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Voice assistance in task-based learning to mediate EFL texts

The research into voice assistance indicating a positive effect of the application of voice-controlled software on language learning can be challenged in view of its methodological limitations. Also, little is known about the technology use in Task-Based Language Learning (TBLL) as only one empirical study has been undertaken with this aim so far. To address these research gaps, we conducted a quasi-experimental study investigating the use of the *Alexa* voice assistant (VA) in the novel context of TBLL to mediate texts. 63 Polish intermediate learners of English as a foreign language (EFL), randomly assigned into experimental and control groups, participated in a nineteen-week quasi-experiment using a factor rotation technique. The effects of the treatment, in which *Alexa* was used for source texts during task performance, were examined with regard to changes in the participants' intralinguistic text mediating ability at within- and between-group levels. The statistical analysis of the pre- and post-tests revealed that the intervention involving Computer-Assisted Language Learning (CALL) combined with TBLL had a positive impact on participants' mediation skills. The findings advance the limited understanding of VA application in TBLL by showing the potential of integrating voice assistance with task-oriented homework for improving learners' ability to mediate texts.

Keywords: voice assistant (VA), *Alexa*, human-machine communication (HMC), mediation, Task-Based Language Learning (TBLL)



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Słowa kluczowe: asystent głosowy, *Alexa*, komunikacja człowiek-komputer, mediacja, podejście zadaniowe

1. Introduction

Mediation, first introduced to language education in the late 1990s (Council of Europe, 1997) was not only inaccurately equated with the process of translation (North, Piccardo, 2016), but also marginalised to the advantage of reception, production, and interaction (Martyniuk, 2021) in the wake of the 2001 publication of the *Common European Framework of Reference for Languages* (CEFR; Council of Europe, 2001). Owing to an increasing number of European projects devoted to the presentation of the concept (e.g., Coste, Cavalli, 2015; North, Piccardo, 2016; Stathopoulou, 2015) and the publication of an updated version of the CEFR (Council of Europe, 2020), mediation has recently acquired buzzword status as “a reducer of distance” (Coste, Cavalli, 2015: 27).

What coincided with intensive work on the mediation concept in Europe and attracted increasing attention in language education worldwide in the 2010s was the application of voice-controlled software and apps, commonly known as voice assistants (hereafter VAs), in interactionist research. VAs, which facilitate oral non-tutorial human-machine communication (HMC) to render humans immediate assistance in digital task performance (Goksel-Canbek, Mutlu, 2016), have been claimed to afford opportunities for language development through negotiation of meaning (Dizon, 2017) and provision of authentic (Kim, 2018) and multimodal (Mousalli, Cardoso, 2019) language input. They have also been found superior to language teachers, given their “permanent availability” (Bibauw et al., 2022: 2) and potential for increasing learner attention to accuracy through immediate feedback (Underwood, 2021) and promoting autonomy by involving students in interactive language use off-site (Kukulska-Hulme, Lee, 2020).

Despite its benefits, VA use raises several questions. Its influence on students’ development of language skills, the effectiveness of HMC per se, and adaptation of pedagogical principles are just a few issues that have remained under-researched. Equally importantly, the integration of voice-controlled technologies, such as VAs, with tasks has remained uncharted territory in Task-Based Language Learning (TBLL), where researchers’ attention has primarily focused on the use of Web 2.0 tools and examination of computer-mediated communication (Gonzalez-Lloret, 2015).

To the author’s best knowledge, only one attempt has been made to combine voice assistance with task performance (Gajewska, 2025b). The data

analysis yielded promising findings, which demonstrated the positive effect of the *Alexa* application in TBLL on the participants' intralinguistic text mediating ability and their general acceptance of VA use in out-of-class learning. Nonetheless, due to methodological limitations to the research design, the results might be called into question.

To provide further insights into the novel phenomenon of voice assistance occurring during out-of-class text mediation task performance, we decided to verify these preliminary findings by replicating the research procedure reported by Gajewska (2025b). In other words, we aimed to examine the effect of using *Alexa* for source texts during out-of-class mediation task performance on the participants' text mediating skill. Such research is fully justified given research gaps not only in CALL and TBLL, but also the poor mediation performance of Polish students' reported annually by the Central Examination Board (e.g., CKE, 2023, 2024).

2. Literature review

2.1 CEFR legacy: Towards mediation tasks

Mediation has multiple meanings and, depending on the field, it might be given diverse interpretations (Lenoir, 1996 after North, Piccardo, 2016). In this discussion, a social perspective associated with the CEFR (Council of Europe, 2001) and the Companion Volume (CV) (Council of Europe, 2020) was adopted, according to which mediation, further subdivided into mediating texts, concepts, and communication, stands for linguistic practices (e.g., explaining data, collaborating to construct meaning, acting as an intermediary in informal situations) that allow individuals to build rapport in public, personal, occupational, and educational domains (Council of Europe, 2020).

In accordance with the action-oriented perspective promoted by the CEFR and CV, FL learning and teaching is organised around tasks to imitate the naturalistic process of language acquisition. The use of mediation tasks plays a fundamental role in preserving the situated character of learning (North, 2021) by creating real-life contexts for language use in three modes of communication (i.e., reception, production, interaction) (Janowska, Plak, 2021). Accordingly, learners act as social agents who use their general and communicative competences to facilitate information transfer from source to target texts (Howell, 2017).

The origins of tasks lie in the communicative era in FL teaching. In the late 1980s and early 1990s, weak and strong Communicative Language Teaching (CLT) paradigms formed a basis for Task-Supported (TSLT) and Task-Based

(TBLT) Language Teaching respectively. Each of these approached concept of task differently. While in TSLT the use of tasks was limited to the contextualised practice of language structures within the so-called Presentation-Practice-Production cycle (Gower, Walters, Phillips, 1983), in TBLT learners' task performance took advantage over focus on forms, in line with the strong version of CLT (Johnson, 1982).

Despite the divergent conceptualisations of the role of tasks in TSLT and TBLT, there has been a general consensus over the necessity to develop an empirically-sound teaching programme involving tasks. The selection of tasks, based on such criteria as, for example, relevance in students' daily lives, constitutes the first step in programme development, providing the basis for subsequent design of the task-syllabus, followed by the choice of methodology and pedagogy, the process of teaching, task-based performance testing, and programme evaluation (Long, 2005).

2.2. Voice assistance in ESL/EFL learning

Many empirical studies investigating English as second/foreign language (ESL/EFL) learners' interactions with mainstream VAs (i.e., *Alexa*, *Google Assistant*, *Siri*) were conducted with different age groups worldwide (e.g., Canada, Japan, Spain, Taiwan) in the 2010s. This preliminary research has yielded mixed findings. While the participants' evaluation of VAs during one-time in-class application (Chen, Yang, Kuo-Wei Lai, 2020; Dizon, 2017; Mousalli, Cardoso, 2016, 2019), multiple classroom usage (Dizon, 2020; Tai, Chen, 2020, 2022; Underwood, 2021), and off-site learning (Dizon, Tang, 2019, 2020) as well as the impact of the VA use on the linguistic (i.e., speaking, listening) (Dizon, 2020; Tai, Chen, 2022) and affective aspects of language learning (i.e., motivation, confidence, willingness to communicate) (Chen, Yang, Kuo-Wei Lai, 2020; Tai, Chen, 2020) have been reported to be positive, voice assistance per se has been challenged in view of the questionable capacity of the technology to comprehend the accented speech of ESL/EFL learners (Dizon, 2017; Moussalli, Cardoso, 2019).

So far one study has been undertaken to investigate VA use within TBLL. It was conducted in Poland amid the COVID-19 pandemic with a view to facilitating secondary school EFL learners' out-of-class preparation for the 2023 version of the *Matura* examination (Gajewska, 2025b). Specifically, technology-facilitated oral homework (TFOH, Shanks, 2021) was adopted to respond to the challenges presented by distance education, by giving the participants additional text mediation practice in their low-stake home surroundings. The application of *Alexa* for source texts during intralinguistic task performance

not only proved to have a positive impact on the students' ability to mediate at within- and between-group levels, but it also met with their general approval.

Due to the limitations in the research procedures underlying the studies under discussion, the above-mentioned findings are, as a matter of fact, open to doubt. The first methodology-related problem arises from the small sample size: two in Dizon and Tang (2019) and four in Dizon (2017) and Moussalli and Cardoso (2016). The second weakness lies in the brief study duration limited, for example, to a single session (Moussalli, Cardoso, 2016, 2019) and a two-week long experiment (Tai, Chen, 2020). Other controversial issues concern the lack of triangulation (Tai, Chen, 2020, 2022), the invasive character of data collection (Moussalli, Cardoso, 2019), and non-random selection of the sample (Dizon, 2017, 2020; Gajewska, 2025b).

In view of this, further examination of voice assistance is necessary to verify the findings regarding the VA application and its effects on linguistic and affective aspects of language learning. Therefore, this study builds upon previous work involving VAs in EFL task-based mediation practice (Gajewska, 2025b) to fill gaps in the literature by examining the following research questions:

How does the participants' interaction with *A/lexa* during task performance affect their ability to mediate texts?

- a. Does it affect the participants' text mediation skill at the within-group level?
- b. Does it affect the participants' text mediation skill at the between-group level?

3. Methodology

3.1. Research design

A quasi-experimental research design was adopted to examine the cause-and-effect relationship between independent (IV) and dependent (DV) variables (Konarzewski, 2000), here, voice-assisted TBLL and the participants' ability to mediate texts respectively. A factor rotation technique was applied to increase the internal validity of the study by accounting for the impact of extraneous variables and group differences caused by intact grouping (Sirotova, Michvocikowa, Rubacha, 2021). Therefore, Group A took on the status of the experimental group (ExG) in Phase 1, whereas Group B served as the control group (CtrlG). The groups exchanged positions in Phase 2.

3.2. Participants

The sample consisted of 63 Polish learners attending a private secondary school in Lublin, Poland. The students were drawn from a population of six intact groups, who had been selected in line with a convenience sampling strategy, and then randomly assigned to Group A and B. The two groups were comparable in a number of aspects, as demonstrated by their responses to the background questionnaire and mean scores for pre-tests (see Table 1).

Table 1. Key information on the participants of the study

	Group A	Group B
Number of the participants	32	31
Number of EFL classes a week at school	5	5
Proficiency level	B1	B1
Number of students with (very) positive attitudes to EFL learning	26	22
Number of students who (very) frequently communicate in English outside school	12	15
Number of students who participate in private EFL tuition	27	24
Mean score for text mediation before the study	4.84	4.47

Source: own study.

Before the treatment began, the author had obtained oral approval of the school administration to conduct the study. To avoid the collection of unreliable data due to the Hawthorne effect, neither of the groups were informed about their participation in the quasi-experiment. Once notified of the study, the participants could grant or refuse approval for their data to be analysed. The data that was subjected to examination came from those students who provided their oral consent to participate in the study.

3.3. Treatment

To verify the findings reported by Gajewska (2025b), the same set of text mediation tasks used therein was performed by the participants within the current treatment. Grounded in TBLL theory, multimethod research into Polish teenage learners' needs laid the groundwork for the selection of relevant tasks that ensured authenticity, focus on meaning, and communicative outcomes (Willis, 2004) and development of the treatment for the ExG and CtrlG in accordance with the backwards design principle (Howell, 2017). This

was followed by piloting, main study, and programme evaluation in line with Norris' (2009) TBLL framework.

Text mediation, or relaying sets of instructions and information from announcements and texts (CoE, 2020), was operationalised in the context of travelling, sightseeing, and gaining access to popular culture, that is the contexts that had been found relevant by the teenage EFL learners (Gajewska, 2025b). The participants took on the role of mediators during performance of eight text mediation tasks, which they were asked to perform on a weekly basis on their own at home. They were expected to understand the source texts (i.e., reception) and create new meanings within the target texts (i.e., production) (Coste, Cavalli, 2015) in order to help their imaginary interlocutors gain access to information (Stathopoulou, 2015).

The difference between the treatment developed for the ExG and CtrlG lay in the application of technology (i.e., voice-assisted TBLL versus traditional TBLL), which determined the modality of the source texts. The former used multimodal (i.e., textual, visual, and aural) responses of *Alexa* as source texts, whereas the latter dealt with monomodal texts – textual (i.e., blogposts), visual (i.e., maps), and aural (i.e., recordings of interviews) – that had been selected and adapted by the author. Accordingly, having read the target texts and identified the missing pieces of information (six or seven gaps per one task), the ExG needed to negotiate meaning with *Alexa* by asking it correctly structured questions. The VA in turn provided multimodal input, which the participants were expected to use in order to fill in the gaps in the target texts.¹ The HMC underlying the treatment in the ExG involved the students in negotiation of meaning and production of modified output, which according to the interactionist theory underlies language development (Long, 1996). On the other hand, the CtrlG did not negotiate meanings with *Alexa* to complete the target texts. Instead, they were expected to find the desired pieces of data in the source texts to fill in the gaps in the target texts.

3.4. Research instruments

Two types of data collection tools were implemented in the study. The background questionnaire, which consisted of six closed-ended and five

¹ To give an example, in one of the tasks, the students adopted the role of cousins who were expected to help their relatives find the recipe for Yorkshire Pudding. In order to complete the task, they first read the source text, which was the message from their relative, to find out what information was missing in the recipe (e.g., the oven settings). Based on the content of the source text, they asked *Alexa* questions, and using the ideas displayed by the VA, they filled in the gaps in the target texts (for task examples, see Gajewska, 2025a).

open-ended questions, was distributed among the participants before the treatment, to examine their history of EFL learning and allow comparison of the two groups (see Table 1). Also, three written tests were taken to examine the impact of the treatment on the students' text mediating skill. Each of the tests consisted of two activities involving intralinguistic mediation of oral (Activity 1) and written (Activity 2) texts respectively based on the CV's (CoE, 2020) "Relaying specific information" descriptor, which was used in task design, to ensure content and construct validity (Brown, 2004). There were five gaps both in Activity 1 and 2 to be filled by the students with information from the recording (oral text mediation) and a set of texts, including for example diagrams, leaflets, letters, brochures etc. (written text mediation). The participants could score a maximum number of five points (i.e., one correct answer equals one point) in Activity 1 and 2, which added up to a total of 10 points for each of the three text mediation tests.

3.5. Data collection and analysis

To evaluate the impact of the experimental intervention on the students' ability to mediate EFL texts, both Group A and B took three written text-mediating tests. They were first administered prior to the experimental intervention (i.e., T_1 , T_2) and then after Group A (i.e., T_3 , T_5) and B (i.e., T_4 , T_6) had changed their position from the ExG to CtrlG and vice versa (see Table 2). For the purpose of statistical analysis, the results from the post-tests administered in Phase 1 (i.e., T_3 , T_4) were used as the results from the pre-tests (i.e., T_3 , T_4) in Phase 2. In line with the split block testing scheme, three versions of tests were designed to control for the test practice effect (Pawlak, 2006).

Table 2. Distribution of the measurements in Groups A and B in Phase 1 and 2 of the quasi-experiment (T = assessment of the participants' text mediating skills)

Phase	Group	Pre-tests	Experimental factor	Post-tests
1	Group A	T_1	X	T_3
	Group B	T_2	—	T_4
2	Group A	T_3	—	T_5
	Group B	T_4	X	T_6

Source: own study.

The data were quantitatively analysed: the mean, median, and standard deviation (SD) were calculated for the ExG and CtrlG. For the comparison of the two groups, the appropriate statistical tests were administered (i.e., the *Shapiro-Wilk Test*, *Wilcoxon Signed Rank Test*, *Mann-Whitney U Test*) and the 0.05 was chosen as the level for statistical significance.

4. Results

Based on the mean and median values, performance of Group A and B students on three tests involving mediation of oral (Activity 1) and written (Activity 2) texts gradually improved (see Table 3). To determine whether the differences between the data were statistically significant, appropriate methods of analysis had to be selected.

Table 3. Descriptive statistics for the pre- and post-tests (1 – Activity 1 involving oral text mediation; 2 – Activity 2 involving written text mediation)

				Mean	Median	SD	Percentage of correct answers
Group A	n = 32	T ₁	1	2.26	2	0.855	45%
			2	2.58	3	0.765	52%
		T ₃	1	3.29	3	0.783	66%
			2	3.55	4	0.925	71%
		T ₅	1	3.87	4	0.670	77%
			2	4.10	4	0.651	82%
Group B	n = 31	T ₂	1	2.13	2	0.776	43%
			2	2.33	2	0.802	47%
		T ₄	1	2.80	3	0.664	56%
			2	3.03	3	0.669	61%
		T ₆	1	3.97	4	0.615	79%
			2	4.13	4	0.776	81%

Source: own study.

For that purpose, the *Shapiro-Wilk Test* was run on each of the datasets to check whether the variables had a normal distribution. The results of the normality test indicated that the distribution of the ExG and CtrlG variables deviated significantly from normality ($p < 0.05$; see Table 4), and the normality assumption was rejected.

Table 4. Results of the *Shapiro-Wilk Test*

			Pre-test	W	p	Post-test	W	p
Group A	Phase 1	1	T_1	0.87	0.0016*	T_3	0.85	0.0006*
		2		0.82	0.0002*		0.88	0.0029*
	Phase 2	1	T_3	0.85	0.0006*	T_5	0.80	<< 0.0001*
		2		0.88	0.0029*		0.79	<< 0.0001*
Group B	Phase 1	1	T_2	0.82	0.0002*	T_4	0.79	<< 0.0001*
		2		0.87	0.0013*		0.80	0.0001*
	Phase 2	1	T_4	0.79	<< 0.0001*	T_6	0.77	<< 0.0001*
		2		0.80	0.0001*		0.80	0.0001*

Source: own study.

The *Wilcoxon Signed Rank Test* was therefore performed, to assess whether the treatment had an effect on the participants' oral and written text mediation skill at the within-group level, by comparing the sample medians from the pre- and post-test scores. The intervention introduced in Phase 1 for Group A ($Z = 4.55$; $p = 0.000005$) and in Phase 2 for Group B ($Z = 4.78$; $p = 0.000002$) resulted in statistically significant changes in the ExG students' ability to mediate oral texts (see Table 5). Similarly, the intervention introduced in Phase 1 for Group A ($Z = 4.70$; $p = 0.000003$) and in Phase 2 for Group B ($Z = 4.37$; $p = 0.000012$) led to statistically significant changes in the ExG students' ability to mediate written texts.

Table 5. Results of the *Wilcoxon Signed Rank Test* for oral and written text mediation: a within-group comparison

			Pre-test	Mean	Median	Post-test	Mean	Median	Z	p
Group A	Phase 1	1	T_1	2.26	2	T_3	3.29	3	4.55	0.000005*
		2		2.58	3		3.55	4	4.70	0.000003*
Group B	Phase 2	1	T_4	2.80	3	T_6	3.97	4	4.78	0.000002*
		2		3.03	3		4.13	4	4.37	0.000012*

Source: own study.

To assess the impact of the intervention at the between-group level, the mean gain scores (i.e., the differences between the post- and pre-test scores in Phase 1 and 2) were calculated. To choose an appropriate method of statistical analysis, the *Shapiro-Wilk Test* was run. Its results suggested that the distribution was not normal ($p < 0.05$, see Table 6).

Table 6. Results of the *Shapiro-Wilk's Test*

		Mean	Median	W	p
T_3-T_1	1	1.03	1	0.92	0.0229
	2	1.03	1	0.92	0.0229
T_4-T_2	1	0.67	0	0.84	0.0004*
	2	0.70	1	0.88	0.0026*
T_5-T_3	1	0.58	1	0.87	0.0015*
	2	0.55	1	0.89	0.0045*
T_6-T_4	1	1.17	1	0.89	0.0042*
	2	1.10	1	0.92	0.0210

Source: own study.

Since the distribution deviated from the norm, the *Mann-Whitney U Test*, which compares the median values, was administered to investigate whether the differences in oral and written text mediation between the ExG and CtrlG in Phase 1 and Phase 2 were statistically significant. The results of the test demonstrated a statistically significant difference in the performance of Activity 1 by the ExG and CtrlG ($Z = -3.78$; $p = 0.00015$) in Phase 1. As for Phase 2, the test yielded a similar result ($Z = -2.17$; $p = 0.03005$) (see Table 7).

Table 7. Results of the *Mann Whitney U Test* for oral text mediation: a between-group comparison

			Mean		Median		Z	p
ExG (Group A) versus CtrlG (Group B) in Phase 1	T_3-T_1 versus T_4-T_2	1	1.03	0.67	1	0	-3.78	0.00015*
CtrlG (Group A) versus ExG (Group B) in Phase 2	T_5-T_3 versus T_6-T_4		0.58	1.17	1	1	-2.17	0.03005*

Source: own study.

As for Activity 2, which involved students' written text mediation, the test yielded two different results (see Table 8). In Phase 1, the H_0 stating that the ExG students do not perform written text mediation activities better than the students assigned to do traditional homework was challenged, as evidenced in the p -value < 0.05 ($Z = -4.40$; $p = 0.00001$), which allowed us to accept the H_A that the ExG performed more successfully at written text mediation than the control group. In Phase 2, the difference in ExG and CtrlG students' ability to mediate written texts lacked statistical significance ($Z = -1.60$; $p = 0.11060$). Even though this result did not allow us to refute the

H_0 , it can be noticed that the control group's performance on Activity 2 was worse than that of the ExG, as evidenced in the mean scores (0.55 versus 1.10 points respectively).

Table 8. Results of the *U-Mann-Whitney Test* for written text mediation: a between-group comparison

			Mean		Median		Z	p
ExG (Group A) versus CtrlG (Group B) in Phase 1	T_3-T_1 versus T_4-T_2	2	1.03	0.70	1	1	-4.40	0.00001*
CtrlG (Group A) versus ExG (Group B) in Phase 2	T_5-T_3 versus T_6-T_4		0.55	1.10	1	1	-1.60	0.11060

Source: own study.

5. Discussion

According to the results, there was statistically significant difference in the ExG students' ability to mediate texts before and after the treatment. The examination of the effect of the IV on the DV at the within-group level demonstrated that the level of text mediation among the ExG students changed during the eight-week experimental intervention, with voice-assisted TBLL bringing gains in their ability to mediate texts.

This finding corroborates the results of research studies investigating the impact of TBLL on different language skills. Task-based experimental interventions were reported to lead to statistically significant improvements in the ExG students' skill of writing (Kafipour, Mahmoudi, Khojasteh, 2018), listening (Chou, 2017), reading (Madhkhan, Mousavi, 2017), and speaking (Hashemifardnia, Rasooiyar, Sepehri, 2019), in contrast to the traditional instruction which had been offered to the control groups. The learning-by-doing notion associated with task performance is believed to help the ExG students improve their skills because tasks, as opposed to traditional activities, promote authenticity of language use (Kafipour, Mahmoudi, Khojasteh, 2018) and arouse students' enthusiasm while learning (NamazianDost, Bohloulzadeh, Pazhakh, 2017).

A between-group comparison also demonstrated a statistically significant difference in the performance of oral and written text mediation. The ExG students performed better with regard to oral and written text mediation than the CtrlG in Phase 1, while the CtrlG students were less successful in oral text mediation than the ExG in Phase 2. This examination revealed that the integration of voice assistance with TBLL proved more effective

in developing the participants' ability to mediate texts than its traditional counterpart. This finding is in line with research comparing the effect of technology-mediated and traditional TBLL on the development of vocabulary and grammar (Fang et al., 2020), listening (Mulyadi et al., 2021), reading (Tavakoli, Loth, 2021) and writing (Sholeh, Talebinejad, 2022), with novelty factor and flexibility associated with the technology implementation affecting differences between the performance of the ExG and CtrlG (Tavakoli, Loth, 2021).

The finding revealing the positive impact of the application of voice assistance on the participants' EFL text mediating skill is also in alignment with the results of research studies comparing dialogue-based CALL with non-CALL environments. Greater gains of the ExG students in the improvement of their speaking (Dizon, 2020; Tai, 2022) and listening (Tai, Chen, 2022) were reported and linked not only to the feedback on pronunciation (Dizon, 2017) and authentic language input (Kim, 2018) provided by VAs, but also their endless patience (Bibauw et al., 2022), mobility and ubiquity (Tai, 2022), and potential to facilitate dialogic interactions (Bibauw, Francois, Desmet, 2019), overcome the problem of learner apprehension (Sydorenko, Daurio, Thorne, 2018), and provide multimodal responses (Tai, Chen, 2022), all of which have been found conducive to language development.

The positive impact of voice assistance combined with task performance on the participants' text mediating skill at within- and between-group levels reported in this study corroborates with the results of a similar research study carried out by Gajewska (2025b). The ExG students' improved performance on tests might be attributed to their acceptance of and satisfaction with the use of technology. The Polish students using *Alexa* in TBLL to mediate texts found the VA useful in maximising their language output, allowing them easy access to information, improving their pronunciation and communication skills, and enhancing their confidence, which may be used to account for the greater gains made by the ExG with regard to their development of the ability to mediate (Gajewska, 2025b).

It must be added at this point that the lack of statistically significant difference in the performance of written text mediation in Phase 2 between the CtrlG and ExG (see Table 8) may be due to the experimental character of the intervention, which might not have been long or intensive enough (or both) to produce a statistically significant result. On account of the fact that the mean gain score of the ExG was higher than of the CtrlG, as demonstrated by the descriptive statistical results, extending the duration of the treatment to involve more tasks to be performed by students could be considered, with a view to obtaining a statistically significant result in all the comparisons.

6. Conclusions

The aim of the current quasi-experiment was to address gaps in research on dialogue-based CALL and TBLL by enhancing the limited understanding of integration of VA into TBLL to mediate EFL texts. For this purpose, the results obtained by the ExG in the post-tests were compared with those from the pre-tests, as well as with those achieved by the CtrlG students. Based on the findings, voice-assisted TBLL proved more successful than conventional task performance in the context of improvement of text mediation both at within- and between-group levels. By replicating the quasi-experimental research into voice-assisted TBLL carried out by Gajewska (2025b), we managed to validate the findings from that study (the main limitation of which was the application of non-random sampling), to a different sample, thus succeeding in increasing its external validity.

Voice-assisted TBLL was proposed to accentuate the action-oriented character of learning through tasks and with the help of voice-controlled software. *Alexa* and similar VAs prove an excellent match for TBLL as they extend language learning opportunities to out-of-class settings where students can freely communicate with humanoid figures in the target language and engage with the language under the guise of authentic, digital tasks without the traditional presence of language teachers or learners.

VAs, if used for source texts, enrich the language reception and production underlying non-technology task performance with HMC, and require the implementation of question generation strategy by learners. Despite problems with HMC involving reliability and connectivity issues, *Alexa*, once applied during out-of-class task performance, plays a useful role in encouraging negotiation of meaning and increasing language input quality and quantity through its multimodal responses.

Different parties, including syllabus designers and materials developers, interested in undertaking initiatives based on voice-assisted TBLL are required first and foremost to conduct multimethod research into learners' needs. Only by examining what is needed, lacking, and desired, from the perspectives of different stakeholders (i.e., learners, teachers), together with students' experiences in the use of voice-controlled software can designers and materials writers guarantee the authenticity of the voice-assisted task performance process, which is expected to prepare learners for their future out-of-class use of the target language.

The implementation of voice-assisted TBLL helps to modify the traditional classroom roles of learners and teachers, with the former increasing their active participation and the latter receding into the background as learning facilitators. In view of this, administrators who consider organising

self-instruction similar to that in the current study should ensure that not only learners, but also teachers have the basic skills to use VAs, and that those who do not receive adequate training.

The experimental intervention involving students' interaction with *Alexa* during task performance might thus serve as a satisfactory substitute to conventional (workbook-based) homework. Assignments involving voice assistance and task performance seem to offer a realistic solution to problems underlying EFL education in Poland, including students' poor performance of examination activities involving text mediation, limited out-of-class exposure to authentic input, and isolated cases of interactive language use off-site. Language educators who would like support their students during EFL mediation practice should therefore find the implementation of voice-assisted TBLL worth serious consideration.

Owing to the application of convenience sampling, which limits the generalisability of the study findings, the current research suffered from selection and sampling bias. Since certain groups of Polish EFL secondary school learners were more likely to be chosen from the population than others due to intact grouping, voice-assisted TBLL should be further examined among students of different ages and proficiency levels in order to deepen the understanding of the use of voice assistance in TBLL among younger and older ESL/EFL learners as well as those who are more and less proficient.

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