

ARTICLE



Technology-mediated TBLT and language development for beginning learners of Vietnamese

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Abstract

Numerous empirical studies and syntheses have explored technology-mediated task-based language teaching (TMTBLT) (e.g., Chong & Reinders, 2020; Kim & Namkung, 2024; Lai & Li, 2011; Ziegler, 2016), with findings highlighting the affordances of technology for interaction and its associated benefits. However, few studies have targeted program development and evaluation for task-based online curriculums for Less Commonly Taught Languages (LCTLs) (Bryfonski & McKay, 2019). To address this gap, the current study uses action research (Burns, 2010) to report a teacher-researcher's experience in creating, implementing, and evaluating TMTBLT materials for a beginning Vietnamese language class at an American university. Action research was used as the methodological framework through two iterative cycles (i.e., two consecutive semesters) conducted with two mixed cohorts of heritage language learners and second language learners. Results highlighted the benefits of AR for bottom-up curriculum development and demonstrated significant gains in learners' speaking and writing proficiency over time. Findings also suggest learners had overall positive perceptions of TMTBLT as a pedagogical approach.

Keywords: Technology-mediated task-based language teaching; heritage language learners; beginning-level learners; action research; less commonly taught languages

Language(s) Learned in This Study: Vietnamese

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Introduction

Centered around experiential learning and “learning by doing” (Dewey, 1997), task-based language teaching (TBLT) is a pedagogical approach rooted in the principles of the interaction hypothesis (Long, 1996; Mackey, 2020). Through authentic, real-world communicative tasks, learners can negotiate for meaning by connecting “input, internal learner capacities, particularly selective attention, and output, in productive ways” (Long, 1996, pp. 451–452). This negotiation allows learners to modify their output or provide corrective feedback, which triggers second language (L2) learners’ attention to form. In particular, the juxtaposition of new forms with learners’ erroneous utterances produced during the interaction promotes noticing and subsequent L2 learning and development (refer to Schmidt, 2001 for more information on noticing and SLA). Although empirical findings regarding the efficacy of technology-mediated task-based (TMTB) environments are encouraging (e.g., Chong & Reinders, 2020; Ziegler, 2016), little research explores the development and implementation of TBLT as a curricular approach. In addition, only a small number of studies have examined the effectiveness of a fully synchronous online task-based language course (e.g., Nielson, 2022). In addition, few studies in technology-mediated language teaching contexts have examined beginning-level learners (see Newton & Bui, 2020). Furthermore, although a large body of research has demonstrated how both traditional and technology-mediated TBLT can provide an effective

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pedagogical framework for the L2 classroom, only a small number of studies have explored targeted program development and evaluation for Less Commonly Taught Languages (LCTLs) (Bryfonski & McKay, 2019). In particular, little research examines how the affordances of technology might support mixed student populations commonly found in LCTL contexts of both L2 learners and heritage language learners (HLLs) (Henshaw, 2015) – individuals who acquired their first language (L1) through socializing with their family members but who have not fully achieved fluency in their L1 because they switched to the dominant language (Valdés, 2001). Because of their differences in linguistic, cultural, and academic needs, these populations can pose substantial challenges for curriculum design and development. To address these gaps, the current study uses action research (AR) (Burns, 2010; 2011) to report the experience of a teacher-researcher in creating, implementing, and evaluating a technology-mediated TBLT curriculum for a mixed HLL and L2 beginning Vietnamese language class at an American university.

Literature Review

TBLT for Online Programs

Technology-mediated language learning can be defined as “any type of computer hardware or software that helps learners develop their language skills” (DuBravac et al., 2012, p. 2). Recent studies highlight the importance of technology for supporting learners’ understanding of not only linguistic features but also cultural practices (e.g., Chun et al., 2016). Numerous studies illustrate the affordances of different types of technologies for the L2 classroom (e.g., Sauro, 2011) and underscore the importance of developing authentic technology-mediated tasks rather than simply transferring materials from a traditional classroom to an online format (González-Lloret, 2020). To that end, a number of key recommendations have been made for applying TBLT to online programs (Baralt & Gómez, 2017), including integrating tasks and technology throughout the curriculum, emphasizing socialization and supportive community building, and implementing class policies regarding technology use to enhance the learning experience.

Although the number of studies exploring technology-mediated task-based approaches is growing, few studies have explored the effectiveness of using TBLT as a framework for a fully synchronous online language course (González-Lloret & Rock, 2022; Nielson, 2014; 2022). Lai et al. (2011), one of the first studies to explore this topic, investigated an online TBLT course for beginning-level high school learners of Chinese. Although the class utilized an e-textbook, Lai et al. (2011) developed supplementary tasks (following the TBLT models by Ellis, 2003 and Willis, 1996). Results showed positive reactions from teachers and students; findings highlighted the online program’s potential to support learning through individualized instruction, as well as reducing cognitive load for beginning learners and encouraging their participation in online tasks. More recently, Nielson’s (2014) findings from an online TBLT program for intermediate-level Chinese learners demonstrated proficiency gains for online learners compared to learners in the face-to-face (FTF) group, which suggests positive effects for the online TBLT curriculum on learners’ L2 development.

Overall, these findings demonstrate the capabilities of online task-based programs to facilitate L2 development. However, much of the previous research has targeted learners at the intermediate and advanced levels (e.g., Nielson, 2014). The few studies that have explored task-based curriculum development for beginning-level learners have found positive effects, such as decreased anxiety, increased speaking opportunities, and enhanced enjoyment (Bao & Du, 2015; Lai et al., 2011). However, these studies also identified challenges for TBLT programs for low proficiency learners, including lack of instructional support, different learning preferences, and teacher’s lack of expertise in TBLT (Vandommele et al., 2017). These challenges underscore the need for further exploration of not only beginning level learners but also mixed populations.

Action Research as a Methodological Framework

Action Research (AR) offers educators a robust methodological framework to investigate classroom practices and address curricular challenges, such as those mentioned above. Burns (2010) defined AR as the inquiry that involves “taking a self-reflective, critical, and systematic approach to exploring your own

teaching contexts,” (p. 2). Adapting Kemmis and McTaggart’s (1998) model (see Figure 1) with four steps – Plan, Act, Observe, and Reflect – Burns (2010) suggested AR starts with the planning step, in which problematic elements occurring in the class are identified and a plan is made to tackle these issues. Then, a deliberate intervention is applied to potentially improve the situation. During the intervention process, observations, self-reflections, interviews, surveys, recordings, and so forth, are systematically collected. In the final phase, data is analyzed to examine the efficacy of the intervention. Following the core principles of AR, this model of iterative investigation is a cyclical and spiraling process, which allows the teacher-researchers to continuously explore the research “themes” emerging in their context (Burns, 2005).

When applied to curriculum development, the iteration of cycles in AR helps researchers refine the initial curriculum plans, provide feedback and insights to revise the initial curriculum, and apply that revised version in subsequent cycles. With each iteration, the curriculum is developed and strengthened over a period of time. In terms of design, most AR studies in curriculum development have focused on teachers, their instructional practices, and teacher reflection, with the evaluation also being teacher-centered (e.g., Banegas, 2019). In other words, few studies have explored AR-driven curriculum development for LCTLs or mixed L2 and HLL populations from a learner-centered perspective. In addition, little research directly targets online program development and evaluation for LCTLs (Bryfonski & McKay, 2019), particularly using an AR approach. The current study addresses these gaps by employing longitudinal action research (Burns, 2010) to guide the development of an online TBLT curriculum for Vietnamese learners, both L2 and HLL, at the novice level. Beginning with a curriculum grounded in a task-based needs analysis, this study explores learners’ perceptions of language learning using technology-mediated tasks by drawing on interviews, surveys, and reflections, as well as the developmental effects of an AR-informed curriculum on learners’ L2 test performance. To that end, the following research questions are addressed:

- (1) What are the strengths and challenges of the technology-mediated TBLT curriculum, and to what extent did teacher-initiated changes address the areas for improvements?
- (2) To what extent did learners’ language proficiency improve over the course of one year of learning Vietnamese following a technology-mediated TBLT curriculum?

The Current Study

The data presented here are part of a larger research project conducted over two academic years with two different cohorts of students (see Le, 2023 for more information). The report focuses on two cycles of AR, namely Cycle 1 and Cycle 2, from Year 2 of the project. Key findings from Year 1, which formed the foundation for the curricular changes implemented in Cycle 1 and 2 during Year 2 were reviewed below.

Summary of Findings: Year 1

In the planning stage of Year 1, a small-scale needs analysis was conducted to survey different stakeholders, analyze current syllabi, and evaluate existing TBLT materials (refer to Le, 2023 for more details). Findings yielded a list of target tasks, which guided the development of pedagogic tasks. These tasks¹ were then sequenced into a syllabus for the first and second semesters of the target Vietnamese course for Year 1. A set of task assessments² were also developed to accompany the curriculum. The first author, Hoa, then implemented these task-based materials and lessons, while also collecting data for program evaluation and observation by keeping a teaching journal, interviewing and surveying students, and analyzing the TBLT assessment results. During the Reflection process in Year 1, a number of challenges in implementing an online TBLT course for a mixed class of HLLs and L2 learners were identified. These challenges are illustrated in [Figure 1](#) along with the teacher-initiated actions targeting these issues at the start of Cycle 1 in Year 2.

Figure 1

Summary of the Challenges Identified in Year 1 and Proposed Actions in Cycle 1 of This Study

Challenges	Proposed actions
1. Clarity of task instructions, particularly in an online environment, was crucial, especially when students were not familiar with TBLT.	Making task explanations as clear as possible, including utilizing online tools such as the highlighter feature or online classroom demonstrations to model and clarify task goals and instructions.
2. Dialects, pronunciation, and tone marks posed unique challenges for beginning learners of Vietnamese in L1 English contexts, suggesting that learners need explicit instructional support to overcome these challenges.	Adding pronunciation practice to vocabulary items on Quizlet sets, including both northern and southern Vietnamese dialects when appropriate.
3. Class management and activities needs to address proficiency gaps and various needs for learning of learners. Teachers should carefully consider pairing and grouping strategies to help reduce the anxiety of non-HLLs or low proficient HLLs and create a supportive learning environment for students at all proficiency levels.	Pairing students of the approximate levels more frequently during the first semester; avoiding paring L2 learners with more advanced HLLs; in the second semester, provide more opportunities for learners to be mixed up with partners of different proficiency; Teaching strategies to work in pair sufficiently to both HLLs and non-HLLs; Promoting activities fostering connections between learners HLLs and Vietnamese culture; particularly connections between HLLs and their, family, and identities.
4. Current task sequencing and complexity were difficult for beginning level learners, especially in an online learning environment. This finding highlighted the need for increased scaffolding for developmental and technology-related support, such as using Vietnamese websites, alongside a redesign of the curriculum to facilitate the efficient delivery of course content.	Revising the number of tasks in the course and adjusting task sequencing to reflect increasing complexity over time. Providing additional scaffolding, especially for tasks introducing new topics, by creating additional input-based materials, 'block-building,' and pedagogic tasks. Designing interactive tasks leveraging the affordances of the online environment, such as adding real life 2D pictures and 3D images to reduce task complexity and improve learners' motivation.
5. Online group work was challenging as learners lacked opportunities for immediate feedback from the instructor.	Designing post-task activities through interactive online games, such as Kahoot, that can provide learners with feedback and explicit instruction on grammatical rules when necessary.

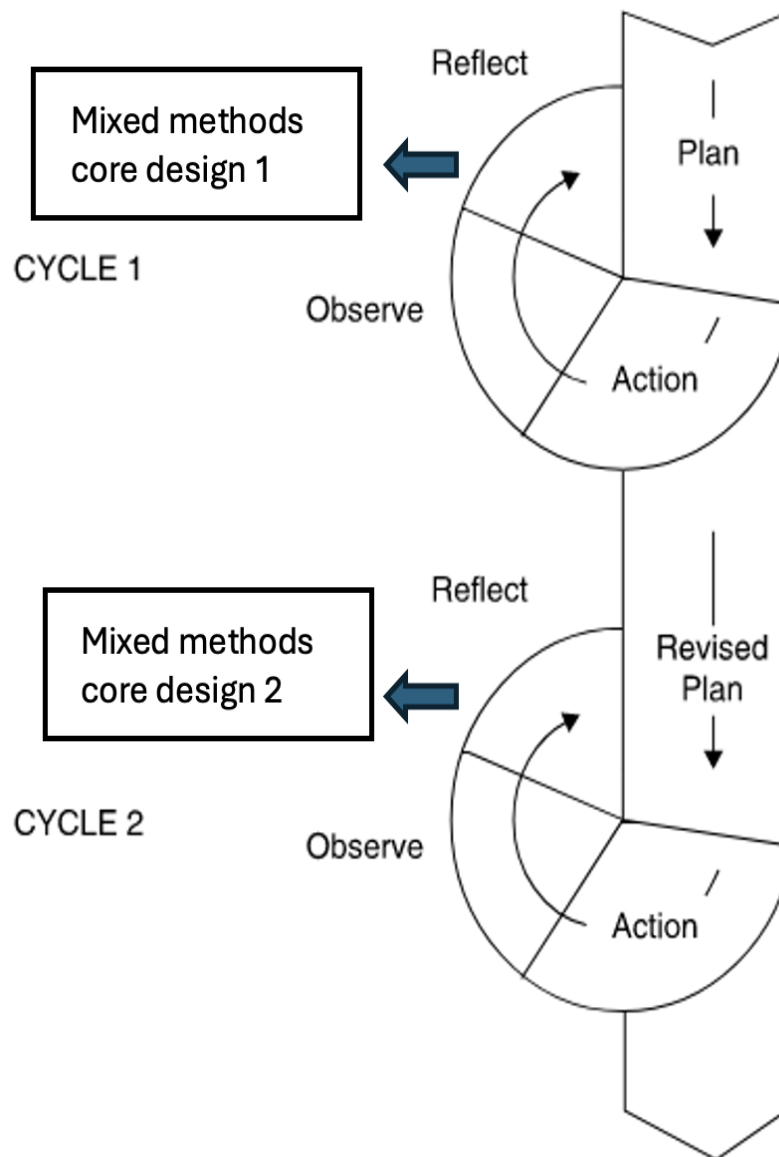
Methods

Overall Research Design

This study used Creswell and Creswell's (2022) model for complex mixed-method design, which involves embedding two core mixed-methods designs into the AR framework suggested by Kemmis and McTaggart (1988). [Figure 2](#) illustrates the iterative integration of mixed-methods core design 1 and 2 into the two cycles of AR in Year 2 (the focus of the current study). Qualitative and quantitative data were collected simultaneously during the Action and Observe phases. Then, the Reflection phase focused on data analysis and subsequent proactive planning for the next cycle.

Figure 2

Mixed Method Core Designs Integrated in the Cyclical AR Model



Note. Based on Kemmis and McTaggart (1988)

Mixed Methods Core Designs

To evaluate the technology-mediated TBLT curriculum, qualitative and quantitative data were combined for the purpose of providing comprehensive insights about learners’ perceptions along with the efficacy of the task-based materials and instruction as measured by standardized test performance. The following sections detail the participants, materials, procedures, and analysis of these core designs for Cycles 1 and 2 in Year 2.

Participants

Participants in Cycle 1 included 15 students with a mix of L2 ($n = 5$) and HLL ($n = 10$), and they all reported English as their L1. Three learners were graduate students, while all others were undergraduates. Learners had no previous instructional experience with Vietnamese. All participants reported prior experience with online learning and were comfortable and proficient using technology. Cycle 2 consisted of 11 students, all of whom continued from Cycle 1; two were L2 learners and nine were HLLs. [Figure 3](#) summarizes the background of the participants (see [Appendix A](#) for individual learner profiles).

Figure 3

Number of Participants in Each Category

	Non-HLLs	HLLs & did not speak/listen in Vietnamese at home	HLLs & spoke/listened in Vietnamese at home	Comfortable with Zoom & technology	Total
Cycle 1	5	5	5	15	15
Cycle 2	2	4	5	11	11

Instructional Context and Class Procedures

During both Cycle 1 and 2, learners attended a 75-minute class twice per week throughout the 16-week semester. All classes were conducted over Zoom, with Hoa regularly using presenter mode, audio and video recording, text-chat, and break-out rooms to facilitate interaction. All classes were recorded, and learners were provided access to these recordings to support noticing (Pellettieri, 2000). In addition, following Baralt and Gómez's (2017) recommendations for online TBLT, technology-focused classroom management practices were implemented in both cycles. For example, the syllabus detailed the classroom policy on online learning, which required students to come to class technologically prepared with a stable internet connection, a working built-in camera/webcam, a headset, and a quiet space (if possible). Students were also provided guidance on how to install Vietnamese keyboards on their computers, as well as links demonstrating how to type in Vietnamese.

Materials and Data Collection

Background Survey

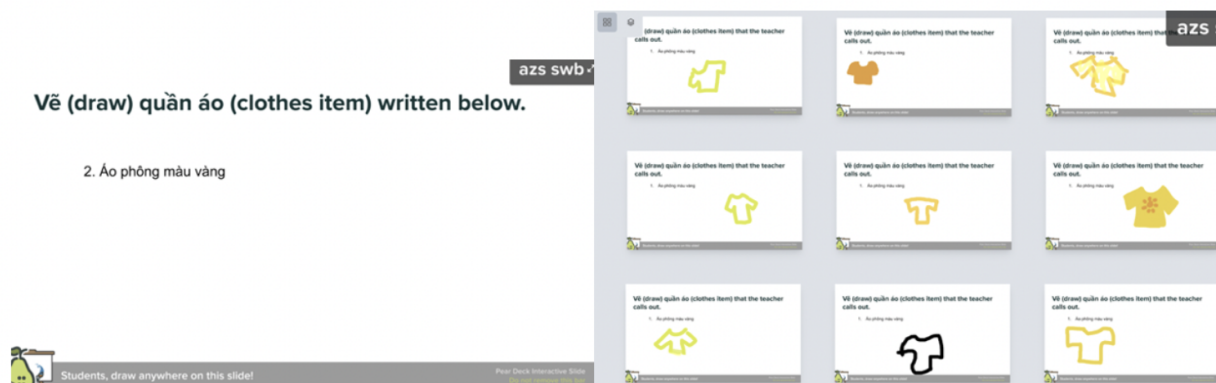
All learners completed a background survey³ consisting of 20 open and closed ended questions was administered. The questions were related to their demographic information and previous language learning experience.

Technology-Mediated Task Design

All technology-mediated tasks were designed following González-Lloret and Ortega's (2014) principles, which suggest that tasks should be meaning-focused, holistic, authentic, and based on learners' needs and wants. Technology should be an integrated and intentional aspect of technology-mediated tasks. Based on these principles, opportunities for learners to reflect on and share their learning process were also provided. In addition, tasks used in the course also provided opportunities for learners to improve their technological literacy skills, such as using the Sakai learning management system and a shared Google Drive, as well as navigating authentic web pages in Vietnamese. In both cycles, a range of apps (e.g., Kahoot!, Quizlet, Bamboozle, and Padlet) were also integrated because of their potential affordances for language learning, such as opportunities for noticing and focus on forms, increased processing time, and facilitating equitable participation. For example, Quizlet provided Hoa's model pronunciation of the target language in two different dialects. Learners then recorded themselves and compared their production with the more target-like production of the items in Quizlet, potentially supporting salience and noticing. The tasks and materials were presented using Google Slides. In Cycle 2, the add-on application, *Pear Deck*, was integrated into the slides to promote learners' engagement with class materials. Figure 4 illustrates the instructions and students' interaction using *Pear Deck* for a “building block” task, which presents the vocabulary for the target task, *Describing someone you know*. Students were asked to read the text and draw the item (a yellow T-shirt).

Figure 4

Example of the Integration of Pear Decks into Class Activities on Google Slides



Target Tasks

Target tasks were identified following the results of Year 1. All tasks were interactive and were designed for pairs or small groups and included a range of task types, such as opinion sharing tasks, information-gap tasks, and modified map tasks. Figure 5 describes the tasks used in each cycle, accompanied by lesson plans⁴ for the tasks.

Figure 5

Tasks in Cycle 1 and 2

Cycle	Target tasks	Target task prompts
Cycle 1	1. Greeting and introducing yourself	<ul style="list-style-type: none"> • Greet and introduce yourself during the first lesson of the Vietnamese class at the university • Greet and introduce yourself to a classmate you just met at a social event
	2. Making small talk: introducing your family members	<ul style="list-style-type: none"> • You're a regular customer at a Vietnamese restaurant. The owner of the restaurant made small talk with you. They asked you some questions about your family. Make small talk with them on that topic. • You're writing an email to your host family (or a friend) in Vietnam. Introduce yourself and your family to them.
	3. Ordering food and drinks at a restaurant	<ul style="list-style-type: none"> • You and your family or friends are at a Vietnamese restaurant. Order the food and drinks for you and for your family members/friends
	4. Making small talk: Daily activities	<ul style="list-style-type: none"> • You're having a small talk with your family or friend about what you did today or your daily activities.
	5. Setting up an appointment	<ul style="list-style-type: none"> • Set up an appointment to see a friend for coffee • Set up an appointment to have a Zoom meeting with a coworker

Cycle 2	1. Describing someone you know	<ul style="list-style-type: none"> Your friend/family asked you to pick up a friend for them. They described the person to you. Try to identify that person based on the description. You met someone in a supermarket, and she was your family's (or friend's) acquaintance. You do not remember her name, so you tried to describe her to your family or friend. You're having a small talk with your friend, and you're telling them who your brother/sister (or best friend) is like
	2. Making casual daily conversations about weather, hobbies, health	<ul style="list-style-type: none"> You're having casual daily conversations with your friends, family, and relatives about the weather these days or some new hobbies that you have developed recently. Your friend or family/relatives do not feel well today. So you check on them (or vice versa, answer their questions if they're checking on you)
	3. Ordering food at a restaurant with specific requests	<ul style="list-style-type: none"> It is OK and common in Vietnam to request the food according to your preferences. You're at a restaurant now and want to make specific requests about your food. You want to order food to take home for you and your friend, and your friend is allergic to some ingredients, so you need to tell the restaurant staff. Order food for a group of friends from foody.vn for delivery. Your friends have different preferences and allergies. Order the correct food for everyone.
	4. Obtaining/ Giving directions	<ul style="list-style-type: none"> You're at a restaurant, and you want to use the restroom. Ask a staff member for directions. You just arrived at your host family's house in Vietnam and would like to know about different areas of the house. Ask the host family and follow their directions. You have a visitor to your college, give them directions to different buildings that you are familiar with.
	5. Shopping for personal items	<ul style="list-style-type: none"> You and your friend just arrived in Vietnam for a summer program, but your luggage is missing. Now you need to buy some personal items. Talk with the shop owner to find the right items for you and let them know if you will be buying them or not. You and your friends were given a budget of \$150 (VND3.6 mil.) to buy your personal items while waiting for your luggage to arrive. Explore an online shopping site shoppee.vn and discuss what items you really need and decide as a group on the items you will buy as a group. Present your group's decisions to the class.

End-of-term Course Evaluations

The end-of-term course evaluation had 20 statements using five-point Likert-scaled items that define 1 as ‘strongly disagree’ and 5 as ‘strongly agree.’ These items were categorized into five groups exploring students’ perceptions of (a) themselves, (b) TBLT as an instructional approach, (c) specific task design features, (d) the teachers’ approach and style, and (e) the use of technology-mediated and culturally relevant materials in the L2 classroom. All items were randomized to avoid ordering bias. The survey was administered at the end of each cycle. Full surveys are provided in [Appendix B](#).

Semi-structured Interview Protocol

The semi-structured interview had 10 content questions on a range of topics related to technology-mediated TBLT, the teacher, and the course. Full details of the interview protocols are provided in [Appendix C](#). Participants were interviewed in small groups of two or three participants at the end of the semester. All interviews were conducted online over Zoom with participants’ cameras on (unless there were technical issues) and were recorded for transcription. Interviews lasted for approximately 60-75 minutes.

Teaching Journal

Following Burns’ (2010) guidelines on ‘observation,’ Hoa kept a teaching journal throughout her research. The purpose of the ‘descriptive journal’ (Burns, 2010, p. 90) was to document any significant events (e.g., when students showed confusion with the task instructions) happening in the class, as well as any ideas, insights, and reflections she had about her own classroom practice. The information from the journal, combined with the materials used in class, triangulated the course evaluation and interview findings and gave a more holistic understanding of the intervention. The journal was written in a narrative style using Microsoft Note software. Entries were made immediately after each class session.

The Avant Standardized Test

To evaluate any changes in learners’ proficiency over time, the Avant Standards-based measurement of proficiency (STAMP) Writing and Speaking tests were used. There was no standardized four-skill test available for Vietnamese at the time of the study; thus a two-skill test was selected. The test is semi-adaptive, as test-takers are asked to answer seven self-evaluation questions regarding their Reading and Listening skills, which are then used to determine the level of prompts generated in the Writing and Speaking section, respectively. Each Speaking and Writing section includes three prompts, with the overall score determined by combining the scores the test-takers receive on all three prompts in each section. Tests are graded by human raters, and results are aligned with ACTFL proficiency guidelines, ranging from 1 (novice-low) to 8 (advanced-mid). Unratable answers receive a 0 score, which is often the case for true-novice learners who do not produce any target language. The Avant STAMP test was administered pre- and post-Cycle 1, and post-Cycle 2, with post-tests administered within one week of the final day of class.

Data Analysis

To answer RQ1 (i.e., learners’ perceptions of the technology-mediated task-based curriculum), inductive qualitative analysis (Creswell & Creswell, 2023) was applied to learners’ open-ended survey questions, interviews, and task evaluations. In addition, Hoa’s teaching journal and reflections, as well as classroom materials, were used to triangulate learners’ perception data. All interview audio files were transcribed using Otter.ai software, then manually edited to ensure accuracy. Keywords were then highlighted, and codes were grouped into preliminary themes. These themes were later clustered together to form new themes, if necessary, and were then connected to develop a storyline for interpretation.

In addition to the qualitative data, quantitative data from the Likert-style survey questions and learners’ Avant STAMP tests were analyzed using descriptive and inferential statistics. To address the second research question (i.e., to what extent the technology-mediated TBLT curriculum promoted L2

development), pre- and post-Cycle 1 Avant STAMP WS test scores were analyzed using paired samples t-tests, while the test scores for pre- and post-Cycle 1 and post-Cycle 2 scores were analyzed with repeated measures ANOVA to identify any significant differences over time.

Results

Findings from the iterative and reflective AR process are presented chronologically in order to illustrate how the plan, action, observation, and reflection phases of the embedded mixed methods core design for Cycle 1 informed the subsequent phases for Cycle 2. In order to explore learners' perceptions and experience with the overall curriculum, the findings of research question 1 for Cycle 1 are discussed. Then, the results for Cycle 2 are addressed, including to what extent learners perceived improvements in the curriculum according to the findings from Cycle 1. Finally, learners' standardized test scores from Cycle 1 and 2 are reported to address the second research question.

Research Question 1: Strengths, Challenges, and Changes to the Curriculum

Cycle 1: Action Research Findings

The following results are drawn from learner surveys and interviews collected over the course of the first AR cycle in Year 2 and are triangulated using classroom material and teacher reflections.

Overall Efficacy of the TBLT Curriculum

Findings from semi-structured interviews and end-of-course evaluations demonstrated that learners seemed to understand the TBLT method ($M = 4.67$, $SD = 0.49$). For instance, most of the learners felt that they could apply the classroom tasks to new contexts ($M = 4.53$, $SD = 0.64$) and that TBLT was effective and helpful ($M = 4.47$, $SD = 0.64$). Interviews provided additional support for these findings (end-of-semester survey can be found in [Appendix B](#)). For example, learners' interviews highlight the pragmatic features they acquired through doing the tasks. In the *Ordering food* task, learners had to use the correct terms to address restaurant staff, which is particularly important in Vietnamese as learners must choose appropriate terms depending on the age and social status of their interlocutor. One L2 student wrote:

“It was very helpful doing the ‘your turn to order’ task as a group. I think it helped reinforce the sentence structures and also the relational terms between the addresser and addressee. It helped me understand the small nuances of the culture when speaking, which is very important. Also listening to the heritage speakers, and the teacher correcting mine and others’ pronunciation helps me correct mine.”

This comment not only highlights the relevance of the task for both the mixed L2 and HLL students, but it also illustrates how HLLs may provide additional support and modeling for L2 learners. Overall, survey results indicate that learners had positive perceptions of the course and its effectiveness for learning Vietnamese, with nearly all survey questions having mean scores of 4 or higher on a 5-point scale. [Figure 6](#) provides complete results for the course evaluation survey, illustrating learners' positive perceptions of the instructor, course, materials, and tasks.

Figure 6*Summary of Students' Course Evaluation in Cycle 1 (N=15)*

Statement	Mean	SD
1. The content of the class matched my proficiency level.	4.33	0.62
2. I prepared for class meetings.	3.93	0.88
3. I actively participated in class.	4.33	0.62
4. I've developed the skills I need in this class.	4.33	0.65
5. I understood the material in this class.	4.40	0.51
6. I can apply the tasks learned in this class to a new context.	4.53	0.64
7. The instructor was approachable.	4.93	0.26
8. The instructor motivated me to learn.	4.80	0.41
9. The way the instructor introduced new concepts supports my learning.	4.67	0.49
10. The way the instructor conducted this class kept me engaged.	4.60	0.51
11. The feedback I got from the instructor helped me learn.	4.80	0.41
12. The course content was presented in a way that helps me learn.	4.53	0.52
13. The instructions for completing assignments were clear.	4.87	0.35
14. The out-of-class assignments helped me learn.	4.47	0.64
15. There were enough opportunities to practice what I was learning.	4.27	0.64
16. The tasks that we did in pairs or groups in class helped me learn.	4.60	0.63
17. The pronunciation practices via Flipgrid helped me learn.	4.53	0.64
18. The Quizlet helped me learn.	4.78	0.67
19. This course used TBLT. I understand the method and the course structure well.	4.67	0.49
20. In general, I think TBLT is effective and helpful.	4.47	0.64

Findings also demonstrate that learners recognized real-world task applicability within and beyond the classroom (item 6, $M = 0.53$, $SD = 0.64$). Interview data added further support.

Charlotte (a HLL) stated, “A lot of the things that we were assigned to do like the homework or the tasks in class really trained us to actually practice Vietnamese in a real life setting.” Similarly, Lam, another HLL, said: “You can master specific interactions that you’re more likely to use.”

Recognition of the tasks’ real-world authenticity extended to non-HLLs as well, with one L2 learner commenting: “[It] feels more accomplished when a task is “learned” and achieved which can be motivating to learn the next task. [It was] easier to focus on a certain task and can teach words and grammar off of the tasks, not as overwhelming as textbooks and grammar drills, more “fun” and easy to know when you’ve achieved something, applicable situations.” Together, these excerpts highlight how both L2 and HL

learners' increasing confidence in their interactional skills fostered meaningful connections for using Vietnamese beyond the classroom.

Results also suggest that learners recognized the potential benefits of technology-mediated tasks to foster real-life connections, specifically in terms of HLL learners' relationships to their families and culture. For example, interview data demonstrated that for HLLs, task-based interactions provided them with opportunities to improve their communicative skills, thereby fostering deeper connections with their family members. For instance, Mia, a HLL, said: "I'm glad that I know Vietnamese now. Before, I felt a little bit ashamed. Half of the girls my age that know my family know Vietnamese. So it's like I'm a little black sheep or something. I feel like it's expected to know Vietnamese." Another HLL stated "I felt ashamed for not speaking Vietnamese. I felt a disconnection with my mom for not speaking Vietnamese at home...but now I'm getting a bit better. My mom is happy."

Technology-mediated TBLT

Results also demonstrated learners' recognition of the affordances of technology. Learners indicated a slight preference in terms of efficacy for Quizlet ($M = 4.78$, $SD = 0.67$) compared to Flipgrid ($M = 4.53$, $SD = 0.64$). On her survey, one student mentioned how Flipgrid supports her learning through listening to feedback from the teachers. She stated: "I appreciate the feedback you gave on Flipgrid. I listened to it and could fix my pronunciation." Another student wrote in their survey response: "I like Quizlet a lot, with the pronunciation, particularly for words that are different in Northern and Southern dialects. It's so helpful!" Learners also commented on the use of Kahoot games as post-task activities to provide opportunities to focus on forms, stating that it wasn't "as overwhelming as textbooks and grammar drills."

It is worth noting that due to historical events such as the Fall of Saigon in 1975, the majority of Vietnamese HLLs in the US, whose parents or grandparents fled to the US from Southern Vietnam, have picked up the Southern dialect at home. However, many Vietnamese teachers in the US, including Hoa, speak the Northern dialect. Most Vietnamese teaching materials available in the US also use the standard Northern dialect, which differs significantly in tones and lexical elements from the Southern dialect. This discrepancy makes the learning at an elementary proficiency level even more challenging. By using Quizlet, with its voice recording affordances, Hoa could better support student learning. Another student also highlighted the value of the stimulating visuals in the multimodal course. She said: "We had a lot of visual stimuli which is what you kind of need in a Zoom class." These findings provide encouraging evidence for the use of technology-mediated task-based learning for LCTL, particularly as all students in this study said it was their first time learning a language using a technology-mediated task-based approach.

Challenges and Improvements in Cycle 1

Although learners in Cycle 1 recognized how TBLT and technology may facilitate language learning and use, they also pointed out several challenges in their surveys and interviews. For example, two students pointed out there is a lack of immediate feedback within break-out rooms. One of them wrote on their survey: "When you are at the level you barely understand you don't know if you're right or wrong." Similarly, interview results demonstrated that five students wanted to be explicitly taught grammar features and sentence structures, raising concerns about the lack of grammar or vocabulary drills. Two other learners mentioned that they felt the course did not provide sufficient tone drills. Emily, an L2 learner, criticized the TBLT method as it prompts a "shallower understanding of grammar, more difficult to engage with the language outside of those tasks." Concerns regarding learners' desire for explicit instruction, and the issue of task transferability have been noted in previous classroom research (e.g., Swan, 2005), which indicates that these are ongoing challenges for task-based classroom practices.

These issues related to feedback and explicit instruction were also noted in Hoa's teaching journal. For example, her teaching journal (Figure 7) illustrates that she reflected on the kind of explicit or implicit feedback she should provide, to which students, and on what features.

Figure 7

Excerpt from Hoa's Teaching Journal on October 11, 2021

When I went into David and Robert's room today, both David and Robert said "gà phở" [soup chicken], instead of "phở gà" [chicken soup]. So I provided them with a recast first, I said "Cho tôi hai tô phở gà [I'd have two bowls of chicken soup]."

Robert noticed it and said, "Oh I have always said, "gà phở." So is the adjective always before the noun?" Then he asked me more about the rules so I also explicitly explained the grammar point to both of them. Since they are true beginners and have had trouble with this issue, I think that it was OK to tell them the rules. They seemed ready to learn them at that point.

The above note was one of the times when she reflected on what kind of feedback she should give to the students and whether it was appropriate. Although salient grammar points may be noticed by learners when doing tasks, providing direct instruction for less salient grammar points, as well as pronunciation and spelling of difficult sounds and diacritics, may help support learners' development (Ellis, 2017). In response to these issues, the design and sequencing of tasks was re-evaluated to provide task repetition for less salient language forms. Although previous research suggests that TBLT may help learners find multiple ways to independently learn new linguistic features rather than relying solely on their teacher's explicit instructions (McDonough & Chaikitmongkol, 2007), task repetition may be needed due to the limited interactional opportunities for L2 learners outside the classroom (Erlam & Tolosa, 2022).

Furthermore, two students, Tom and Linda, both remarked in their interviews that they felt the lack of sufficient tone drills was a shortcoming of the course. While Linda was a Mandarin heritage language learner, Tom had taken Chinese as a second language. Linda said:

"Because I learned Mandarin in school. And they really like, drill that into you like, the four tones, right? Like ma, ma, ma, ma [saying the words in different tones] ...It's really like, you have to repeat it. And you have to ...just recognize it very easily. And I feel like with Vietnamese, I have not grasped that very well."

Vietnamese has six distinctive tones, and although instruction on tones was integrated into the first task of the semester, some learners are likely to need direct and explicit support with tones to promote learning and development.

Curriculum Modifications

In response to the challenges outlined above, a number of substantial changes were made to the curriculum in order to meet learners' L2 needs and expectations for the next cycle. These are summarized in [Figure 8](#).

Figure 8*Challenges in Cycle 1 and Proposed Changes in Cycle 2*

Challenges	Proposed actions
1. Clarity of task instructions, particularly in an online environment, was crucial, especially when students were not familiar with TBLT.	Making task explanations as clear as possible, including utilizing online tools such as the highlighter feature or online classroom demonstrations to model and clarify task goals and instructions.
2. Dialects, pronunciation, and tone marks posed unique challenges for beginning learners of Vietnamese in L1 English contexts, suggesting that learners need explicit instructional support to overcome these challenges.	Adding pronunciation practice to vocabulary items on Quizlet sets, including both northern and southern Vietnamese dialects when appropriate.
3. Class management and activities needs to address proficiency gaps and various needs for learning of learners. Teachers should carefully consider pairing and grouping strategies to help reduce the anxiety of non-HLLs or low proficient HLLs and create a supportive learning environment for students at all proficiency levels.	Pairing students of the approximate levels more frequently during the first semester; avoiding pairing L2 learners with more advanced HLLs; in the second semester, provide more opportunities for learners to be mixed up with partners of different proficiency; Teaching strategies to work in pair sufficiently to both HLLs and non-HLLs; Promoting activities fostering connections between learners HLLs and Vietnamese culture; particularly connections between HLLs and their, family, and identities.
4. Current task sequencing and complexity were difficult for beginning level learners, especially in an online learning environment. This finding highlighted the need for increased scaffolding for developmental and technology-related support, such as using Vietnamese websites, alongside a redesign of the curriculum to facilitate the efficient delivery of course content.	Revising the number of tasks in the course and adjusting task sequencing to reflect increasing complexity over time. Providing additional scaffolding, especially for tasks introducing new topics, by creating additional input-based materials, 'block-building,' and pedagogic tasks. Designing interactive tasks leveraging the affordances of the online environment, such as adding real life 2D pictures and 3D images to reduce task complexity and improve learners' motivation.
5. Online group work was challenging as learners lacked opportunities for immediate feedback from the instructor.	Designing post-task activities through interactive online games, such as Kahoot, that can provide learners with feedback and explicit instruction on grammatical rules when necessary.

Cycle 2: Action Research Findings

Overall Efficacy of the TBLT Curriculum

Following the curricular changes in response to Cycle 1, learners' interview and survey responses from Cycle 2 suggest overall positive perceptions of TBLT. For example, survey items targeting learners' evaluation of TBLT improved compared to Cycle 1, as illustrated in Figure 9. The higher scores during this Cycle may be attributed to learners' increasing familiarity with TBLT, as well as the improvement of the course to meet their needs. One learner wrote in her survey, "I feel that my Vietnamese level now compared to before has improved. I feel that I can now structure better sentences when I talk and in my pronunciation." While he commented on how the course helped him with his Vietnamese, Lam, a HLL, wrote in his survey, "Reading from the textbook would be boring, doing was interesting." Lam's recognition regarding "doing" aligns with the underlying philosophy of TBLT, specifically Dewey's "learning by doing" concept (Long, 2015). Learners in this cycle also expressed that they felt more familiar with TBLT and were able to see more developmental benefits compared to Cycle 1. This suggests that learners may need time to develop their understanding of TBLT (McDonough & Chaikitmongkol, 2007), and highlights the importance of consistent task-based learning opportunities.

Figure 9

Summary of Students' Course Evaluation in Cycle 2 (n = 11)

Statement	Mean	SD
1. The content of the class matched my proficiency level.	4.36	0.67
2. I prepared for class meetings.	3.82	1.17
3. I actively participated in class.	4.27	0.79
4. I've developed the skills I need in this class.	4.55	0.52
5. I understood the material in this class.	4.64	0.67
6. I can apply the tasks learned in this class to a new context.	4.73	0.47
7. The instructor was approachable.	4.82	0.40
8. The instructor motivated me to learn.	4.64	0.67
9. The way the instructor introduced new concepts supports my learning.	4.82	0.40
10. The way the instructor conducted this class kept me engaged.	4.64	0.67
11. The feedback I got from the instructor helped me learn.	4.55	0.93
12. The course content was presented in a way that helps me learn.	4.55	0.69
13. The instructions for completing assignments were clear.	4.82	0.40
14. The out-of-class assignments helped me learn.	4.55	0.69
15. There were enough opportunities to practice what I was learning.	4.55	0.93
16. The tasks that we did in pairs or groups in class helped me learn.	4.73	0.47
17. The Quizlet helped me learn.	4.91	0.30
18. The blog writing assignment helped me learn.	4.82	0.40
19. This course used a task-based teaching method. I understand the method and the course structure well.	4.73	0.65
20. In general, I think task-based method is effective and helpful.	4.64	0.67

In addition, Cycle 2 saw positive comments about the tasks in general, with some students who had been previously concerned that task-based approaches lacked grammar drills having also recognized the opportunities for implicit learning. For example, Emily said in her interview:

“I feel like task based is good because your brain will start to more naturally connect certain things and the more time you spend with the language, the more time you’ll be able to pick out certain areas where like, Oh, that’s the same structure that we used in this and like, Oh, I finally see the parallel between that.”

Emily’s comment highlights the important role of incidental learning and drawing learner’s attention to grammar in the context of meaning to support the L2 learning process (Long, 2015). Hoa also observed this trend and wrote about it in her journal. In the example below in Figure 10, Hoa included a transcript and wrote about the case when Noah asked her about grammar.

Figure 10

Excerpt from Hoa’s Teaching Journal on April 8, 2022

- 01 Noah: Cô Hoa, how do you say ‘sometimes’. Is it *ít*?
- 02 Charlotte: Noah, do you mean *ít khi*?
03. Noah: Yes, yes. So do I say *đồ uống ngọt_ít...* Số *đồ uống ít ngọt* means a little sweet drink and *đồ uống ngọt ít khi* when I want to say I sometimes like it?
- 06 Hoa: Tôi ít khi uống đồ uống ngọt.
- 07 Noah: So the word *ít khi* comes right before the verb?
- 08 Hoa: That’s right. When you want to say I rarely like it or I sometimes like it.
- 09 Noah: Ah I see. I wanted to know the structure.

This shows great learning opportunities: students came back from the break-out rooms with more questions, on vocabulary, grammar, target structures, etc. Tasks are helping learners to notice the structures and formulate the forms on their own! Students noticed the gap in their knowledge and wanted to ask the target structure so they could use it.

In this example, Noah first asked Hoa a question about the word for “sometimes” in Vietnamese in line 01. Then in line 02, Charlotte helped Noah by saying the target compound word. In lines 03 and 04, Noah tried to insert the adverb into a sentence, but it was not grammatically correct. Hoa then provides a recast in line 06. Noah then identifies the underlying rule in line 07 and in line 08, Hoa reassured him that the rule he noticed was correct. Because the location of the adverb of time in Vietnamese is quite flexible and relatively subtle and non-salient, the fact that students noticed this is very important and helpful (Long, 2016). Finally, semi-structured interviews demonstrated that HLLs in particular felt more confident and more connected to their culture following task-based learning. One learner said she felt more confident in speaking Vietnamese:

“I was talking to my mom the other day and she was like you know your Vietnamese actually got a lot better. I’m really proud of you. I’m like thank you. Because I used to never speak before with my parents. I could speak but I was just ashamed. I didn’t want to speak. I thought my Vietnamese wasn’t good enough to speak with them. So I just didn’t. But to hear my mom say that is really gratifying.”

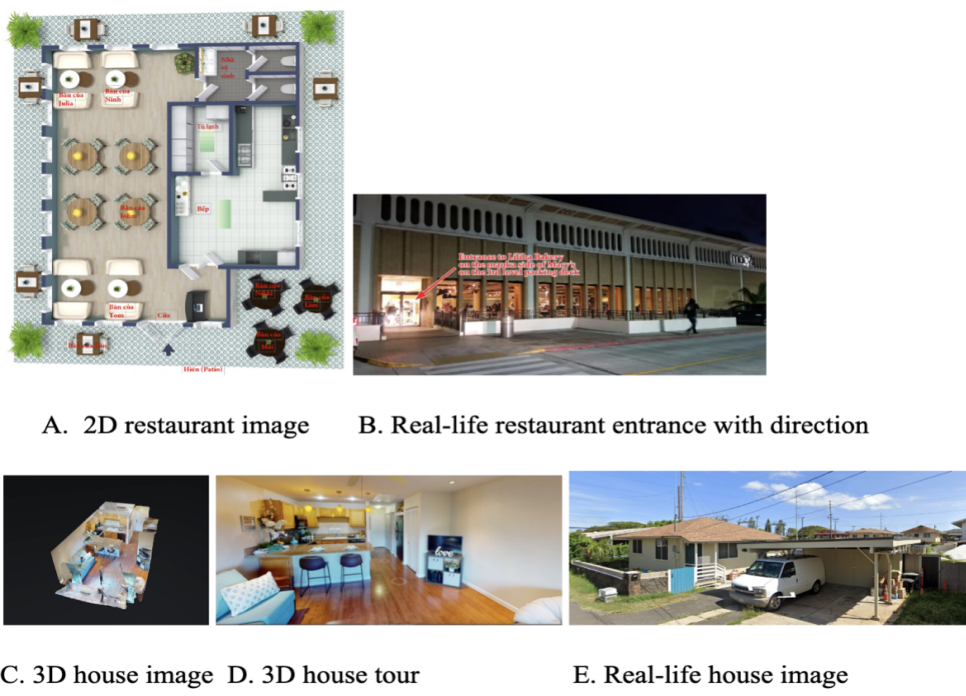
Overall, students' perceptions for Cycle 2 were positive, demonstrating that the benefits of technology-mediated TBLT (e.g., Chong & Reinders, 2020) apply in the context of a fully online curriculum for beginning L2 and HLL populations.

Technology-mediated TBLT

By the end of Cycle 2, learners’ interviews and surveys showed they recognized the affordances of technology. For example, the task *Obtaining/giving street directions*, which received negative feedback during previous cycles, now included real life images and 3D interactive tours to enhance students’ interaction with the material, as illustrated in Figure 11. These adaptations also integrated technology more intentionally (González-Lloret & Ortega, 2014), and learners recognized the advantages of these technology-mediated tasks. For example, an L2 learner wrote in the open-ended questionnaire, “It was easy and fun to learn as I learned a lot on the first day and learned easy directions with the pictures. Especially the 3-D tour, which was great in helping me learn simple directions and rooms.” Sophia, a HLL, stated how the task could help her in real life when she wrote in her survey, “I’m now able to give directions to a family member.” The revised task showed considerable improvement from previous cycles when it was considered difficult and irrelevant by the learners.

Figure 11

Examples of Integrating Interactive and Real-life Images to Task “Obtaining/Giving Street Directions”



Challenges and Improvements from Cycle 2

Although most students had overall positive perceptions of the course, some learners (n=2) again raised the issue during interviews that explicit grammar instruction may have promoted more immediate gains in

proficiency and performance. In addition, one HLL felt a traditional drill method of teaching may have helped her acquire the tones and diacritics more quickly than using a task-based approach. The same issue arose in Cycle 1, and despite Hoa's efforts, was not completely resolved in Cycle 2.

Research Question 2: Learners' L2 Development

Avant Standardized Proficiency Test: Cycle 1

Results demonstrate that learners improved from novice-low to novice-mid for both writing and speaking, which suggests that learners experienced gains in proficiency over time. Figure 12 shows the descriptive statistics for learners' pre- and post-speaking and writing tests during Cycle 1, while individual results of each students' performance are provided in Appendix D.

Figure 12

Descriptive Statistics on the Mean Scores of Avant Test Results for Pre-and Post- Cycle 1

<i>N</i> =15	Minimum	Maximum	<i>M</i>	<i>SD</i>
Pre-Cycle 1 Speaking	0	3	0.87	1.25
Post-Cycle 1 Speaking	0	4	2.13	1.64
Pre-Cycle 1 Writing	0	1	0.07	0.26
Post-Cycle 1 Writing	0	4	2.27	1.10

In order to see whether students' proficiency gains over time were statistically significant, a paired samples t-test using Bonferroni adjusted alpha levels of 0.05 was performed to compare the mean scores of each group pre- and post-Cycle 1. There was a significant difference in the mean scores for speaking skills ($p < .05$) with a large effect size ($d = 1.58$) and for writing skills ($p < .05$) with a medium effect size ($d = 1.15$). These results suggest that task-based instruction was beneficial for learners' language proficiency over time. Figure 13 provides the statistical findings.

Figure 13

Results of Paired Sample T-test for Pre-and Post- Cycle 1 Avant Test Scores

Paired Scores	<i>M</i>	<i>SD</i>	<i>t</i>	df	Two-Sided <i>p</i>	Cohen's <i>d</i>
Post Cycle 1 Speaking- Pre Cycle 1 Speaking	1.27	1.58	3.10	14	.008	1.58
Post Cycle 1 Writing - Pre Cycle 1 Writing	2.20	1.15	7.43	14	<.001	1.15

Avant Standardized Proficiency Tests: Cycle 2

Figure 14 provides the descriptive statistics for learners' Avant speaking and writing test results at three different times: pre- and post-Cycle 1 and post-Cycle 2. Because there were only three weeks in between the post-Cycle 1 tests and when Cycle 2 started, post-Cycle 1 tests served as the pre-test for Cycle 2. The scores for both writing and speaking for the post-Cycle 2 course ranged from level 2 (novice-mid) to level 4 (intermediate-low), a notable improvement when compared with the post-Cycle 1 tests. In addition, the

standard deviation values were also smaller, suggesting that the within-group gaps in proficiency became smaller over time. Individual results of the students' performance are provided in [Appendix E](#).

Figure 14

Descriptive Statistics of Avant Test Results for Pre-and Post-Cycle 1 and Post-Cycle 2

	Minimum	Maximum	<i>M</i>	<i>SD</i>
Pre Cycle 1 Speaking	0	3	1.18	1.33
Post Cycle 1 Speaking	0	4	2.18	1.78
Post Cycle 2 Speaking	2	4	3.09	.70
Pre Cycle 1 Writing	0	1	.09	.30
Post Cycle 1 Writing	0	4	2.00	1.10
Post Cycle 2 Writing	2	4	3.00	.90

Descriptive statistics demonstrate that the mean speaking scores improved from 1.18 at pre-Cycle 1 to 3.09 (novice-high) at post-Cycle 2, while mean writing scores improved from 0.09 at pre-Cycle 1 to 3.00 (novice-high) at post-Cycle 2. After two consecutive semesters of technology-mediated task-based learning, the average scores of the class improved from non-ratable/novice-low to novice-high, demonstrating that beginning-level learners improved their speaking and writing proficiency over time. To see if learners' proficiency gains in speaking and writing were statistically significant, a one-way repeated measures ANOVA was conducted. Data met the underlying assumptions for sphericity and normality. Results show that the main effects for both Speaking ($F(2,20) = 8.874, p = .002, \eta^2 = .47$) and Writing ($F(2,20) = 40.254, p < .001, \eta^2 = .801$) were significant, indicating significant growth in proficiency over time. Pairwise comparisons for Speaking indicated a significant difference from pre-Cycle 1 to post-Cycle 2, while all other comparisons were non-significant. For Writing, pairwise comparisons demonstrated significant differences from pre-Cycle 1 to post-Cycle 1 and pre-Cycle 1 to post-Cycle 2. All remaining comparisons were non-significant.

Discussion

The current study explored how AR can initiate bottom-up curriculum design for an online task-based LCTL classroom with mixed populations of beginning HLLs and L2s. Creswell and Creswell's (2022) model for mixed methods design was used to explore learners' perceptions of the efficacy of technology-mediated TBLT as a pedagogical approach. Multiple data sources demonstrated that learners in both cycles understood and recognized the curriculum's value in presenting them with "real-life" tasks directly relevant to their real-world needs. These findings support previous research exploring learners' perceptions of task-based approaches (e.g., Ellis, 2017). In addition, results demonstrated that with an attentive and iterative design process guided by AR, an online TBLT course can effectively meet the interactional and developmental needs for mixed L2 and HLL beginning level populations.

For example, educators might further strengthen curricula for mixed learners, specifically in terms of developing more input-based materials and pedagogic tasks to provide sufficient scaffolding as well as use task repetition to support learners' noticing of less salient features. In addition, learners' interviews and

surveys highlighted which types of tasks were challenging and would benefit from additional support, particularly in terms of more form-focused or direct vocabulary instruction. Furthermore, research has highlighted how task repetition may reduce learners' cognitive burden (Kim et al., 2022), thereby freeing up their attentional resources for other task features. Teachers may thus draw on these design features to support learners from various backgrounds and experiences.

This study also highlighted the affordances of technology-mediated learning environments for LCTLs. Learners commented on the rich interactional opportunities available during video-chat. Notably, applications like Flipgrid and Quizlet proved invaluable for pronunciation practices and allowed students to receive targeted feedback from the teacher. Learners reported that listening to recordings of peers with various Vietnamese dialects facilitated improvement in their pronunciation skills, a benefit that has been explored in existing literature (Guillén et al., 2020; Wallace & Choi, 2022). The benefits of using 2D and 3D elements in the pedagogic tasks also helped lessen the cognitive burden for learners, while keeping them engaged in the classroom, as reported in Cycle 2. In addition, online learning cultivated essential "non-language skills" (Chong & Reinders, 2020), as learners in Cycle 2 reported engaging with authentic Vietnamese websites for tasks like online shopping. The incorporation of games like Quizlet, Kahoot!, and Bamboozle also encouraged learners' engagement, an important consideration with fully online contexts (González-Lloret, 2020; Guillén et al., 2020). Together, these findings support previous research highlighting the benefits of technology-mediated TBLT (González-Lloret, 2020; Ziegler, 2016), along with González-Lloret and Ortega's (2014) call for educators to thoughtfully and intentionally integrate technology. These findings highlight the need to focus on the various affordances that technology can offer rather than focusing on the technology itself (González-Lloret, 2020).

Interview and survey data also demonstrated that HLLs reported enhanced confidence, deeper social and cultural connections, and increased usage of Vietnamese with their family members. These data provide additional support for the affective and developmental advantages associated with technology-mediated TBLT (e.g., Thorne et al., 2015). Importantly, Belpoliti (2015) suggests that HLLs may lack confidence in the target language, often attributed to a lack of formal language education. However, this study's results emphasize that the implementation of a carefully designed TBLT curriculum may remedy the issue by providing learners with an environment suited to supporting HLLs' confidence, especially those at beginning proficiency levels. Heritage learners also recalled how they initially felt disconnected and ashamed for not speaking Vietnamese with their family members, but they were able to communicate more effectively after the course. These findings lend further support to previous research indicating that a well-designed course that emphasizes socialization and community building can facilitate the development of HLLs' identities, a critical aspect in promoting heritage language acquisition (He, 2010). Taken together, the current findings suggest that an online TBLT program can effectively support the fostering and promotion of HLLs' identity and connection to their culture.

Consistent with previous research on the efficacy of TBLT for L2 learning outcomes (e.g., Ziegler, 2016), statistical analyses demonstrate significant improvements in learners' speaking ($d = 1.58$) and writing skills ($d = 1.15$) over time as learners increased their proficiency scores from Cycle 1 to Cycle 2. These large and medium-large effect sizes suggest that the technology-mediated task-based instruction had a substantial impact on learners' proficiency, supporting previous findings regarding the efficacy of fully online task-based instruction (e.g., Nielson, 2014). In addition, these results show that beginning level learners benefit from technology-mediated task-based interaction, supporting previous claims regarding the efficacy of tasks for beginners (Ellis, 2017; Long, 2015; Shintani, 2014). However, these findings contrast with previous research recommending a weak form of TBLT for beginning learners (Bao & Du, 2015), highlighting the need for further exploration of various proficiencies in task-based environments.

In addition, learners' target language development significantly improved over time, aligning with previous findings (Nielson, 2014) and adding support for the positive impact of TBLT on L2 (Bryfonski & McKay, 2019, $d = 0.93$) and HL development (Bowles & Torres, 2022, $d = 0.57$). The results highlight how the affordances of technology-mediated TBLT, such as providing additional processing time, increasing the

salience of key features, and offering diverse opportunities for interaction (Chong & Reinders, 2020; Ziegler, 2016), can support the development of production skills across different learner populations.

Although results indicated significant improvements, it is important to note that there were no significant differences on learners' pre- to post-Cycle 1 speaking scores. This suggests that the efficacy of the TBLT curriculum for oral skills may only have been noticeable after two semesters for speaking proficiency. In addition, since Vietnamese is a tonal language, it may take L2 students more rigorous or form-focused practice to be able to produce language that can be intelligible to tolerant speakers. While there have been no studies assessing tonal acquisition for Vietnamese, research on Chinese language has hinted at the same issue (e.g., Zhang, 2018), which suggests the need for further research.

Overall, this study's findings demonstrate that action research is a valuable tool for developing an online TBLT program. However, certain challenges may persist when teaching beginning learners of a LCTL like Vietnamese. Such challenges include the absence of explicit grammar instruction, as well as the generalizability and transferability of tasks applicable to other contexts. Previous research has identified similar challenges (Ellis, 2017), which highlights the importance of individualizing instruction for the needs of the classroom (Long, 2016). Despite Hoa's efforts across different AR cycles in this study, these challenges persisted. This finding is consistent with previous research indicating these perspectives are common among learners used to synthetic syllabi and grammar-focused language classes (e.g., McDonough & Chaikitmongkol, 2007). Therefore, learners may need consistent exposure to task-based approaches to promote 'buy-in.'

Conclusion

This study has several strengths, including its demonstration of the feasibility of a bottom-up curriculum development approach and the effective use of technology-mediated TBLT to promote learners' confidence, social and cultural connections, and L2 learning outcomes. The iterative design process guided by action research allowed for continuous improvement, making the course highly responsive to the needs of mixed learner populations, particularly HLLs and L2 learners. However, the study also has limitations, including constraints in conducting action research within a small language program and methodological challenges, such as the absence of a control group, a small sample size, and limited testing for receptive skills. For example, HLLs who use Vietnamese outside class may have improved their Avant test scores due to factors beyond TBLT instruction. Future research should address these limitations by incorporating larger sample sizes, control groups, and more comprehensive assessments of both receptive and productive skills. This would help validate the findings and explore additional strategies to enhance curriculum design for mixed learner populations.

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Notes

1. Sample [target tasks](#) for year 1.
2. [Samples of the speaking, listening, reading, and writing assessments prompts](#).
3. The [background survey questionnaire](#).
4. A [sample lesson plan](#).

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Appendix A. Participant Profiles: Participants of Cycle 1 and 2

Name	Background and prior knowledge	Exposure/ use of Vietnamese at the time of the course	Reasons for learning Vietnamese
Amelia^a	A few basic words and phrases; basic speaking and writing learned at temples when small	Exposure to Vietnamese at work (a nail salon) or when visit family but only speaks English to them	To better communicate with family and feel more in touch with the culture
Abigail^{abc}	Basic conversations at home; no reading or writing	Speaks mostly in Vietnamese at home to mom and grandparents	To learn to read, write, and speak with correct tone and sound
Charlotte^{ac}	Speak basic conversations, but no reading or writing;	Parents speak to her in Vietnamese but she responds in English; has a family chat group in Vietnamese	To be able to converse with her parents and her relatives in Vietnam in Vietnamese
Mia^{ac}	Basic words and phrases; lived with grandparents but spoke English to them; no reading or writing	Occasionally when visits home or talks with family on phone or texts; visited Vietnam several times	To impress her mom when she goes visit her next year; to be able to order <i>pho</i> in Vietnamese
Lam^{ac}	Basic conversions at home; some basic reading but no writing	Every day at home, but doesn't like to communicate with family	To not have his parents laugh at him trying to speak
Oliver^{ac}	Understands a few basic words and phrases but does not speak, read, or write	Only speaks in English at home	To communicate with his family members and to learn about his culture.
Thu^{ac}	None	Only speaks English at home	To speak more to her family
Noah^{ac}	Daily conversations with family; some reading skills; took lessons at church when small	Mostly speaks in Vietnamese at home to mom	To be more comfortable speaking with family

Sophia^{ac}	Daily conversations with family; some reading basic, no writing	Speaks in Vietnamese to parents and grandparents everyday	To be able to communicate with her relatives more fluently
Emily*	Born in Vietnam but adopted by American parents; picked up basic words and phrases when living in Vietnam briefly during high school	None	To develop a solid foundation in Vietnamese that she can build on, in grammar, vocabulary, pronunciation, and conversation; one goal is to move back to Vietnam
David^{*ac}	None	Surrounded by friends and step-mother and step-grandmother speaking Vietnamese, but only speaks in English to them	To know the basics in a conversation and how to start one
Linda*	None	None	To do basic conversational - enough to get around Vietnam if she visits
Tom*	None	None	To be able to pronounce Vietnamese sounds and tones correctly; able to have basic conversations in Vietnamese; understand how to read Vietnamese

Robert*	None	None	To develop a greater understanding of the Vietnamese tone system, Sino-Vietnamese vocabulary and the differing usages of etymologically-related words across the Sinosphere; to be able to talk with many of my Vietnamese friends back home; to travel to Vietnam (but this travel plan did not work out later)
Emma ^{bc}	Some basic words and phrases	Occasionally when visits home or when calls or texts family; has a family group chat in Vietnamese	To be able to speak to more of her family members and gain a deeper connection to her culture

Note. Bolded names are students who continued to Cycle 2

*are non-HLLs

^a took the course to fulfill language requirement policy

^b speaks the Central dialect of Vietnamese at home

^c speaks the Southern dialect of Vietnamese at home

Appendix B. Course Evaluation Surveys

Part 1: All items are the same across the four Cycles

1. The class matched my proficiency level.
2. I prepared for class meetings.
3. I actively participated in class.
4. I've developed the skills I need in this class.
5. I understood the material in this class.
6. I can apply the tasks learned in this class to a new context.
7. The instructor was approachable.
8. The instructor motivated me to learn.
9. The way the instructor introduced new concepts supports my learning.
10. The way the instructor conducted this class kept me engaged.
11. The feedback I got from the instructor helped me learn.
12. The course content was presented in a way that helps me learn.
13. The instructions for completing assignments were clear.
14. The out-of-class assignments helped me learn.
15. There were enough opportunities to practice what I was learning.
16. The tasks that we did in pairs or groups in class helped me learn.

Part 4: Additional questions in Cycle 1

17. The pronunciation practices via Flipgrid helped me learn.
18. The Quizlet helped me learn.
19. This course used TBLT. I understand the method and the course structure well.
20. In general, I think TBLT is effective and helpful.

Part 5: Additional questions in Cycle 2

17. The Quizlet helped me learn.
18. The blog writing assignment helped me learn.
19. This course used a task-based teaching method. I understand the method and the course structure well.
20. In general, I think task-based method is effective and helpful.
21. The task assessments are fair and accurate. (may take out from Cycle 4)

Appendix C. Interview Questions

1. Overall, how would you evaluate this course? Please explain.
2. What do you see as the strengths and weaknesses of task-based language teaching?
3. To what extent were you able to use Vietnamese outside of class, in real life?
4. To what extent did you feel the course supported your understanding and connection with Vietnamese language and culture?
5. What did you think about the technology-enhanced activities (such as Duolingo, Flipgrid, Quizlet), as well as learning this course over Zoom?
6. Among all the tasks that we did this semester, please tell me:
 - a. Which one was the most helpful for you? Please explain.
 - b. Which one was the least helpful? Please explain.
 - c. Which one was the most difficult? Please explain.
 - d. Which one was the easiest one? Please explain.
7. To what extent did you think the pedagogic tasks helpful in assisting you to do the target task at the end? How did you feel about the sequencing of those pedagogic tasks? Would you like to change anything?
8. What are your opinions about the feedback that you received from the teacher and from your peers in this class?
9. Are there any things you think I can do to improve the quality of this course if I'm going to teach it again?
10. Do you have any other comments or information that you would like to share?

Appendix D. Individual Learner Performance on Avant Assessment Cycle 1: Pre and Post Cycle 1 Course Result

Name	Pre-Cycle 1 Avant test		Post-Cycle 1 Avant test	
	Speaking	Writing	Speaking	Writing
Robert *	0	0	3	4
Tom *	0	0	2	2
Emily *	0	0	0	2
David *	0	0	0	3
Linda *	0	0	0	3
Emma	0	0	3	3
Oliver	0	0	0	2
Abigail	0	0	3	4
Sophia	0	0	4	1
Mia	2	0	1	2
Noah	3	0	3	3
Lam	3	0	4	0
Charlotte	3	0	4	1
Amelia	1	0	4	2
Ly	1	1	1	2

Results of the Avant Standardized Proficiency Test in Speaking and Writing Skills

Note. * = non-HLLs; 0 = not ratable; 1 = novice-low; 2 = novice-mid; 3 = novice-high; 4 = intermediate-low

Appendix E. Individual Learner Performance on Avant Assessment Cycle 1 and 2: Avant Test Results at Three Points of Test Administration

Name	Pre-Cycle 1		Post-Cycle 1		Post-Cycle 2	
	Speaking	Writing	Speaking	Writing	Speaking	Writing
Emily *	0	0	0	2	4	3
Jack *	0	0	0	3	2	2
Oliver	0	0	0	2	3	4
Mia	2	0	1	2	3	2
Abigail	0	0	3	4	3	4
Sophia	0	0	4	1	3	3
Noah	3	0	3	3	3	4
Lam	3	0	4	0	4	2
Charlotte	3	0	4	1	4	3
Amelia	1	0	4	2	3	4
Ly	1	1	1	2	2	2

Note. * = non-HLLs; 0 = not ratable; 1 = novice-low; 2 = novice-mid; 3 = novice-high; 4 = intermediate-low

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