

Blind Special Education Students Learning: Preparing Future Teachers Psychology

**Mohd Norazmi Nordin¹, Madzlan Abet², Doris Maying²,
Tang Hung Moi², Mohd Saleh Abbas³**

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¹Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia

²Universiti Malaysia Sarawak, Malaysia

³INTI International University, Nilai, Negeri Sembilan, Malaysia

Abstract

This study investigates how 41 pre-service language instructors from the US, Poland, and China (CN) worked together for seven weeks to teach English grammar using computer-aided language learning (CALL). Students from the United States and other countries took part in a tele-collaboration effort to teach grammar to their worldwide peers. Pre-service teachers were surveyed about their grammar teaching methods and how they responded to them, along with their views on the value of tele-collaboration for teaching and learning grammar. Researchers found that (1) implicit teaching techniques were used the most frequently; (2) grammatical forms employed by both implicit and explicit teachers were reflective of the communicative orientation of their exchanges; and (3) learners' uptake (attempts to follow grammatical models provided in input) and the forms they paid attention to reflected their proficiency levels. According to the data, online interactions may assist prospective teachers get hands-on experience teaching communicative grammar.

Keywords: Pre-service teachers; tele-collaboration; international; teacher education, Blind Student, Special Education, psychology

Introduction

Teachers can benefit from tele collaborative exchanges with colleagues from outside the classroom. Researchers have shown that tele collaboration helps students improve their language abilities and performance. Teachers' cognition is shaped by their interactions with other individuals in the context of sociocultural theory. Tele collaboration is an excellent choice for supplementing L2 teacher training courses. Pre-service teacher education courses included tele collaboration, in which students were both interaction partners and L2 experts/instructors. Corrective feedback (CF) has been shown to be useful in improving learners' L2 grammar in tele collaboration. "This study provides a wider view of grammar instruction by looking at how grammar was taught by NS pre-service teachers to NNS peers."

Literature review

Educating future language teachers through tele collaboration

An effective teacher must have the following abilities to engage in tele-collaborative activities: strong "organizational, educational, and technological skills, as well as the proper attitudes and beliefs, language, learners, electronically/digitally mediated communication, collaborative/social interaction, dialogue, and intercultural exchange are all critical concepts in contemporary L2 instruction." Tele-collaboration is an excellent way to get future L2 teachers ready for the technological issues they will face in their classrooms. "Tele collaboration in pre-service teacher education has been shown to have a positive impact on students' social and pedagogical development." Research by O'Dowd in 2021 "focused on the development of tele collaboration's conceptual and procedural abilities, and offered practical training for pre- and in-service teachers from throughout the globe. Kurek and Müller-Harthart (2019) observed that diverse types of communities of inquiry, characterized by self- and co-regulation behaviors and cognitive engagement, were formed."

Using tele-collaboration to teach grammar

Grammaticality is defined as "a system of lexicogrammatical patterns that are used in appropriate ways to make meaning". "There are two ways to effectively teach grammar: explicitly, using strategies like rule presentation and metalinguistic explanation, and implicitly, by drawing learners' attention to form while they are mainly focused on meaning." In light of current guidelines for teaching L2 grammar, tele-collaboration is a good fit. "Most grammar-focused research focuses on the impacts and/or perceptions of CF supplied by non-native speakers (NS) in tandem settings." Metalinguistic feedback was shown to be more beneficial than recasts in Rassaei's (2019) study.

Use of tele-collaboration to teach L2 grammar to "pre-service teachers has been a new, and thus far understudied, avenue of study." Grammatical errors were fixed more often than vocabulary by NNS pre-service and in-service teachers. "Relative clauses, gerunds, run-on sentences, conjunctions, subject-verb agreement, complex phrases, and other grammatical constructs showed some adoption." The EVALUATE Group conducted "a large-scale study with 1,018 participants from 16 European countries in which grammar was not taught." Using more sophisticated language, as an example, the participants wrote in their reflective diaries that their grammatical ability had increased. There are several potential for both teaching strategies and CF building, all of which were mentioned by those who took part in the study.

Researchers have not given enough attention to tele-collaboration in teacher education with an emphasis on grammar instruction. It is our hope that the outcomes of this research, which was conducted as part of an international asynchronous tele-collaboration effort, will help close this knowledge gap. Accordingly, the following inquiries were put forth:

1. "In the email interactions amongst the NS pre-service teachers, what grammatical teaching methods were employed and what replies were elicited?"
2. To what extent did the NS participants' instruction and the replies of the NNS participants target the same grammatical structures?
3. In what ways did the participants appreciate "tele-collaboration for their L2 grammar study and their teacher training, and were there any variations in this regard between the nationality groups?"

Method

"Context and participants"

A total of 45 pre-service language instructors were included in the study, with participants from from the United States (15), Poland (15), and China (15). The Polish and Chinese groups of NNS participants exhibited intermediate English ability, despite the fact that they had all been studying English since elementary school. "The tele-collaboration was meant to help students prepare for teaching English as a second language in US schools." Students from Poland and China were asked to take part in a tele-collaboration that allowed US students to study and teach L2 grammar via online conversations. Participants from the United States were tasked with developing and implementing instructional strategies that would work well in the communicative context of the exchanges. Research on the form-focused education of online interaction has utilised similar arrangements in other research as well (e.g. Spires et al., 2018).

Data collection

A survey and email exchanges were used to gather information. Using an asynchronous communication mechanism was necessary because of the time differences between the three continents and the restricted availability of alternative tools for some of the participants. A random selection of one or two students from each of the seven different nationalities was used to divide the students into seven groups of five or six. Seven weeks had passed since the first exchange of emails. The US students chose the themes for the dialogues from a list supplied by the second author, which mostly dealt with basic cultural problems like family, cuisine, and holidays (see Appendix).

Occasionally, though, Chinese and Polish students sparked discussion on a subject that was later picked up by students from the United States. In order to build intercultural competency, the themes of conversation were intended to generate interactions, principally to provide context for the teaching of grammar, although this component was not included in the current study.

They used to conduct an online survey after the email conversation. Additionally, “the survey had 15 Likert-type questions, 10 of which were assessed in this research, and one open-ended question inviting participants to offer their thoughts on how the tele-collaborative project may be made better.” Some 39% of those who participated filled out closed-ended questions and 30% of those who participated in open-ended questions.

“Respondents' (N = 40) judgments of tele-collaboration in learning and teaching L2 grammar were rated on a six-item measure, while their views on the effectiveness of tele-collaboration in their training as L2 teachers were rated on another six-item scale (four items).” They had an alpha of 0.808 and 0.782, respectively, for their dependability (Cronbach's alpha). The following key was used to grade the responses of those who took part in the survey: “There are five levels of agreement: severe disagreement (1), slightly disagreement (2), neither agreement nor disagreement (3), somewhat agreement (4), and strong agreement (5).”

Data analysis

Qualitative analyses

Metalinguistic guidance, teaching styles, student reactions, and participants' perspectives emerged as three major topics. Inductive and iterative approaches were used to identify the themes that emerged from the data, and a list of codes was compiled for analysis.

Analysis based on data

IBM SPSS was used to examine “the quantitative data from the Likert-type survey questions (Version 25).” For all statistical studies, the significance threshold (p) was fixed at .05. The first step was to construct descriptive statistics for each subsample. Because the data had a non-normal distribution, they were subjected to non-parametric statistical analysis. Three groups' scores were compared using a Kruskal–Wallis test to see if the differences were statistically significant. Mann–Whitney U tests were used to make comparisons between groups. It was also determined that there is a correlation between variables based on the effect magnitude (r).

Results

Email exchanges

Types of teaching

There are several sorts of teaching methods utilized by students in the United States that are referred to as theme types. “Table 1 provides a definition, an example from the transcripts, and the total number of times each code was used, as well as the proportion of times it was really used.”

Table 1 shows that modeling, an implicit approach, was the most often employed method of instruction, in which structures were unobtrusively integrated in the dialogue without the interlocutors being explicitly directed to them. The most often used explicit strategies were task and explicit feedback. The same amount of examples and grammatical resources were supplied. Metalinguistic training was also employed by a few pupils.

The pupils' responses to instruction reveal how closely they adhered to the prescribed grammatical patterns. The codes' meanings and frequencies are shown in Table 2. Following uptake was a lack of uptake, and lastly, an effort to uptake was the most common reaction. 40 occurrences of the “uptake” code were detected in Polish students' emails, while 19 instances “were found in Chinese students' emails.” The Polish “students' emails had nine instances of lack of uptake, whereas the Chinese students' emails contained 23 instances of attempted uptake,” which was more evenly distributed.

Table 1. “Types of teaching”

“Code”	“Definition”	“Example”	“Total” “count” (113)	“Percentage” (100%)
“Modeling”	“supplying model input that is well-structured”	“For three years in high school, I studied Japanese, and for two semesters in college”, I studied Chinese! All three of these languages were enjoyable for me to study, but Korean is the one I use the most often and have kept the best.	60	53%
Task	Creating an assignment to help you improve your grammar	As a challenge, consider the following scenario: You have one million dollars in your bank account. What are the first things you would do with it?	21	19%
Explicit feedback	Observing and/or offering comments on the performance of NNSs	The "present perfect" tense is often substituted in your comments for the "past simple" tense, which we found odd.	13	12%
Examples	Examples that are well-structured to demonstrate the tasks	In the past tense, please describe your weekends to me, for example: At the weekend, I went shopping and purchased a few things.	7	6%
Grammar material	Including supplementary information to enhance the understanding of grammar	A diagram showing how adjectives are ranked.	7	6%
Metalinguistic instruction	Commentary based on grammatical rules	A single statement may do a great deal. Complementing the readability of a piece of writing with a difficult phrase is an effective means of conveying a message. In order to explain complex thoughts in a single phrase, “it is possible to mix complex and compound sentences.”	5	4%

Table 2. “Response to instruction”

“Code”	“Definition”	“Example”	“Total count” (110)	“Percentage” (100%)
“Uptake”	Responding to modeling or explicit teaching by producing grammatically accurate output	It's an odd and enigmatic situation. (Student from China) Use an apostrophe when referring to something as "it's" instead of "it is." (Student in the United States) In the morning, it's raining, but it soon clears up.	58	55%
Lack of uptake	Mistakes in the target or modeled structures are reflected in the output.	Also, you indicated that you like listening to music. (Student in the United States) You may just just listen to them.	34	30%

		(Student from China)		
Attempted uptake	Output that is only partially accurate	<p>“A student at Bethel University, where I'm a junior.” (Student in the United States)</p> <p>“I'm a second-year English major who's making an effort to participate.” Student: (Polish language)</p>	18	15%

Table 3. “Counts of c-units having grammatical structures of interest to students”

Techniques	Structures	Frequency
Techniques that are not explicitly taught “(modeling)”	“Present simple”	24%
	“Past simple”	15%
	“Present perfect”	11%
	“Indefinite article”	8%
	“Definite article”	7%
	“Qualifiers/Intensifiers”	7%
	“Other structures”	28%
	“Total”	100%
In-depth ways to do things “tasks, explicit feedback, examples, grammar material, and metalinguistic instruction”	“Past simple”	35%
	“Compound sentences”	14%
	“Future simple”	13%
	“Other structures”	38%
	“Total”	100%

“Emails with proper grammatical constructions”

“The present simple and past simple tenses were the most often targeted using the implicit modeling technique.” The Polish group exhibited a substantially higher degree of information absorption than the American counterparts. This set of Polish participants had almost identical coding in terms of both taking part and making an effort to participate. When mastering the “lack of uptake” code, Polish speakers of English often run into difficulties with articles and the present perfect tense.

“Participants’ opinions”

The views of the participants are the last focus of the email analysis. Counts for each code are shown in Table 5. The majority of Chinese students' views on L2 learning, the majority of US students' ideas for successful learning, the majority of Chinese students' views on telecollaboration, and the majority of Chinese students' self-evaluation (mainly negative) remarks may all be found in their emails.

According to the “uptake,” “attempted uptake,” and “lack of uptake” codes, some grammatical structures appear more often than others in c-units.

	“Polish students”		“Chinese students”	
“Uptake”	“Present simple”	20%	“Past simple”	5%
	Past simple”	17%	“Compound” “sentences”	5%
	“Compound” “sentences”	9%	“Indefinite article”	2%
	“Indefinite article”	9%	“Other structures”	13%
	“Other structures”	20%		

	“Total”	75%	“Total”	25%
“Attempted uptake”	“Past simple”	12%	“Compound” “sentences”	15%
	“Indefinite article”	5%	“Future simple”	15%
	“Present simple”	5%	“Past simple”	11%
	“Other structures”	7%	“Present simple”	15%
			“Other structures”	16%
	“Total”	29%	“Total”	71%
Lack of uptake	“Indefinite article”	11%	“Present simple”	13%
	“Present perfect”	6%	“Past simple”	8%
	“Definite article”	4%	“Indefinite article”	9%
	“Other structures”	3%	“Future simple”	8%
			“Capitalization”	8%
			“Present perfect”	8%
			“Other structures”	22%
	“Total”	24%	“Total”	76%

“Survey responses Responses to Likert items”

“Table 6 provides descriptive data for participants' views on the usefulness of telecollaboration in the learning and teaching of L2 grammar.” According to Table 6, “somewhat agree” may be observed in “the mean values for the whole sample, which surpassed the threshold of 4.0.” The Chinese group had higher mean values, indicating that they had more favorable reactions. “A Kruskal–Wallis test found a degree of difference between the three groups ($H = 5.885$, $p = 0.053$) that was near to statistical significance.”

Table 5. “Participants’ opinions”

Code	Definition	Example	Total count (46)	Percentage (100%)
Opinion about L2 learning	Views of students on the subject of grammar instruction	Learning a new language may be tedious. To learn a new language, it is essential to remember its vocabulary on a daily basis. (Student from China)	16	35%
Opinion about telecollaboration	Considering its utility, particularly in terms of grammar practice.	Useful for my English grammar studies. In this communication application, I may review and rectify my faults in English grammar that I learned in English class. (Student from China)	13	28%
Suggestions for effective L2 learning	Tips for effective L2 learning	“I try to find native Speakers who I can talk to, but sometimes I also talk with my friends who are also studying Spanish.”	9	20%
“Self-evaluation”	Negative remarks regarding “one's own abilities and/or achievements”	I realized exactly how terrible my English skills are after this event. Every time I send you an email, “I have to consult the dictionary and the translation app on my mobile device.” (Student from China)	8	17%

Table 6. Teaching L2 grammar via remote collaboration: descriptive statistics

Items	“Whole Sample (N = 39)”		“American (n = 15)”		“Polish (n = 15)”		“Asian (n = 15)”	
	M	SD	M	SD	M	SD	M	SD
It's helpful to provide constructive criticism online.	4.10	1.09	3.62	1.04	4.15	0.98	4.54	1.13
Corrective feedback might be helpful when it is provided online.	4.15	1.10	3.69	1.11	4.23	0.93	4.54	1.13
The initiative helped me become “more aware of the formalities of the English language.”	3.87	1.13	3.85	1.07	3.23	1.09	4.54	0.88
My desire to look up words in a dictionary and other reference materials was piqued by the emails I was writing and receiving.	3.74	1.23	3.46	1.27	3.38	1.39	4.38	0.77
I kept a close eye on my language and punctuation while I typed the emails.	4.56	0.64	4.77	0.44	4.69	0.48	4.23	0.83
For both native and non-native English speakers, I was interested in how they used various types of English structures.	4.28	0.79	4.54	0.66	4.23	0.60	4.08	1.04
Total scale	4.12	0.72	3.99	0.55	3.99	0.72	4.38	0.86

Open-ended replies to a survey

As a result of participant feedback, we've included the most common topics, sample replies, and total responses in Table 8. Three comments were labeled as other, which isn't shown here, although two of them had several themes.

Table 7. tele-collaboration for L2 teacher training: descriptive statistics

Items	“Whole Sample (N = 39)”		“American (n = 15)”		“Polish (n = 15)”		“Asian (n = 15)”	
	M	SD	M	SD	M	SD	M	SD
“The telecollaboration was a useful experience in my teacher training.”	3.72	1.00	3.46	1.05	3.46	0.78	4.23	1.01
“I want my future students to learn about other cultures via tele-collaboration.”	4.23	1.06	3.69	1.18	4.31	0.63	4.69	1.11
“I will use online communication in my future language teaching.”	3.95	0.94	3.62	1.12	3.92	0.76	4.31	0.86
“This project helped me understand the value of culture in language teaching and learning.”	4.26	0.96	4.46	1.13	3.92	0.49	4.38	1.12
“Total scale”	“4.04”	“0.77”	“3.81”	“0.84”	“3.90”	“0.45”	“4.40”	“0.87”

Table 8. “Themes from open-ended survey responses”

“Theme”	“Example”	“Total”	American “students”	“Polish” “students”	“Asian” “students”
“Platform/modality”	“I would prefer to use other platforms such as Facebook or Instagram. E-mails are too strict.”	10	2	6	2
Accountability	“Maybe make sure the other students are required to answer for class so we get more responses.”	6	4	2	–
Topics	“There can be more content related to the culture of different countries, such as customs, and some popular expressions can be exchanged.”	5	–	1	4
Expectations/ Awareness	“Hope we can correct each other, and exchange our experiences.”	4	3	1	–
Grouping	“I think it would be helpful if it was more of a one-on-one communication instead of having two English speakers with two Chinese students and two Polish students.”	3	1	1	1

"Accountability for pupils to reply is crucial," say participants from the United States. "Expectations/awareness" was used by students to describe their ideas on grammatical criticism.

Discussion

The researchers found that modeling was most frequently used as a means of eliciting learner-directed input. “This is consistent with the current recommendations for embedding instruction in meaning-rich contexts. The selection of structures targeted in the instruction closely aligned with the communicative orientation of the exchanges, the erroneous use of forms reflected the cross-lingual differences between the Polish and Chinese students, NNS participants' perceptions about the value of tele-collaboration for learning L2 grammar were highly positive.”

“The students who acted as teachers and leaders got experience with providing instruction in an innovative communicative context, the Polish and Chinese participants still benefited from their active participation in the project.” “They suggest that the use of email as the only medium of interaction may have led to some participants' reluctance to participate.”

Conclusions and implications

“Pre-service teachers from three diverse cultural and educational backgrounds were studied in a global tele-collaborative effort for evidence of their grammar teaching and learning behaviors.” The email conversations revealed a variety of grammar education methods, but implicit, non-obstructive methods predominated, supporting the idea that tele-collaboration is best suited for form-focused instruction that emphasizes meaning and discourse. “The NS participants' grammatical categories were in line with the issues covered, and the correctness of L2 usage in the NNS students' output demonstrated their proficiency and linguistic background, with the large number of participation and good assessments of this form of activity's worth for learning L2 grammar and developing teaching abilities, the tele-collaboration's advantages were clear.”

“The findings of this research have consequences for the education of second-language teachers.” For pre-service teachers, tele-collaboration is an important part of teaching them how to pay attention to form in communication and interaction-based tasks. It is important to train future instructors to be aware of cross-linguistic distinctions among

students from different language origins via the use of a multinational tele-collaborative project. “Using transnational tele-collaborative settings to improve prospective teachers' critical multilingual awareness is an additional consequence that is becoming more relevant in assessing L2 instructors in the twenty-first century.” This may be accomplished through immersing instructors in multilingual environments, using trans-language, and analyzing literacy practices in the specific cultures that they teach in. In teacher education programs, comparing grammatical structures and examining form–meaning–use relationships might be a feasible approach.

References

1. Ajabshir, Z. F. (2019). The effect of synchronous and asynchronous computer-mediated communication (CMC) on EFL learners' pragmatic competence. *Computers in Human Behavior*, 92, 169-177. <https://doi.org/10.1016/j.chb.2018.11.015>
2. Alshemali, B., & Kalita, J. (2020). Improving the reliability of deep neural networks in NLP: A review. *Knowledge-Based Systems*, 191, 105210. <https://doi.org/10.1016/j.knosys.2019.105210>
3. Bernstein, J. D., & Woosnam, K. M. (2019). Same same but different: Distinguishing what it means to teach English as a foreign language within the context of volunteer tourism. *Tourism Management*, 72, 427-436. <https://doi.org/10.1016/j.tourman.2019.01.010>
4. Choi, E., Schallert, D. L., Jee, M. J., & Ko, J. (2021). Transpacific telecollaboration and L2 writing: Influences of interpersonal <https://doi.org/10.1016/j.jslw.2021.100855>
5. Doerig, A., Schurger, A., Hess, K., & Herzog, M. H. (2019). The unfolding argument: Why IIT and other causal structure theories cannot explain consciousness. *Consciousness and cognition*, 72, 49-59. <https://doi.org/10.1016/j.concog.2019.04.002>
6. Ene, E., & Upton, T. A. (2018). Synchronous and asynchronous teacher electronic feedback and learner uptake in ESL composition. *Journal of Second Language Writing*, 41, 1-13. <https://doi.org/10.1016/j.jslw.2018.05.005>
7. Hilliker, S. M., & Loranc, B. (2022). Development of 21st century skills through virtual exchange. *Teaching and Teacher Education*, 112, 103646. <https://doi.org/10.1016/j.tate.2022.103646>
8. LAYADI, I. (2018). The Use of Code-switching in Tele-collaboration between Teachers and their Supervisees. <http://dspace.univ-guelma.dz:8080/xmlui/handle/123456789/2491>
9. Legault, J., Fang, S. Y., Lan, Y. J., & Li, P. (2019). Structural brain changes as a function of second language vocabulary training: Effects of learning context. *Brain and cognition*, 134, 90-102. <https://doi.org/10.1016/j.bandc.2018.09.004>
10. Li, S., & Roshan, S. (2019). The associations between working memory and the effects of four different types of written corrective feedback. *Journal of Second Language Writing*, 45, 1-15. <https://doi.org/10.1016/j.jslw.2019.03.003>
11. Ngo, X. M. (2018). A sociocultural perspective on second language writing teacher cognition: A Vietnamese teacher's narrative. *System*, 78, 79-90. <https://doi.org/10.1016/j.system.2018.08.002>
12. O'Dowd, R. (2021). What do students learn in virtual exchange? A qualitative content analysis of learning outcomes across multiple exchanges. *International Journal of Educational Research*, 109, 101804. <https://doi.org/10.1016/j.ijer.2021.101804>
13. Parra-González, M. E., López-Belmonte, J., Segura-Robles, A., & Moreno-Guerrero, A. J. (2021). Gamification and flipped learning and their influence on aspects related to the teaching-learning process. *Heliyon*, 7(2), e06254. <https://doi.org/10.1016/j.heliyon.2021.e06254>
14. Rassaei, E. (2019). Computer-mediated text-based and audio-based corrective feedback, perceptual style and L2 development. *System*, 82, 97-110. <https://doi.org/10.1016/j.system.2019.03.004>
15. Sato, R. (2020). Gestures in EFL classroom: Their relations with complexity, accuracy, and fluency in EFL teachers' L2 utterances. *System*, 89, 102215. <https://doi.org/10.1016/j.system.2020.102215>
16. Spires, H. A., Paul, C. M., Himes, M., & Yuan, C. (2018). Cross-cultural collaborative inquiry: A collective case study with students from China and the US. *International Journal of Educational Research*, 91, 28-40. <https://doi.org/10.1016/j.ijer.2018.07.002>

17. Tagarelli, K. M., Shattuck, K. F., Turkeltaub, P. E., & Ullman, M. T. (2019). Language learning in the adult brain: A neuroanatomical meta-analysis of lexical and grammatical learning. *NeuroImage*, 193, 178-200. <https://doi.org/10.1016/j.neuroimage.2019.02.061>
18. Tao, J., & Gao, X. A. (2022). Teaching and learning languages online: Challenges and responses. *System*, 102819. <https://doi.org/10.1016/j.system.2022.102819>
19. Vinagre, M. (2022). Engaging with difference: Integrating the linguistic landscape in virtual exchange. *System*, 105, 102750. <https://doi.org/10.1016/j.system.2022.102750>
20. Wang, H., Peng, A., & Patterson, M. M. (2021). The roles of class social climate, language mindset, and emotions in predicting willingness to communicate in a foreign language. *System*, 99, 102529. <https://doi.org/10.1016/j.system.2021.102529>