, AT G_2 allows one to ask: how are aspects such as a participant's perceived rules of the activity, the tools available and the community interacting to influence a participant's experiences in the IVE? A third generation (G_3) of the theory was developed later to facilitate the description of multiple participants' perspectives.

The object (or thing which is acted upon) of an activity is both symbolic and material (Wells, 2002). When participants jointly processed feedback and edited the first drafts of their texts, they simultaneously acted upon the text (the material object) and their individual knowledge of English (the symbolic object). Therefore, any activity will produce two outcomes: symbolic and material (Wells, 2002). In this study, the material outcome was the second draft of the report participants wrote. The symbolic outcomes were any changes to each participant's individual knowledge of the English language. A visual representation of this interpretation of AT is provided in Figure 2.

Figure 2

Interpretation of AT G_3 With Two Learners Processing Peer Feedback



[1] Participants had, on average, studied English for six years and are CEFR B1, with some willing and able to express themselves in English.

While the visual representation of AT G_3 in Figure 2 was adapted from Engeström's (2001) original diagram, it is not a new interpretation of the theory. The authors' intention was to emphasize that all participants act upon the same material object and simultaneously upon individual symbolic objects (i.e., their knowledge of English), and that the outcomes include a shared material outcome and individual symbolic outcomes. The aim of this study was to determine the individual symbolic outcomes and to understand how aspects of the activity system interacted to influence them. When presenting how aspects of the activity system influenced participant outcomes, it is important to note that these are dynamic and constantly changing (Cole, 1996). Therefore, the factors presented in this study are not argued to be constant, but rather provide insight into the learning of participants at a particular point in time.

Findings

This section presents the answers to both research questions. In addressing the first research question, the symbolic outcomes of the activity for the Japanese participants are presented. In response to the second research question, the section describes how aspects of the activity system interacted to influence the symbolic outcomes described in the first research question.

RQ1. What are the outcomes of Japanese university students collaboratively processing expert peer feedback on jointly produced texts?

In both the interviews and narrative frames, all participants described the expert peer feedback positively. While the symbolic outcomes of collaboratively processing this feedback were unique to each individual, all outcomes identified by participants can be described as knowledge that is either more concerned with language production or more concerned with reflexive understanding. Knowledge of linguistic production was identified as that which led to improved proficiency in the mechanical aspects of language use, such as vocabulary, spelling, grammar, and expression. In contrast, reflexive understanding was more concerned with norms of behavior and patterns of interaction.

In answering RQ1, these outcomes are presented separately. However, they are often interdependent and should not be construed as being able to be disaggregated cleanly. All participant quotes are presented verbatim.

Improved Proficiency in Language Production

The term "improved proficiency in language production" refers to instances in which a participant identified an instance of learning that can be described in terms of language form, meaning or usage (e.g., learning the new form of a word or appropriate preposition that accompanies a lexeme). Data from both the narrative frames and interviews show that the most common specific linguistic outcome identified by participants was concerned with vocabulary usage. Comments exemplifying this include:

> *"[I learnt] how to use 'that's why', 'also' and 'spend time'" (Natsumi, narrative frame)*

> *"[I learnt] my mistakes such as starting the sentence from 'and' ..." (Ayaka, narrative frames)*

> *"... we wrote cheaper than, but American student said 'more cheaply'. I didn't know about to write 'more cheaply'." (Michina, retrospective interview)*

Instances of improved proficiency in language production tended to be visible in the material outcome. For example, in Natsumi's first draft, she and her partner wrote the following sentence:

> *"We think watching movies is the best way to take a holiday." (Natsumi and Mao, first draft)*

Natsumi and Mao's expert peer feedback deleted the word "take" and inserted the lexeme "spend", with their final draft becoming:

> *"We think watching movies is the best way to spend a holiday." (Natsumi and Mao, final draft)*

In her narrative frame, Natsumi stated that she learnt "spend time", rather than the phrase "spend a holiday". It therefore appears that this outcome was not merely memorized or copied verbatim, but rather internalization had begun to take place. This is due to her explication of the outcome displaying some characteristics of imitation—with imitation being goal-directed and transformative behavior (Vygotsky, 2012) and thus entailing some transformation of language form rather than verbatim copying. Ayaka's outcome of not beginning sentences with the lexeme "and" was also visible in the final draft of her jointly produced text. In the first draft, Ayaka and Kyoko used "and" to combine ideas in two separate sentences as follows:

> *"Don't travel even though you feel sick. And something like others." (Ayaka & Kyoko, first draft)*

The expert peer feedback was provided in Japanese and stated "*machigatta bunpō* [incorrect grammar]". In the final draft of their text, Ayaka and Kyoko changed the sentences to the following:

> *"Don't travel even though you feel sick, and things like this." (Ayaka & Kyoko, final draft)*

As Michina's comments show, knowledge concerning vocabulary was not limited to usage, but included new forms of previously known vocabulary. Michina noted she learnt the adverbial form of "cheap". Michina and her partner originally used the adjective in its comparative form in their first draft as follows:

> *"We can travel cheaper than usual because of the campaign." (Michina & Chiako, first draft)*

The expert peers highlighted the sentence and commented that "the word 'travel' is a verb, so we should use an adverb after it instead of adjective." This led Michina and Chiako to write the following:

> *"We can travel more cheaply than usual because of the promotion." (Michina & Chiako, final draft)*

Michina appears, to some degree, to have considered the comment to reflect a difference between what she and her expert peers consider natural usage rather than a grammatical error. This is evident because she commented in her interview, "in Japan, 'cheaper than' is fine, but for a native speaker, 'more cheaply than' is right." Additionally, Michina did not display evidence of grasping the concept at a deeper level by explaining the rule that adjectives take the adverbial form when modifying verbs and instead limited her outcome to the specific context of her jointly produced text.

In addition to vocabulary usage, knowledge concerning capitalization in headings was identified as one of the learning outcomes for a participant. The title of Takeko and Mai's text was "A unique service". The ensuing expert feedback was as follows:

> *"When using adjectives and nouns in a title, they have to start with an uppercase letter."*
>
> *(Expert peer feedback)*

This feedback resulted in Takeko and Mai correctly using capitalization for the title of their text in its final draft. Upon reflection, Takeko noted in her narrative frame that she learned "when using adjectives and nouns in a title, we should be start with an uppercase letter." In a similar manner to Natsumi, Takeko indicated that she had gone beyond merely copying the correct answer or feedback she received and begun the process of internalization, which allowed her to transfer the knowledge to new situations.

Improved Reflexivity in Language Understanding

Eleven of the 12 narrative frames touched on the notion of cultural knowledge being an outcome of the IVE as a whole. More specifically, seven participants described the symbolic outcome of receiving expert peer feedback in terms of gaining insight into how more proficient peers perceive their English usage. When elaborating on their outcomes during the retrospective interviews, all but one participant identified the benefit of understanding how their language usage was perceived by an expert as an outcome of receiving expert peer feedback. Responses exemplifying this include:

> *"I realized that for the American students, those expressions were considered unnatural or incorrect … The English vocabulary we use, the meaning is the same but they are expressions that the American peers do not use." (Shohei, retrospective interview)*

> *"I learn a lot of things … we used the word demerit, but … demerit is a little strange for New York students … demerit and merit is a little Japanese English, right?" (Tomoe, retrospective interview)*

Participants' comments indicate that they perceived the expert peer feedback as providing them with the opportunity to view their language use through the eyes of an expert peer. This outcome appears to be more than the expert peers merely pointing out mistakes that the Japanese students were unable to notice themselves; it seems to be more concerned with differences in interpretation of lexis, stylistic features and highlighting the unnaturalness of potentially grammatically correct sentences. Examples of the expert peer feedback which helped facilitate these outcomes are shown in Table 1.

As shown in Table 1, participants followed the advice of their expert peers. Participants did not identify these instances of feedback as resulting in constructing linguistic knowledge concerned with the meaning or usage of lexis. Rather, they described the learning as understanding how expert peers perceived their language usage. In other words, participants came to realize that the same utterance may be interpreted differently by users of the language with a

Table 1

Expert Feedback and Revised Text Excerpts

Participants	Original wording	Expert peer feedback	Revised wording
Shohei and Tomoe	These days, we have to refrain from going out somewhere	Somewhere is implied in the context of going out	These days, we have to refrain from going out
	For the first time, we are going to write about	Firstly/First, we are going to write about how we can do anything from our homes	First, we were going to write about
Tamotsu, Tomoe & Rio	It is peculiar to Japan	'unique' or 'distinct' works here. Peculiar is correct, but uncommonly used this way. 'Peculiar' *ka* [acceptable] 'distinct' *yoi* [good] 'unique' *yuu* [best]	It is unique to Japan
	… there are some demerits of it	'Demerits' *no imi ha warui ten demo mezurashii. Menkyo to kōkō dake* [The meaning of 'demerits' is bad points, however it is rarely used. Licences and high schools only.]	… there are some disadvantages of it

different cultural background. Shohei's comments evidence this; he described some of his language use as expressions that expert peers do not use. Tomoe also highlighted this phenomenon when she referred to her use of "demerit" as Japanese-English. While the changes of lexis from the first to final draft are visible in the material artefacts generated from the activity, the symbolic outcomes of understanding how an expert peer viewed participants' usage of the target language are not.

Participants also indicated that the expert peers' feedback concerning their language use was not only highly valued but something which they were unable to experience through their formal studies. It is noteworthy that participants held this perception despite interacting daily with expert English speakers, including native speakers, at university. Comments highlighting this include:

> *"... the content of feedback is I can't study high school or university because it needs to communicate with foreigners directly ... the difference between wasei eigo [Japanese English] and natural English is difficult to understand ... it was great study because they explained to me that some expressions are not usually used." (Tamotsu, retrospective interview)*

Tomoe expressed a similar sentiment, stating "I feel like I was able to come into contact with casual English" during her retrospective interview. In the first draft of Tamotsu's text, his dyad received the following feedback regarding the lexeme "sightseeing":

> *"...people living in Japan can visit sightseeings cheaper than usual." (Tamotsu and Tomoe, first draft)*
>
> *"'sight' ha ii desu [sight is better]. Meishi [noun]: sight/sights Dōshi [verb]: sightseeing."*
>
> *(Expert peer feedback)*

During his interview, Tamotsu explained that "I think, the sightseeings is usually used in English but the sightseeing is not (a location) in English, but sights is used many times. I learnt sightseeing is '*kankōchi*' [tourist site] when I was in high school so I was surprised [by] it." The historical background and context in which Tamotsu first learned the lexeme was being challenged as he experienced how expert users of the language use the term. Tomoe, who was part of Tamotsu's group, described the outcome in slightly different terms, although the sentiment is similar. She described the difference in receiving feedback from an expert peer rather than from her teacher as "coming into contact with casual English." This indicates that she also perceived expert peer feedback as something which she was unable to encounter in her usual English classes.

A second outcome identified by participants as resulting from receiving expert peer feedback was a sense of noticing the gap between their proficiency in the target language and that of their expert peers. Participants did not describe this gap in a self-deprecating manner, but more in terms of how to approach the second draft of their text or future study in the target language. Comments encapsulating this include:

> *"We should reduce mistakes and make more sentences clearly." (Taichi, narrative frame)*
>
> *"We thought we should study English harder." (Manami, narrative frame)*
>
> *"We have to study words choice that formal, casual, soft, or hard to write sentence more naturally." (Mai, narrative frame)*

This symbolic outcome is not visible in the material outcome of the activity. Additionally, participants did not report any of the negative emotions reported in studies such as Lee (2008) and Mahfoodh (2017) despite receiving large amounts of feedback. For example, Shohei and his partner's first draft was 220 words in length and received 16 instances of corrective feedback. However, in his retrospective interview, Shohei commented that despite the large amount of feedback, he "was so happy they made all these corrections. They put so much effort into it for us." These findings corroborate studies such as Mackey et al. (2016) which found learners generally like to be corrected.

RQ2. What interactional dynamics within the dyad contributed to the creation of these outcomes?

AT is not a framework that allows the unit of analysis to be disaggregated (Leont'ev, 1978). Therefore, aspects of the activity system cannot be discussed in isolation. Consequently, the findings for RQ2 are not presented herein as separate categories of the activity system, such as tools and community, but rather highlight how they interacted interdependently to influence the outcomes described in responding to RQ1.

Participants were given the task of editing their jointly produced texts by utilizing their expert peer feedback. The tools participants used to complete the activity were a laptop computer, the expert peer feedback, their individual linguistic knowledge, literary resources such as online translation tools and dictionaries, and their teacher's resources. Participants indicated the primary medium through which they discussed responses to the feedback was their dominant language—Japanese. The rules of the activity and participants' language learning beliefs were interacting in a manner which facilitated the use of these tools. First, participants saw value in (or felt more comfortable) speaking in Japanese rather than restricting themselves to English. Secondly, the use of online literary resources was also perceived as valuable. Thirdly, the rules of the activity permitted use of these tools, with the teacher explicitly giving permission to do so.

During the interviews, participants indicated that the opportunity to discuss the feedback with a near peer was helpful. With the exception of one pair, all participants responded

to the feedback collaboratively. Mao and Natsumi decided to pool their linguistic resources after first attempting to respond to the feedback individually. Despite this, Mao was clear in her interview that she found working collaboratively to be more efficient, stating that "we responded to the feedback individually at first. Then I spoke to Natsumi and we worked together. When talking together, we responded faster and came to understand some feedback." As previously noted, these interactions were mediated through participants dominant language. With participants being of a low-intermediate level, this tool assisted learners to pool their linguistic resources to better understand and respond to instances of feedback.

Furthermore, no participant described the activity of collaboratively processing the expert peer feedback in a manner that suggested any power differences. This suggests the division of labor agreed upon by participants allowed for tasks to be evenly distributed and for participants to feel their ideas were valued and respected. While discussion of the division of labor during text construction is beyond the scope of this study, it should be noted that some participants reported an uneven distribution of tasks and power relations when jointly writing their first draft.

Participants' comments also indicate that the additional tools of their teacher's linguistic support and online literary resources were not used in a delineated manner, but rather were incorporated during interactions as they discussed the feedback. The first manner in which these tools were incorporated was to assist participants find a solution to instances of indirect feedback (feedback which does not provide the correct form of the error). Ayaka described this as follows: "… the ones [instances of feedback] that didn't have the answer, I was confused and not sure. I spoke to my partner 'what's wrong here?' and we didn't know. In the end, we asked our teacher."

The second manner in which these tools were used was to assist participants to either understand the content of the feedback or why the error had occurred. Representative examples of participants working to understand the content of feedback are shown in Table 2.

When reflecting on these instances of feedback, especially the use of the lexemes "ordinal" and "fragment", Shohei commented:

> *There were some aspects we found a little difficult to understand, so I spoke with my partner to understand those aspects … they were difficult. It was quite confusing … we made educated guesses and we used the internet to look into them. (Shohei, retrospective interview)*

Mao and Shohei's comments reveal that additional tools were called upon when the pooling of their own resources was not sufficient to find a solution. Despite 65 of the total 83 instances of feedback explicitly providing the correct form, all participants described the feedback as being difficult to understand. This suggests that rather than participants struggling to find a solution to indirect feedback, the content of the feedback itself was often a challenge for them to comprehend.

Students' perception and use of expert peer feedback was complex and multifaceted. Within the community of the activity, the Japanese participants tended to place the expert peers in a position of authority when it came to discerning proficient target-language usage. Comments included:

> *"Our partners in New York were good at English." (Manami, narrative frames)*

> *"The native speaker wrote us a very neat sentence, and I thought 'so this is the right way of saying it'." (Michina, retrospective interview)*

While positioning the expert peers as the expert is not surprising in itself, the level of expertise participants afforded them was. When asked if she felt the expert peers' feedback was always correct, Ayaka was adamant that this was so, expressing her opinion as follows:

Interviewer:	Do you think that all of the feedback was correct?
Ayaka:	Ah, maybe, I don't think so … I felt that this was mistaken.
Interviewer:	Did you ignore it, or did you feel that your partner was a native, so I should accept the feedback?
Ayaka:	I didn't say, because they are a native … I wouldn't ignore it … I'd follow it.

(Ayaka, retrospective interview)

Table 2

Examples of Feedback Shohei and Manami Found Difficult

Original wording	Peer feedback
October 21th	21st (When you're using an ordinal number, if the ending digit is 1, 2, or 3, it will be 1st, 2nd, or 3rd. If the ending digit is 4 to 9, you will use th after the number)
we are going to write about "we can do anything in our house". Because we …	Sentence Fragment, don't need period

Note. Highlighted text indicates the location of peer feedback.

During his interview, Shohei expressed a similar opinion to Ayaka when he stated that he "thought they must be correct" and that is why he made edits in line with the feedback. Additionally, there were also instances of participants not being satisfied with their own understanding of the expert peer feedback, but still following it. For example, Mao stated "I was not satisfied [with my understanding] but still edited in line with their feedback". These perceptions are reflected in participants accepting 69 of the 83 instances of feedback, with an alternative solution being used on eight occasions and six instances of feedback being rejected. This high level of acceptance is in spite of 18% of the feedback being incorrect.

DISCUSSION

This study corroborates the results of other studies showing that peer feedback facilitates opportunities for language development within an IVE (e.g., Díez-Bedmar & Pérez-Paredes, 2012; Ennis et al., 2021; O'Dowd, 2020). Participants identified several instances of expert peer feedback initiating interactions with their partner which resulted in language development. While the feedback focused on language usage, the most commonly identified outcome was heightened self-awareness and cultural reflexivity in interaction, most commonly expressed as gaining insight into how expert peers, with a different cultural background, interpret and use the target language differently. This indicates that when IVEs focus on language usage, cultural knowledge is still likely to be developed. Additionally, it supports the notion that the symbolic outcomes of collaboration may not be evident in the material outcome (Carr, 2021).

Findings also corroborate studies which have found collaboratively processing feedback as beneficial (e.g., Coyle et al., 2018; Storch & Wigglesworth, 2010), indicating these benefits hold true with expert peer feedback in an IVE. In a similar manner to the interactions studied by Guerrero and Villamil (1994, 2000) and Villamil and Guerrero (1996, 1998, 2000), participants used their dominant language while processing feedback. It would be speculative to state if more or less learning occurred due to participants' high usage of Japanese. However, with dominant language usage reducing feelings of frustration (Butzkamm, 2003) and facilitating continued unbroken interaction (Scoot & de la Fuente, 2008), combined with participants often finding the feedback difficult to understand, it is likely that this tool significantly contributed to the knowledge co-constructed during the activity.

Furthermore, participants drew on additional literary tools, such as online dictionaries and their teacher, when the pooling of their own resources was insufficient to enable a response to an instance of feedback. However, their motives for literary tool usage often differed from those described in Guerrero and Villamil's body of work. In this study, in addition to using literary tools to assist in responding to feedback, participants utilized them to attempt to understand the expert peer feedback. This suggests expert peers would benefit from instruction in how to provide feedback, an argument further strengthened by 18% of the feedback being incorrect and 78% of feedback being direct, despite expert peers being requested to provide indirect feedback. One possible solution to overcoming difficulties in understanding expert peer feedback may be for participants to discuss the feedback in a synchronous online video format.

Despite earlier research indicating that asynchronous feedback results in lower levels of engagement (Chang, 2012; Guardado & Shi, 2007), analysis of participant interviews indicates that the feedback was valued and participants were highly engaged with it. While the reasons for this high engagement are unclear, there are two possibilities: having a co-author with whom to discuss the feedback, and the sense of novelty participants felt while participating in an IVE. As noted previously, participants felt the expert peer feedback facilitated opportunities to acquire knowledge which were unavailable in their daily English classes.

The sense of novelty may also partially explain the positioning of expert peers as always providing correct feedback. While the novelty appears to have had a positive effect on participants' engagement, it also had the drawback of participants sometimes editing in accordance with the feedback, despite doubting its accuracy. This highlights the need for teachers to encourage novices to question, and possibly reject, instances of expert peer feedback.

Because this is a case study of a particular IVE with a small number of participants, generalizations to other populations of learners must be drawn cautiously. However, insights from the findings presented here are hoped to be transferrable to some degree so that educators in other contexts could draw upon them to inform the development of practice in their own institutions. Future research is needed into the effect of feedback type on learning outcomes in collaboratively produced texts, and how expert peers can best be trained to provide that feedback. Additionally, longitudinal research investigating changes in the activity system over multiple episodes of processing feedback will contribute to our understanding of how learners adapt to and utilize the learning opportunities peer feedback in an IVE offer.

CONCLUSION

Within traditional classrooms, it has been observed that talking through responses to teacher feedback on jointly produced writing supports language learning. In this case study, this was also true in a virtual exchange, when the feedback was provided by an expert peer. When collaboratively processing feedback, learners pooled their resources while deeply engaging with the text, which led to growth in knowledge of language in use. Furthermore, some participants

began internalizing this knowledge, leading us to conclude that the linguistic knowledge generated was not ephemeral but had lasting effects for some. Participants also identified a benefit of the activity as gaining an understanding of their language use through the eyes of an expert. Data showed this to be related to participants developing a greater understanding of the interpretation of lexis, stylistic features and the unnaturalness of their writing.

In describing the factors which contributed to the outcome of the activity, results showed that the ability to discuss the expert peer feedback with their partner in their dominant language, combined with additional assistance from online literary resources, played a crucial role in facilitating learning. The pedagogical benefit of expert peer feedback was amplified by the fact that participants enjoyed it. Receiving feedback from an expert user of the target language of a similar age had an inherent authenticity that motivated and inspired participants. While much foreign language learning is mediated through textbooks which usually contain standard or authorized language forms, expert users were able to provide feedback on language as it is actually used. However, expert peers did provide erroneous feedback on multiple occasions, with participants being reluctant to question the accuracy of the feedback they received due to perceiving their study partners as authoritative users of the target language.

A number of pedagogical implications may be transferred to IVEs in other learning contexts. Firstly, we conclude that for language learners taking part in an IVE, interactions with a near peer can be just as important as interactions with an expert peer. Therefore, we recommend teachers provide opportunities for learners to work collaboratively throughout the whole writing process, including a discussion of corrective feedback provided by overseas study partners. Secondly, we recommend learners receive guidance in how the dominant language and online literary resources can be used to enhance learning opportunities when discussing responses to feedback. Finally, we suggest teachers ensure learners understand that while feedback from expert peers is valuable, it is not infallible. Accordingly, language learners should be encouraged to question and, if required, reject feedback. A worthwhile avenue of future research is investigating how expert peers can be trained in feedback provision that is clearer and more understandable and assisting learners gain the confidence to question feedback when appropriate.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHOR CONTRIBUTION STATEMENT

Nicholas Carr: Conceptualization, Methodology, Investigation, Data Curation, Formal analysis, Writing – Original draft, Writing, Review and editing, Visualization

Paul Wicking: Conceptualization, Methodology, Investigation, Formal analysis, Validation, Writing Original draft, Writing – Review and editing, Project administration

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APPENDIX

Narrative frame used in this study.

In this class, I wrote a report together with a classmate. Working with my classmate was helpful because _____ _____. However, _____. Overall, I thought that working with a classmate was _____ _____. I read some reports written in Japanese by students in New York and I wrote some feedback. When I gave feedback to my exchange partners, I felt it was important to _____ _____. This is because _____ .

We received some feedback and comments from our partners in New York. After discussing the feedback with my classmate, we thought _____ . I felt we improved our writing by _____ .

While talking to my classmate, I was able to learn _____ . When communicating with people from another culture, I learned that it is important to_____ .

The most important thing I learned about writing by doing this exchange is _____ .