

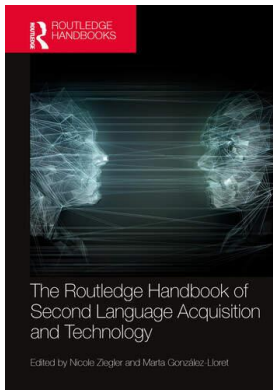
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## **The Routledge Handbook of Second Language Acquisition and Technology**

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### **Tasks in Technology-Mediated Contexts**

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# 3

## TASKS IN TECHNOLOGY-MEDIATED CONTEXTS

*Marta González-Lloret & Kristin Rock*

### Introduction

Many educators recognize the importance of preparing students for a world in which communication vis-à-vis technology and the Internet is commensurate with professional success. In order to be competitive in the modern workforce, students will need to acquire a new set of skills, including the ability to assess content that incorporates new media forms, the capacity to leverage media for persuasive communication, and the ability to collaborate virtually (Davies et al., 2011). To develop these skills, second language teachers empowered with a technology-mediated task-based language teaching (TBLT) program can guide learners through carefully constructed tasks centered on the aforementioned objectives. In addition to these long-term goals, technology has multiple short-term benefits for the learning of a second or foreign language (L2), many of which are highlighted in this chapter.

Following González-Lloret and Ortega (2014), we understand technology-mediated TBLT as programmatic, in the sense that tasks and technology are fully integrated in the curriculum and that the successful completion of technology-based tasks serves as the overall educational goal. In other words, technology and tasks permeate every aspect of the second language curriculum, from the needs analysis (Long, 2005) and the development of materials, to student evaluation and program assessment. Following this model of technology-mediated TBLT, tasks should focus on meaning, orient toward a particular communicative goal, involve the use of authentic, real-world language, and promote language acquisition. TBLT theorists have long promoted a model of second language education that is meaning- and learner-focused, and in which the notion of task simultaneously encompasses an educational goal, a pedagogic activity, and a holistic assessment (Van den Branden et al., 2009).

Notwithstanding the above recommendations, it is important to note that the incorporation of tasks in a language curriculum can result in either a *task-enhanced* or a *task-based* curriculum. Whereas in a task-enhanced curriculum, a few tasks are incorporated in an otherwise traditional L2 classroom, a *task-based* curriculum is built entirely on tasks following an experiential learning approach. This differentiation between task-enhanced and task-based is also relevant in contexts that incorporate technology, which can be labeled as *technology-mediated* (wherein technology is integrated in all steps of the curriculum) or as *technology-supported* (within which a few activities that utilize technology are included). Although we will be referring to technology-mediated TBLT, some of the research and practices reviewed in this chapter are actually isolated cases of technology-mediated tasks rather than representations of a full

TBLT curriculum. Nevertheless, this research provides excellent examples of an evolving methodology in its initial stages.

### **Historical Perspectives**

Early in the twentieth century, Dewey's (1938/1997) educational philosophy of Experiential Learning rose to prominence. Within this paradigm, learning is viewed "as a process whereby knowledge is created through the transformation of experience" (Kolb, 2015, p. 49). The tenants of experiential learning (i.e., building on past knowledge and experience through active participation, encouraging collaboration and the exchange of ideas, and combining direct experience with focused reflection) served as a juxtaposition to the decontextualized, drill-based mastery of linguistic structures common to many North American language programs at the time. Critics of such rote-based methods called for an approach to language learning centered on promoting learners' communicative competence, an approach later labeled Communicative Language Teaching (CLT). With roots in CLT and Experiential Learning, Task-based Language Teaching (TBLT) emerged as a response to what researchers viewed as only "partial incorporation of communication work within the field of language education" (Van den Branden et al., 2009, p. 5).

The interaction of tasks and technology was first highlighted by Chapelle (2001), whose foundational articles identified technologies that were particularly suited to TBLT and outlined a task framework for computer-assisted language learning (CALL). Doughty and Long (2003) proposed 10 methodological principles of TBLT and discussed the ways in which these principles could inform decisions around the use of technology for distance learning. Complimenting this research, Skehan (2003) illustrated the possibilities and the dangers of using Internet-based materials for language learning. Since the turn of the century, additional researchers have highlighted the facilitative, reciprocal relationship between CALL and TBLT (Baralt & Morcillo Gómez, 2017; González-Lloret & Ortega, 2014; Lai & Li, 2011; Thomas & Reinders, 2010; Ziegler, 2016). The amalgamation of these efforts has helped to define a solid research agenda for the continued exploration of the role of technology in TBLT.

Over the past few decades, the principles of TBLT have been applied to diverse contexts around the world, including foreign (e.g., Collettine, 2010) and second language classrooms (e.g., Payant & Bright, 2017), primary educational institutions (e.g., Shintani, 2016), secondary schools (e.g., Carless, 2007), universities (e.g., Hirofumi & Lydson, 2013), adult education (e.g., González-Lloret & Nielson, 2015), and natural contexts (e.g., Sylvén & Sundqvist, 2012). In each of these environments, technology has increasingly come to play a role in the delivery and completion of tasks. Although extremely different in research agendas, methodologies, and focus, these studies have shown that technology-mediated TBLT is feasible, and that it can have a positive impact on language learning. Provided that teachers and learners have access to technology, learning language through technology-mediated tasks can connect students to rich sources of input that might not be available otherwise. It may also reduce learners' anxiety by providing them with safe, less face-threatening spaces in which to practice and experiment with the target language. In addition, technology-mediated TBLT can facilitate interaction and feedback in ways distinct from traditional classroom settings. For more on the affordances of technology in TBLT, see Ziegler (2016).

Under the umbrella of technology-mediated TBLT research, early studies examined the effects of task design (e.g., task difficulty and task type) on the amount and quality of learner-learner interaction without clear results (e.g., Smith, 2003). These studies focused primarily on text-based computer-mediated communication (CMC) using decision-making tasks (e.g., Blake, 2000) and email tasks (e.g., Biesenbach-Lucas, 2006). Eventually, research on CMC evolved to include new ways of communicating such as audio and video (e.g., Yanguas, 2010). CMC tasks are still one of the most active areas of investigation within technology-mediated task-based research (e.g., Alcón-Soler, 2018; Yanguas & Bergin, 2018; Chapter 4 this volume); however, other technologies

have progressively attracted attention. Among these technologies are virtual environments (Canto et al., 2014; Collentine, 2013; Sykes, 2014; Chapter 23 in this volume), computer-simulated tasks (Sydorenko, 2015; Taguchi et al., 2017), placed-based games (Holden & Sykes, 2012; Thorne et al., 2015; see Chapter 22 this volume), and digital sensor technology (Seedhouse, 2017).

### **Critical Issues and Topics**

Given the recency of technology-mediated TBLT compared to other subfields within Second Language Acquisition (SLA), several critical issues and topics rise to the forefront. In this entry, we will focus on the four issues that we consider most pressing: 1) the need for an expanded and commonly-accepted definition of “task,” 2) the standardization of task selection processes, 3) the sequencing of within-task steps, and 4) the dearth of valid assessments for technology-mediated tasks.

#### ***A Definition of Task***

Within the literature on TBLT and CALL, researchers have proposed a wide variety of definitions of “task,” from information-gap activities to authentic communication with other speakers of the second language. Even within TBLT, tasks represent a continuum from more language-focused tasks to more authentic, or real-world, tasks. Some of the most accepted definitions are those by Willis (1996) and Van den Branden (2006). For Willis, a task is a “goal-oriented communicative activity with a specific outcome, where the emphasis is on exchanging meaning, not producing specific language forms” (p. 36), and for Van den Branden (2006), a task is “an activity in which a person engages in order to attain an objective, and which necessitates the use of language” (p. 4). For other popular definitions of task, see Skehan (1998) and Ellis (2003). At a minimum, tasks need to focus on meaning, be goal oriented, and have an outcome apart from merely practicing the language (e.g., a college application essay, a ticket purchase, a letter of introduction, or a hotel reservation).

In this chapter, we propose that technology facilitates engagement in real-world language tasks, providing interactional opportunities that might not be possible without a particular technology. Furthermore, since establishing and maintaining social relationships is often an essential component of being seen as a competent second language speaker and of creating an identity as a user of a second language, we propose that tasks whose outcome involves accomplishing a particular social function should also be considered tasks. Agreeing on an expanded and more encompassing definition of task is a critical issue for academic work in the area of technology-mediated TBLT and for task-based language teaching in general.

#### ***Task Selection***

A second important issue in technology-mediated TBLT is the way we select tasks for inclusion in a curriculum. Ideally, a needs analysis should serve as the point of departure for curricular design at any level (Long, 2015). In this way, language teachers can pinpoint tasks that are relevant to their learner population while addressing widespread stakeholder demands for the incorporation of relevant content in applicable learning modules. Given the political nature of language (Gee, 2005) as well as the economic value attached to knowledge of multiple languages, especially English (McGuire, 1996), investigating the tasks a particular group of learners will need to be able to perform in the second language would imbue that program with a higher degree of credibility. A needs analysis should incorporate multiple sources of information and measures (Long, 2015) in an effort to define a *defensible curriculum* (Brown, 1995). Since administrators, teachers, and students have different, yet complementary roles in language programs, gathering information from various

sources helps to ensure that multiple stakeholder perspectives are represented in the design and selection of appropriate tasks. For a technology-mediated TBLT curriculum, a needs analysis can also help to identify the technology that may mediate a set of modern-day tasks as well as the digital prowess and digital literacy of a particular group of learners (González-Lloret, 2014). Although a few technology-mediated TBLT curriculums exist (e.g., Voxy (<http://voxy.com>), Chinese for all ([http://chineseforall.org/ch\\_2009/](http://chineseforall.org/ch_2009/)), and Eurocatering Language Training ([www.eurocatering.org](http://www.eurocatering.org))), explicit information concerning how to select materials is still needed. Nielson (2014) and Pardo Ballester (2019) are excellent examples of research on how to develop, implement, and assess a technology-mediated curriculum. However, additional data on the effectiveness of such curricula in facilitating language learning could contribute to the foundation of strong curricular models.

### ***Within-Task Sequencing***

After identifying a set of target tasks for students to perform, along with the language, technology, and support needed to accomplish those tasks, technology-mediated tasks need to be sequenced, and complementary pedagogic tasks need to be designed. These *pedagogic tasks* (Long, 2015; Norris, 2009) are didacticized activities that incorporate “language, procedural, and content knowledge” (Norris, 2009, p. 581). Ultimately, the goal of these pedagogic tasks is to facilitate and scaffold student learning, bringing learners to the point at which they can perform the target task successfully without assistance. Various criteria have been used to sequence tasks, including thematic units, frequency of encounter in authentic contexts, task difficulty, and task complexity. In the field of TBLT, a complexity rationale (i.e., a progression from more to less complex tasks) has been the most frequently employed criterion for task sequencing, particularly in reference to the task complexity frameworks set forth in Robinson’s Cognition Hypothesis (2001, 2015) and SSARC model (Robinson, 2010) as well as Skehan’s Limited Attention Capacity model (2015).

A lengthy explanation of task complexity is beyond the scope of this chapter. However, it is important to mention that research on technology-mediated task complexity has primarily applied the above-mentioned frameworks to uncover the characteristics that may render technology-mediated tasks more or less complex than non-technology-mediated tasks as well as the effects that these adjustments in task difficulty may have on learners’ production (Adams & Nik, 2014; Baralt, 2013; Collentine, 2010; Nik et al., 2012). The results of these studies suggest that technology-mediated tasks challenge the generalizability of existing TBLT theories of complexity, which may be due to the unique cognitive processes affecting interaction mediated by technology (Adams & Nik, 2014) as well as differences in opportunities to pay attention to form (Baralt, 2014). As Chong and Reinders (2020) pointed out, learners may also find technology-mediated tasks more difficult because they need to focus on various aspects: the technology, the task, the language, and their interlocutors. Technology, therefore, seems to add another dimension to current understandings of task complexity, highlighting the need to develop a framework that can be applied to tasks mediated by different types of technology.

Since the results of task complexity research in technology-mediated contexts have yet to produce a set of guidelines to help practitioners sequence their tasks, some basic indicators of task complexity can be used. González-Lloret (2016) proposed several criteria to assist teachers and researchers in classifying tasks from simple to more complex. For example, a task engaging students in producing language within an unfamiliar genre or software could be considered more difficult than a task that utilizes a familiar, well-studied genre or platform the students may use in their L1. Likewise, tasks that incorporate large amounts of information, advanced grammatical structures (e.g., the subjunctive or complex clitic formations in Spanish), or multiple steps can increase the level of difficulty of an otherwise straightforward task. Empirical research identifying the specific criteria that contribute to task complexity in technology-mediated TBLT is needed urgently to provide more specific recommendations for practice.

### ***Assessing Technology-Mediated Tasks***

An incredibly important, yet under-researched area of technology-mediated TBLT is the assessment of student learning. Long (2015) explained that task-based language assessment ought to focus primarily on a learner's ability to complete a given task successfully. Such evaluative tasks should also provide continuity between the tasks used during virtual or face-to-face meetings and tasks in which learners hope to engage outside of class (Winke, 2014). Thus, a key for developing valid technology-mediated assessments rests in the inclusion of real-world scenarios in which learners will be expected to use the target language in conjunction with technology. Norris et al. (2002) called for more research on the "development, use and validation of task-based tests" (p. 415), and given the ubiquity of technology in education today, researchers and teachers must continue to answer this appeal in concert with investigations surrounding innovative ways to assess learner performance on technology-mediated tasks (including their digital skills). A recent line of research on task assessment is that of Pallotti (2009), Kuiken and Vedder (2017, 2018, in press), and Révész and colleagues (2016, 2018), which explores the use of *Functional Adequacy* (i.e., the successful completion of a task) as a measure of student task performance. However, to date, the research literature provides few clues as to how communication in various technological contexts should be assessed. We see this topic as an important step for the future of the field, and as such, we address it under Future Directions.

### **Current Contributions and Research**

Research documenting the benefits of TBLT has progressed in parallel fashion to technological advances supporting technology-mediated learning. With the advent of new technologies, many traditional face-to-face tasks have shifted to online environments. For example, instead of calling a phone number to obtain help with a computer problem, we can chat with technology support, and they can access our computer or even fix a problem remotely. Job interviews are now conducted via videoconference, and the world relies on technology for social gatherings more than ever. However, only a few studies have sought to elucidate the benefits and challenges of applying a TBLT curriculum to an online language course (see Chong & Reinders, 2020 for a qualitative meta-analysis of 16 studies that incorporate technology and tasks to varying degrees).

One example of a technology-mediated TBLT course is described in Lai et al. (2011). For this beginning-level, Chinese-as-a-foreign-language university course, the researchers designed a synchronous component to accompany existing asynchronous assignments in the curriculum, such as discussion forums and online exercises. A set of tasks (with pre-tasks and post-tasks) were designed (following Ellis (2003) and Willis' (1996) task cycle) and sequenced according to Ellis' (2003) task complexity grading criteria. Over the course of the semester, data from background surveys, student reflective blogs, observations of recorded sessions, course evaluations, and performance on the final exam were compared to that of a control group that did not engage in TBLT. Ultimately, the qualitative data demonstrated that the teachers and students reacted positively to the technology-mediated TBLT activities and that the experimental group outperformed the control group on the final oral exam. Some of the challenges of incorporating technology and TBLT included designing an online TBLT syllabus, carrying out collaborative tasks, and resolving technological issues (e.g., Internet time lag). In spite of these challenges, Lai et al. (2011) identified a number of advantages of the online TBLT course, such as enabling more individualized instruction, bringing together a diverse student group from various geographical locations, and generating greater opportunities for student participation due to the availability of text- and audio-chat.

A second example of an online technology-mediated TBLT course is presented in Nielson (2014). In this study, the author examined the effectiveness of an intermediate-level, high school



Chinese-as-a-foreign-language course. The researchers and teachers behind the curriculum development used an extensive needs analysis to identify target tasks, which included synchronous role-playing sessions around negotiating for goods and services and asynchronous productive activities, such as inquiring about the price of a group tour via email. Data concerning task participation, student achievement on a series of performance-based assessments, pre- and post-course speaking proficiency, and stakeholder perceptions showed an improvement in learners' speaking abilities and a desire to seek out additional opportunities for language practice in the real world. In terms of the challenges attached to implementing an online TBLT course, Nielson (2014) identified learner attrition and a need for more sensitive assessment instruments to capture small changes in learner performance. The results of these studies illustrate that although technology-mediated TBLT can be an effective methodology, there is still a need for more investigation into the development of technology-mediated TBLT courses and the specific ways in which such courses promote second language development.

### ***Interactional Tools***

Within research and practice that has capitalized on the benefits of technology-mediated tasks, researchers and language teachers have experimented with a plethora of interactional tools and with a large variety of task operationalizations. Several early studies that included tasks concentrated on text-based computer-mediated communication (CMC) and its role in promoting language learning (see Lai and Li (2011) for an early review); however, the technological tools researched today have grown in line with the increased capabilities of the Internet. Empirical studies that incorporate text-based CMC tasks (e.g., email, chat, and text messages) are still abundant (e.g., Barón & Ortega, 2018; Monteiro, 2014; Thomas 2013), but there are increasingly more studies based on audio or video tasks (e.g., Winke, 2014; Yanguas, 2012), with some researchers focusing on telecollaborative projects carried out by geographically distant participants engaged in a variety of tasks (e.g., Kurek & Müller-Hartmann, 2017; Chapter 18 in this volume).

### ***Online Creative Spaces***

Along with the adaptation of several paper-based genres to the online environment, the pervasiveness of the Internet has allowed for the creation of new genres within online creative spaces (Vandergriff, 2016). Blogs, fandoms, and affinity spaces (Gee, 2004) are a few of the emerging genres that have been harnessed in the formulation of technology-mediated writing tasks. Such online spaces provide forums for the multimodal exchange of ideas and for the provision of peer feedback. Learner-generated blogs, for example, provide an avenue for expanding the audience of students' written work (Lee, 2011). On the other hand, writing communities and fandoms (e.g., fanfiction.net) connect individuals who share an interest in a particular fictional series, music group, or pop icon, among many potential topics. Though not intended for educational purposes, these spaces have been appropriated for language practice through genre-based writing and literacy development (Byrnes, 2014; Hindley & Clughen, 2018; Sauro, 2017; Sauro et al., 2020).

### ***Gaming and Virtual Worlds***

Games, simulations, and virtual environments have increased in popularity as research topics due to the strong connection between gaming and the SLA principles of contextualized language learning and sheltered practice (Reinhardt, 2019). Virtual realities share many characteristics with games, although the tasks in virtual environments may be less defined by the technology and more by the participants, and not always constructed on the basis of gaming principles. Games fit seamlessly

within TBLT's philosophy of Experiential Learning, as they have the potential to heighten learners' motivation, level of participation, interactivity, and engagement (Reinders, 2012). Most games are goal-oriented, and they allow players to use multiple resources, including audio, video, and text, to achieve specific goals. These spaces offer on-task feedback and can adjust to the learner's performance level (Franciosi, 2011), and as Reinders and Wattana (2012, 2015) show they can increase students' willingness to use the L2. The games that best fit within TBLT are composed of quest-like tasks sequenced according to different gaming principles (i.e., organizational, contextual, tactical, and algorithmic principles), which require interaction with the game and with other players. Learner self-determination and engagement as well as their game behaviors (e.g., number of restarts) are essential for language development (Collentine, 2011; Sykes, 2014). Quest participants shape the task through their actions and decisions, similar to the way in which interlocutors shape a conversation. See Cornillie et al. (2012) for an overview of gaming for SLA.

### Main Research Methods

The research methods employed in studying variables related to technology-mediated TBLT are as varied as the foci of the analyses. Given the rapid evolution of technology and the little we know about the ways in which learners interact with new technologies and new tasks, several studies have focused on describing the manner in which tasks and technology can be integrated in a language course and the ways students engage with those tasks. Other studies are more experimental in nature. We present here a few illustrative examples of such diversity.

Interestingly, there are few experimental studies (i.e., conducted in a laboratory setting or outside of regular instruction) on technology-mediated TBLT, which could be due to the integrative nature of the discipline as well as the fact that such studies would not be ecologically valid for a pedagogical approach. Most researchers have used intact classes, with one class serving as a control group and some have applied a counterbalanced design to multiple classes, analyzing learners' production according to commonly used measures of linguistic complexity such as lexical complexity (e.g., lexical density, lexical range, lexical diversity), syntactic complexity (e.g., subordination, frequency and diversity of forms); fluency (e.g., pauses, speed, repairs); and accuracy (e.g., number of errors, overuse or underuse of specific forms).

On the other hand, qualitative analyses have employed a variety of methods, such as ethnographic observation, participant reflection, narratives, and interviews. In some cases, these data sources have been examined through discourse or conversation analysis (e.g., Strambi & Tudini, 2020). Most recent studies use a variety of quantitative and qualitative methods, including pre and post-tests, questionnaires, student written production (e.g., Abrams, 2016), and records of learner-learner interactions (e.g., Van der Zwaard & Bannink, 2016). As with most SLA and CALL research, qualitative studies tend to cover a few months, usually the equivalent of one instructional semester or year (e.g., Kim & Brown, 2014); however, some research extends over a longer period of time; see Piirane-Marsh and Tainio (2014) for a two-year study of teenagers playing *Final Fantasy X*. The study demonstrates how only through longitudinal research can we see development of students' second language interactional skills in multilingual gaming tasks.

Since technology-mediated TBLT is quite a new area of research, it is in dire need of more studies employing all types of research methods, so we can start aggregating results through meta-analyses and research syntheses, thereby providing "a more trustworthy account of what is actually going on" (Mackey, 2020, p. 107). As with any other area of SLA, the type of research methodology must be driven by the research questions; however, we believe that the field would benefit from mixed-methods studies (i.e., a strategic combination of qualitative and quantitative methods that produce complementary strengths and non-overlapping weaknesses), rather than studies that employ multiple methods or multi-methods (i.e., qualitative and quantitative methods used simultaneously or sequentially). See Brown (2014) for a discussion of the differences between mixed



and multi-methods research. In addition, research that best utilizes quantitative and qualitative methods over longer trajectories would allow us to identify the specific impacts of the technology or the task(s) on language learning and L2 interactional practices. Finally, we need more research that takes full advantage of various technologies. New research tools already employed in SLA, such as eye-tracking and screen-recording software, can help capture data that is otherwise not available to the researcher (Michel & Smith, 2017; Smith, 2008). Furthermore, the back-end of many applications can provide extremely rich data (i.e., Big Data), including input logs, and meta-information on participants' language production, engagement, and behavior (see Chapter 7 in this volume).

### Recommendations for Practice

Recommendations surrounding the implementation of technology-mediated TBLT must first take into account the local context. As highlighted by the COVID-19 pandemic and the push to online learning environments, the availability of appropriate technology, the capacity to maintain a high-speed Internet connection, and the quality of technological support all play a role in the delineation of a cohesive, technology-mediated TBLT curriculum. In addition, the digital literacy of teachers and learners must be at the forefront of curriculum design, not as a means to limit curricular goals, but rather to plan for suitable interventions and support. Several guides exist for integrating technology and TBLT (Baralt & Morcillo Gómez, 2017; González-Lloret, 2016), each offering concrete suggestions for conducting a needs analysis and for identifying tasks sensitive to the local context. In our experience, to implement new methodologies and pedagogical changes, teachers and administrators need to understand them and to participate actively in the process. Therefore, program-wide training and support ought to accompany the adoption of a technology-mediated TBLT program. In addition, teachers need to agree on a definition of task before developing materials and assessments.

Without negating the results of program- or classroom-specific needs analyses, one entry point for technology-mediated tasks is to incorporate tasks that have already been normalized in the learners' first language. For example, tasks such as writing restaurant reviews in Yelp, giving directions with the aid of Google Maps, and exchanging TikTok videos, could be integrated gradually into pre-existing curricula. To support the successful completion of such tasks, pedagogic tasks can be developed, keeping in mind within-task sequencing principles and developing assessments to gauge student performance over time. Video-based media taken from authentic interviews or news programs could be uploaded to online platforms or used effectively in the classroom as source material for pedagogic tasks. Finally, both teacher and learner videos as well as synchronous online meeting platforms such as Google Meet, Microsoft Teams, or Zoom can serve as an alternative to face-to-face conversations and may provide a mechanism for participating in listening and speaking tasks, developing digital literacy skills, and connecting learners to other speakers of the language. At the same time, it is important to acknowledge that not every activity in the language classroom, whether physical or virtual, needs to be mediated by technology. For example, scaffolding for a target task could include a variety of pedagogic *language* tasks, including input-based work (e.g., reading several reviews), vocabulary practice, and genre analysis (e.g., identifying the relevant moves in a restaurant review), each of which could be accomplished with or without technology. Pedagogic tasks should also include *technology* tasks (e.g., finding a restaurant in a certain area requires navigating websites and understanding online maps, selecting a type of restaurant, uploading pictures, giving stars, and answering comments) to help students perform the target task effectively while developing their digital skills.

Our final recommendation for practice is to make sure that the technology and the tasks are also part of the assessment process. Unfortunately, we have seen too many cases of programs that incorporated excellent technology-mediated tasks only to test students afterward through traditional

fill-in-the-blanks, matching, and verb conjugation exams. Often, programs are constrained by administrative decisions concerning the forms of assessment that can be considered as valid. However, assessment should be congruent with the teaching methodology employed, and within TBLT, assessment ought to be performance-based and conducted mainly as formative feedback to help learners improve (Norris, 2009). Performance-based assessment evaluates “how students use the language, what they can accomplish, and their ability to respond to real-life language tasks rather than their knowledge *about* the language” (González-Lloret, 2016, p. 55, italics in original). One of the challenges of performance-based assessment is the development of criteria and rating scales that describe actual student performance levels. Although accuracy and language complexity are essential for evaluating an advanced speaker, these constructs may not be as important for beginning-level learners. In some contexts, it may be enough to know whether or not the student is able to perform a particular task, whereas in other environments, it may be essential to assess the quality and appropriateness of the language used. In this line, Kuiken and Vedder’s (2017, 2018) research on Functional Adequacy as a construct for assessing task performance has generated multiple studies seeking to validate their proposed rating scale in different contexts, modes of production, languages, and proficiency levels (Kuiken & Vedder, in press). At the same time, assessment research that incorporates technology and that assesses tasks according to criteria beyond just language complexity, accuracy, and fluency is crucial for the field of TBLT. For additional examples of detailed grading criteria for technology-mediated performance-based tests, see González-Lloret (2016), Nielson (2014), and Winke (2014).

### Future Directions

In line with our recommendation to include performance-based assessments that also address learners’ digital capabilities, we need research that pinpoints the ways in which such evaluation can be done, that validates relevant instruments, and that provides solid models for the field. For example, should learners receive full credit simply for contributing original work to a wiki or a blog as in Sun and Chang (2012), or should contributions be judged according to quality, as in Freeman and Brett (2012)? Unfortunately, very little research exists in this area, and as a result, we would place technology-mediated task-based assessment at the forefront of future research endeavors.

In a field where technology is an intrinsic component, it is almost impossible to predict the innovations that will be incorporated in future second language learning environments. Virtual reality and digital sensor technologies that allow our surroundings to respond to our behaviors have great potential for TBLT (see Seedhouse’s 2017 example of a digital smart kitchen for the study of French within a TBLT framework). An area in which we see increased implementation and investigation is mobile-based tasks. As smart phones become more sophisticated microcomputers and as their availability becomes more widespread, especially in emerging economies (Silver et al., 2019), we envision TBLT incorporating these devices inside and outside of the classroom (e.g., Holden & Sykes, 2012). As a consequence, we will need research to develop and to test what tasks can best be performed through this platform as well as the tasks’ effectiveness for L2 learning. For examples of potential future research topics within this line of inquiry see Smith and González-Lloret (2020).

Another area poised to grow long after students’ post-pandemic return to the classroom is online teaching (see Chapter 17 in this volume). During the pandemic, language programs that had already incorporated technology-mediated tasks experienced an easier transition to fully online programs, whereas those programs that relied solely on in-person instruction had to adapt rapidly. Many of these programs continue to struggle to establish a sound curriculum, to develop appropriate materials, and to assess students online. We anticipate that many institutions will want to keep and to improve their current online practices. A technology-mediated TBLT curriculum is an excellent methodology for that endeavor, and we would encourage teachers, administrators, and material developers to explore this option.

Finally, the transition to Web 3.0 (Markoff, 2006), which includes more intelligent, interconnected devices, open websites, and machines that can understand human language (i.e., Google Duplex, automated phone systems, Siri and Alexa), opens an entire new line of research. We recognize that by the time this chapter is published, there may be new interactional tools and online environments, and students may have moved from Instagram, Snapchat, and TikTok to new applications; however, new tools will also open new avenues for research and practice.

### Further Reading

- González-Lloret, M. (2016). *A practical guide to integrating technology into task-based language teaching*. Georgetown University.  
A guide for teachers who want to integrate tasks and technology into their language classrooms, including how to conduct a needs analysis, develop tasks and prepare for assessment. The guide also includes reflective questions and activities.
- González-Lloret, M., & Ortega, L. (Eds.). (2014). *Technology-mediated TBLT: Researching technology and tasks*. John Benjamins.  
This edited volume presents multiple examples of the development and integration of tasks and technologies in a variety of contexts and target languages within different theories of language learning. Some of the technologies presented include blogs, immersive environments, virtual worlds, fandoms, text chat, and online environments.
- Thomas, M., & Reinders, H. (Eds.). (2010). *Task-based language learning and teaching with technology*. Continuum.  
An earlier edited volume that includes chapters on the design, development, and application of technology-mediated tasks according to a varied understanding of tasks and using technologies for telecollaboration, intelligent CALL, text chat, and VLEs.
- Van den Branden, K., Bygate, M., & Norris, J. (Eds.). (2009). *Task-based language teaching: A reader* (Vol. 1). John Benjamins.  
This is an essential reading for anyone interested in understanding what TBLT is and how it can be applied in different contexts.

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