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Taking it from task:
Determining Japanese university learners' technological needs

日本人学生の学習における技術的ニーズの把握

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Abstract

Task-based language teaching (TBLT) is an approach to language education that focuses on meaning through the use of different tasks. In recent years, TBLT has expanded into the medium of online learning through the concept of "technology-mediated TBLT" (Gonzalez-Lloret & Ortega, 2014). One essential feature of both TBLT and technology-mediated TBLT is the use of a needs analysis. While needs analyses are typically concerned with the needs of the students related to the tasks, they can also be used to find out what technologies the learners have experience with or would like to learn. In this study, a needs analysis was carried out with university English language learners (N = 159) at a large private university in Japan to determine which technologies students have knowledge of and would find helpful during their coursework and in their futures. A short bilingual six-question needs analysis was administered online in the second week of class, exploring the student's self-reported technological needs in general English classes, other classes, and their futures outside of the university. While some of the technologies are seen to be useful outside of English classes, many of the available technologies related to studying English were not.

Keywords

TBLT, needs analysis, technology, university

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INTRODUCTION

For years, the use of technology inside the language classroom has been a talking point for many language educators. This medium of online instruction quickly took over discourse around the world, and especially in Japan. In 2020, this switch to online teaching could be considered Emergency Remote Teaching (ERT), with plans for this style of teaching to return to prior methods (Hodges et al., 2020). However, for many, after a year or more of technology being the medium for learning, especially in the tertiary context, the "emergency" part of ERT has now switched back to the physical classroom but with some additional remote teaching within many curriculums.

With the initial implementation of ERT, many of the previous concepts that guided the course design used for on-campus lessons had to be ignored. Furthermore, at the time, it could be presumed that the emergency situation allowed for this rough transition. Regardless, after emergency remote teaching, a call to normalize online learning had taken place. Courses must be designed for multi-modality with an unknown future as states of emergency and other care-taking protocols were continuously placed and lifted in Japan. The content and pedagogy has continued to transform further from the face-to-face only lesson modality. Research on technology-mediated language learning has been widely conducted across various contexts and technologies but has been pushed even more into the spotlight since the COVID-19 pandemic (Hasumi & Chiu, 2024). Now, the attention to course needs and syllabus design has to be re-evaluated to reflect this new norm of online learning as a primary or secondary medium of instruction. In primary and secondary education, these effects will be felt, but more importantly, in tertiary education, which is more prone to the swings of the pandemic.

LITERATURE REVIEW

Needs Analysis

While many have defined needs in language learning, one easy to digest definition comes from Norris (2009). Norris explains needs as simply the course goals, which do not come only from the learners, but needs can and should be a combination of learners' needs, institutional needs, and the needs proposed by the educator. In this nature, a needs analysis is the "systematic collection and analysis of all information necessary for defining a defensible curriculum" (Brown, 2009, p. 269). In this definition, Brown suggests that a defensible curriculum is one that satisfies the language learning and teaching requirements of all parties involved in the learning process, not only the students but also the educator and the institution.

Needs analysis is a far-reaching concept that is not subject-specific, meaning it can be found in quite a few disciplines outside of language learning. While the ideas of needs appeared in language learning as early as the 1920s, it was not until the emergence of the academic concept of English for Specific Purposes (ESP) that needs analysis began to take hold in regular curriculum planning in the 1960s (West, 1995). And while some practitioners caught on to the critical implications of a needs analysis for course design, the notion of TENOR (Teaching English for No Obvious Reason) was still prominent in the 1980s when Abbot (1980) introduced the acronym that defined the exclusion of needs. Following this, needs analysis has taken a solid fundamental hold in the area of task-based language teaching (TBLT) (Nunan, 2004). In TBLT, the task is a prominent component and a fundamental necessity for curriculum and task development. In simple terms, by learning the needs of the language learner, the course designer can choose tasks that will increase the significant and useful language

learning exposure to address those needs.

Technology-Mediated TBLT Needs Analysis

González-Lloret & Ortega (2014) set out to combine the ideas of TBLT and technology together, coming up with the term Technology-mediated TBLT (TMTBLT). In this way, the ideas of TBLT are not only transferred to a technology-centered context, but the technology is incorporated into the TBLT initiatives. They suggest that new technologies have implications for educational design and are not only tools for taking previous in-classroom tasks and using technology to solve them. They identified that technologies are not neutral tools, and instead, they have the fundamental characteristic of creating new tasks. To incorporate TBLT and technology, the technology needs to be adopted with a focus on programmatic tasks, and technology use should be utilized. The technology can be adapted for various tasks, and the tasks can be adapted with various technologies when needed.

Within the concept of TMTBLT, the previous definitions and values associated with TBLT need to be expanded to include technology. In concerns of needs analysis, while linguistic and informational needs were of concern, now the addition of technological needs becomes apparent (González-Lloret, 2014; Smith & González-Lloret, 2021). Just as important as the other needs for a successful course design, the technological needs of the learners also need to be observed to better address the needs of the learner, educator, and institution. With this in mind, course designers should be wary of online tools that do not serve the purpose of reaching course goals (Lafleur et al., 2020). Most studies related to TMTBLT have primarily centered around perceptions of TMTBLT, effectiveness, ask design, and factors related to implementation of TMTBLT (Bhandari et al., 2025). However, the concept of learners' technological needs has rarely been examined, if at all, in any context. The following study was carried out to better evaluate the technological needs of English language learners in compulsory classes in Japan. Additionally, self-reported technological needs and desires of university students in Japan were examined, not only inside the classroom but also in their future daily and employment lives.

Research Questions

To date, research on TMTBLT has yet to focus on needs analysis (Bryfonski et al., 2025; Kim & Namkung, 2024). This is reflected in the few studies done on the topic of needs analysis despite the continued persistence that they are foundational to TBLT (González-Lloret, 2014) Thus this research set out to answer two research questions related to TMBLT needs analysis.

1. What technologies do English language university students feel are needed for English studies?
2. What technologies to English language university students feel are needed for situations outside of their English classes?

METHODS

Participants

The participants consisted of 159 English language learners at a large private university in Japan enrolled in compulsory English courses. These students come from two separate academic departments. The English courses the participants were enrolled in were all developed for first- and second-year undergraduate students. One department consisted of only one class of learners, while the other consisted of seven different classes. Of the seven classes, two consisted of primarily second-year students. While some outliers did exist,

the vast majority of the participants were in their first or second year of university. Most students were primarily schooled in Japan; however, a small portion of students from China and South Korea were involved with this study.

Measurement Tools

The researcher created a needs analysis questionnaire to better understand students' past English-related technology uses, knowledge, and future perceived needs. In addition, what kinds of technology the students will need in non-English courses, in their work, and in their general lives outside of university were included. Semi-structured interviews and questionnaires are often used for needs analysis by language educators and researchers (Long, 2005). Due to the online element and time constraints, an open-ended questionnaire was used for this study. In addition, simplicity and accessibility were of concern along with the exploratory aspect of this research, so a brief six-item questionnaire was used. The questionnaire aimed to find some possible responses to these questions:

1. What technology have you used to learn English in the past?
2. What technology have you heard about for learning English?
3. What kind of technology do you think might help with your English language classes?
4. What kind of technology do you think might help with your non-English classes?
5. What technology do you think you will need for your job in the future?
6. What technology do you think you will need in your general life in the future?

Data Collection

The data was collected in the second week of the spring 2021 university school term following the first Zoom classroom session. The first class consisted of asynchronous online tasks, while the second session was an informative Zoom session about class content and some introductory group discussions. The questionnaire was administered as a Google Forms document and sent to the participants through the learning management system (LMS) used by the university for each class. In addition, during a Zoom-administered lesson, the students were told about the study by the researcher at the end of the class time and shown how they could access the information through the LMS using the screen-share function of Zoom. The questionnaire was bilingual, English and Japanese, and contained an explanation of the study and consent forms. Only questionnaires with marked consent were analyzed for this study. All questionnaires were completed during the students' own time through whatever means they deemed suitable. The data was coded into an Excel spreadsheet at the end of the second week of classes and categorized into the data found in this study.

RESULTS

In this section, the results of the questionnaire will be presented with descriptive details of the categorized types of answers and the number of occurrences. Some respondents had multiple answers for questions, and each was coded independently to ensure that all responses are accounted for in this study. All categories with two or more items can be found in the descriptive charts in this section. For all answers that did not have at least two responses attributed to them were coded together into the "Other" category. In addition, broad answers such as "computers", "smart phones"

or "virtual reality" without were combined into the General Tech category as their specificity of use could not be determined. The data was coded by the researcher by examining the responses and categorizing them into the groups that they most similarly represented.

Q1: Technologies Used to Learn English

Regarding question 1 detailing the previous use of English learning technologies, it can be seen from the following chart that most students had some experience with such technologies (see Table 1). Multiple-skill English learning websites and applications (also referred to as "apps" in this paper) were the most predominant answer, along with vocabulary study applications. Translation technology was also seen as something that could be useful for learners. The most popular single answers for this question were "none", Google Translate, and Mikan, a vocabulary study application, which could explain why these three categories had the most occurrences.

Table 1. *Grouped Responses for Used Technologies for English Learning*

Technologies	No. of Responses	Technologies	No. of Responses
English Learning/Practice	42	Quizzes	3
Vocabulary Study	35	Online English Conversation	3
None/No Answer	27	Listening	3
Translation	24	Radio/Podcasts/Music	3
Videos	16	LMS	3
Conferencing	10	Communication	3
News	9	Speaking/Video Creation App	2
Search Engine	8	Not Sure	2
Textbook Relation	6	Reference Search	2
Online Dictionaries	5	Other	7
Online Cram School	5	Total	218

Q2: Known Technologies for English Learning

Question 2 concerns technologies for learning English that students have heard of but might not have experience using (see Table 2). Numerous respondents were unfamiliar with such technologies. On the contrary, many of the answers were similar to the technologies mentioned in question 1. Due to the large number of non-answers, at about one-third of total responses, the total amount was lower for this question than the other items on the questionnaire. The most common answer in this section was "Study Sapuri"—an application with lecture videos and practice for multiple subjects, including English but with a heavier focus on English education. In addition, this application had a strong marketing presence with commercials on television.

Table 2. *Grouped Responses for Known Technologies for English Learning*

Technologies	No. of Responses	Technologies	No. of Responses
None/No Answer	57	Quizzes	3
English Learning/Practice	57	Online Dictionaries	3
Vocabulary Study	11	Radio/Podcasts/Music	2
Videos	6	News	2
Online English Conversation	6	Listening	1
General Tech	4	Corrections	1
Communication	4	Other	5
Translations	3	Total	165

Q3: Technologies Deemed Suitable for Learning English

With regards to technologies that might help students in their English language classes, the most common answers were related to "Conversation" technologies to communicate with others (see Table 3). This is different from "Conferencing" in that the conversation technologies did not specify a mode of communication. The conferencing technologies were all related to group speaking or video speaking technologies share similarities to those commonly used during ERT, such as Zoom. However, the total number of answers was again lower in this section as the participants focused more on single ideas than independent technologies and applications. Also, more specific language learning outcomes were addressed in this section, such as "Listening" and "Pronunciation". There is a distinction between "Quizzes" and "Test-focused" technologies in this section. "Quizzes" relates to non-specific quizzing and gamification applications such as Quizlet or Kahoot. On the contrary, "Test-related" is focused more on certification-level testing such as the TOEFL and TOEIC English proficiency tests.

Table 3. *Grouped Responses for Technologies Suitable for English Learning*

Technologies	No. of Responses	Technologies	No. of Responses
Conversation	15	General Tech	4
Online Dictionaries	15	None/No Answer	4
Conferencing	14	SNS	4
Listening	13	Communication	3
Translation	13	Microsoft Office Apps	3
Videos	13	News	3
English Learning/Practice	10	Reading	3
Vocabulary/Phrase Study	10	Test-focused	3
Pronunciation	8	Radio/Podcasts/Music	2
Corrections	6	Transcription	2
Quizzes	5	Other	11
		Total	164

Q4: Technologies Deemed Useful for Non-English Courses

Question 4 extends to outside English classes and addresses technologies to assist in non-English classes (see Table 4). While many students did not have an answer for this section, again, conferencing technologies were a common answer. In addition, Microsoft Office tools were explicitly addressed in these responses. Some course-specific technologies were also addressed here with tools related to "Calculation", with many participants being part of a department that deals directly with math-related courses. One interesting thing to note is that the answers for "Subject Learning/Practice" technologies were the same applications found in the English learning area, demonstrating that some study and practice applications can cover not only language courses but also have roots in other subjects as well.

Q5: Technologies Deemed Useful for Future Employment

With concerns to their potential needs for future jobs, respondents were interested in Microsoft Office applications and similar tools (see Table 5). In addition, conferencing technology was seen as something vital for their futures, showing that university students see conferencing technologies as something that will stay as a result of the need for this mode of communication during the emergency remote work brought about by the Covid-19 pandemic. This can be seen with Zoom being the top answer for this question as well as for question 4. For this item, more work-related concerns surface with work-related specific technologies, generally related to working remotely and management applications (scheduling and workflow) being seen as something that could be useful. Translation technologies reappear in this section, showing that foreign languages could hold a key importance in future careers.

Table 4. *Grouped Responses for Technologies Useful for University Non-English Classes*

Technologies	No. of Responses	Technologies	No. of Responses
None/No Answer	31	Communication	4
Conferencing	26	Evaluation	4
Microsoft Office Apps	14	Transcription	4
Calculation	9	Vocabulary/Phrase Study	4
Videos	7	Management	3
Class Relation	6	Quizzes	3
News	6	General Tech	2
Search Engine	6	Not Sure	2
Subject Learning/Practice	5	Reference Search/Library	2
Online Dictionaries	5	Other	18
Translation	5	Total	166

Table 5. *Grouped Responses for Technologies Useful for Future Employment*

Technologies	No. of Responses	Technologies	No. of Responses
Microsoft Office Apps	44	Google	5
Conferencing	38	Collaborative Work Apps	3
General Tech	15	English	3
Translation	15	Office Alternatives	3
None/No Answer	14	Health	2
Management	11	Other Presentation Tools	2
Work-related	8	SNS	2
Communication	7	Other	20
Not Sure	5	Total	197

Q6: Technologies Deemed Useful for Future General Life

Finally, in regard to their future daily lives, there are a wide variety of answers (see Table 6). Some of the more popular answers as related to general technology. Some examples of these answers are smartphones, computers, virtual reality, and augmented reality technologies. Shopping applications were seen to be important, with many answering about online shopping, reflecting the growing proportion of online shoppers, especially during the pandemic (Watanabe & Omori, 2020). In addition, translation technologies yet again are seen as necessary even outside of schooling and language education. Respondents feel that translation technologies are not only something they hold of value now but will be something that transcends into their future jobs and general life. Social networking services (SNS) and "Health" appear in this section, which were not present in other sections. A turn to holding accountability for learners' health and using technology to do so for physical fitness, communication with doctors, and about the spread of diseases are things that could be relevant to the post-pandemic needs.

Table 6. *Grouped Responses for Technologies Useful for Future General Life*

Technologies	No. of Responses	Technologies	No. of Responses
General Tech	20	Communication	5
None/No Answer	20	Cooking	4
Other	20	Home-related	4
Shopping	13	Conversation	3
Translation	12	Microsoft Office	3
Conferencing	11	Money	3
SNS	11	Online Security	3
Health	9	Videos	3
Search Engine	9	Creative	2
Not Sure	8	English	2
Management	7	Work-related	2
		Total	174

DISCUSSION

The results show that a wide variety of apps were deemed necessary across all contexts. For language classes, the participants had experiences with autonomous language learning technologies that focused on multiple skills as well as vocabulary specific technologies, which mirrored some previous studies outside of Japan (Chung et al., 2015; Dashtestani, 2016; Heil et al., 2016). Comparable results can be seen in the technology they had heard about but might have no experience with. Many participants have heard about language learning apps that practice more than one language feature. However, several responses to this question did not indicate any technology for English learning, which could suggest that learners either have not looked into such technology or the technology is not heavily advertised. When looking at technology that might help them with their English classes, many students focused more on autonomous applications to help to study. In addition, dictionaries and translation websites and applications had a strong presence. Many of the technologies mentioned were phone applications that could be accessed anywhere they bring their phones, which could be a strong reason as to why these applications are popular (Steel, 2012). Along with this, a need for technology that promoted open conversation and conferencing technology was noted as being potentially useful.

With regard to technology for non-English classes, there were a variety of answers related to specific courses as well as some general technological perceived needs. Conferencing technology was seen to be a useful technology type. An explanation for this could be attributed to the use of conferencing apps for most of the classes in the 2020 and 2021 school years at this particular university. The COVID-19 pandemic could be a possible explanation for the popularity of conferencing and communication tools within the university context across the first three questionnaire items. Microsoft Office applications were also seen to be very useful for word-processing and presentation making for university learners.

Finally, some distinctions can be made in relation to the needs of technology outside of university in future jobs and general life. Heavy emphasis was placed on Microsoft Office applications and other presentation applications, word processing, and spreadsheets as important tools for future employment. In addition, conferencing technology was again seen to be vital. The need for conferencing in school and outside was a common theme in the answers across many of the questions in this needs analysis. Translation technology appears again in this section as languages outside of the participants' native language are seen to be something that will be useful in the future. In addition, general technology and time and workflow management technology, as well as non-specific work-related technology, were something that some respondents put emphasis on in this part of the questionnaire.

For future general life, general technology is something many participants found to be useful. The high number of 'Other' answers in this section exemplifies the wide range of possible technologies for each respondent. In addition, a new category related to shopping emerges as well as health-related concerns. However, we can see some reoccurring themes, such as the need for translation, conferencing, and communication (in the form of SNS and other communication) that can also be seen in the previous responses. Some emergences of new ideologies of technological needs shaped by the Covid-19 pandemic can be seen through this data, reflecting the possible future implications of living through such an event.

Limitations

Some limitations of this study are that the questionnaire used is not a utilize pre-existing or in-depth measurement tool, being a brief six-item questionnaire, and allows the respondent to answer in any way they seem fit. This was due to the desire for multiple types of answers and not wanting to restrict the responses. However, a more structured questionnaire or semi-structured interview might lead to more specific data collection. In addition, the participant pool came from two different academic departments but was not separated in the analysis. There is merit in looking at each academic year and department independently, which was outside the scope of this study. In addition, the large improvements made to generative artificial intelligence since data collection took place may lead to significantly different outcomes if conducted today.

Finally, a needs analysis should not only address the language learner but should also look at the educators and the institution before making conclusions on task development (Long, 2005). This statement can also be applied to technological needs. This study set out to collect data and make observations about the learners' perspectives on technological needs. A more thorough analysis should be performed on information and linguistic needs before utilizing technologies for the sake of having technology in the classroom. A needs analysis should extend past the learner and also encompass the educator and institutional needs before implementing learners' needs into the classroom.

Pedagogical Implications

The data can be useful to better understand what we can do as language educators inside and outside the classroom. This could lead to learners gaining a sense of the importance of language classes for content other than learning languages. Thus, there are important implications for implementing needs analysis for collecting students' needs for technology in language learning contexts in Japan.

There are numerous examples of learners' existing knowledge and use of language study applications, particularly applications that focus on multiple language skills and vocabulary applications found in this study. Educators can help students discover some of these applications and practice them in the classroom in hopes they choose to continue using these for autonomous language learning and practice. By working with the learners to discover and used some of these technologies, the learners could feel more comfortable and avoid frustration by learning these together in class (Kim et al., 2013). This can be particularly helpful with the popularity and use of smartphones for language learning, especially in Japan (White & Mills, 2014). One area that has become apparent over the course of the Covid-19 pandemic in education is the importance of conferencing and communication applications. As educators, these resources can be highly beneficial to learn and have implications outside the language class. However, it is essential that the educator knows how to effectively use these tools to promote collaborative pedagogy that they are already accustomed to using in face-to-face classes (Cowie & Sakui, 2015). In addition, some of these tools, as some participants noted in responses to questions 4 and 5, can be used outside of school. There may be merit in focusing on these tools when possible in the language classroom. While many of the answers pertaining to Office tools and similar applications could be found in the later questions, these tools are often crucial in English courses as well. By using more word-processing applications, presentation tools, spreadsheets, and the

collaborative abilities of these technologies inside English courses, the skills learned have the potential to be transferred outside of language classes and can lead to significant benefits for career-related technological needs leading to a more authentic language learning experience.

CONCLUSION

This exploratory questionnaire put forth an open-ended needs analysis to understand the technological needs of English learners at a large private university in Japan. The participants consisted of students in first- and second-year undergraduate university English courses across two different academic departments. A needs analysis was performed to better understand technological needs in English class, in other classes, and learners' perceived technological needs outside of the university in their future daily lives and in their future careers.

A majority of the participants had some experience with technology for English classes and named quite a large variety of technologies across all six questions on the needs analysis. While some technologies mentioned can be found across all contexts, many of the technologies mentioned were specific to the contextual areas of the questions. Teachers should not only try to identify language-related technological needs, but instead, they should try to try to apply both language learning specific technologies with technologies that can be used in future daily and career contexts. In addition, as mentioned in the TMTBLT criteria, educators should spend time teaching the technology and how it applies to classroom-related tasks.

When choosing technology, as we understand from needs and the importance of avoiding TENOR-directed courses, educators and institutions also need to avoid Technology Use for No Obvious Reason (TUNOR). While this acronym is in jest, educators and institutions need to consider technology use as a way to create opportunities for learners and address technologies they may need now and in the future. By taking these ideas and utilizing them in language teaching environments, the chance for adaptation in the future could be vital to bridging the use of technology online and technology in the classroom. With this technological knowledge, learners can be better prepared for their future university lives as well as their post-tertiary lives.

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