Article

Engagement, Technology, and Language Tasks: Optimizing Student Learning

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Abstract

The purpose of this paper is to share options for language instruction and present opportunities for language learning based on what the literature says about what makes an effective learning task. The paper focuses specifically on uses of technology to support learner engagement. The tasks and technologies presented are not intended to be prescriptive but rather to serve as models and idea generators for task design in a variety of English learning contexts. To meet the purpose, this paper presents a brief overview of conditions for language learning, and it then explains principles of task engagement. Applications and examples of technology uses that can support task engagement are included.

1 Background

Although brain research is gaining momentum and continues to add to our knowledge of how languages are learned, there is no accepted explanation of the language learning process to date; however, not understanding the exact cognitive process does not mean that the literature has nothing to say about how teachers might approach language instruction. As long ago as 1989, Spolsky proposed evidence-based conditions for language learning that pointed out the roles that learner ability, background knowledge, motivation, and opportunity play in language outcomes. Among these conditions for instructed language learning, opportunity is the aspect that teachers have the most influence over because they design and implement classroom learning tasks (Crabbe, 2003). At their most basic, language learning opportunities should include comprehensible input and output, noticing, social interaction, and the right kind of feedback provided at the right moment (see, for example, Ellis, 2019; Krashen, 1989). However, tasks that include these elements may still be insufficient to promote learning unless students are willing to take and use the opportunities that they are provided. Much recent research addresses the kinds of opportunities that can lead to effective language learning, and one focus is the role of task engagement. Egbert, et al (2019) synthesized the research around language task engagement in the model presented in Figure 1.
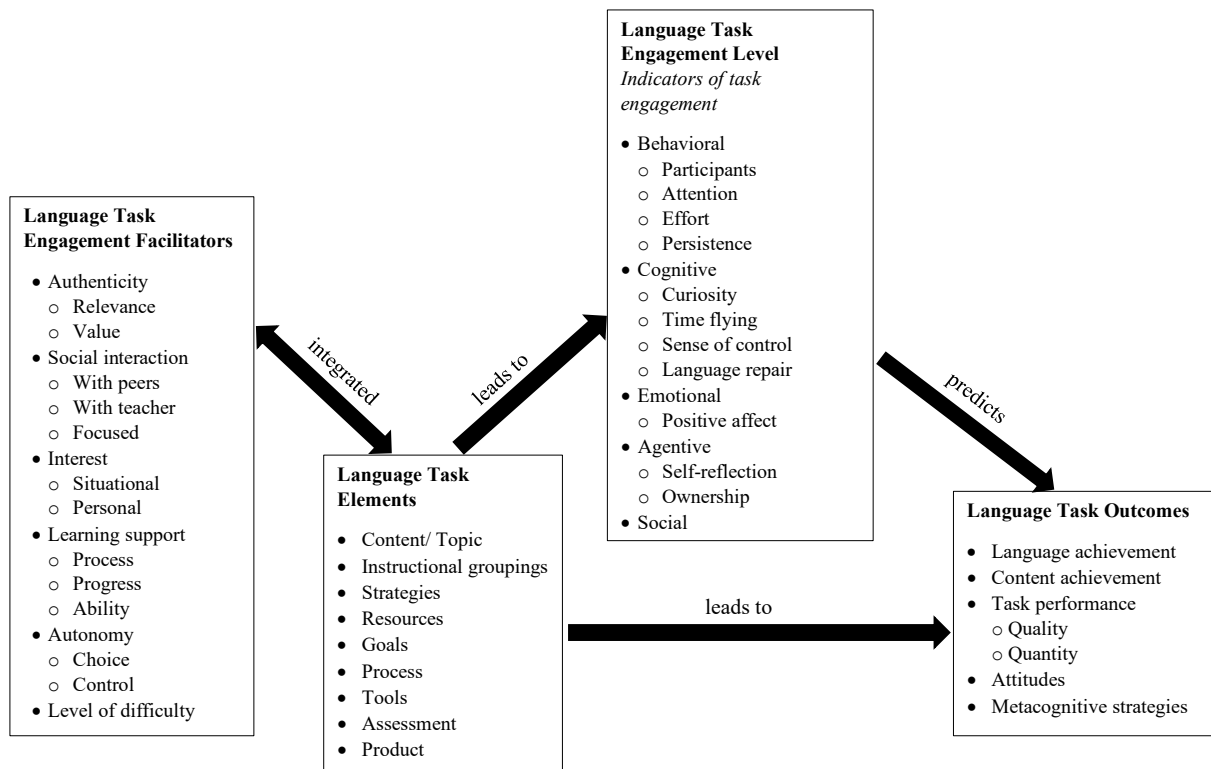
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Language Task Engagement Facilitators

- Authenticity
  - Relevance
  - Value
- Social interaction
  - With peers
  - With teacher
  - Focused
- Interest
  - Situational
  - Personal
- Learning support
  - Process
  - Progress
  - Ability
- Autonomy
  - Choice
  - Control
- Level of difficulty

integrated

Language Task Elements

- Content/ Topic
- Instructional groupings
- Strategies
- Resources
- Goals
- Process
- Tools
- Assessment
- Product

leads to

Language Task Engagement Level
Indicators of task engagement

- Behavioral
  - Participants
  - Attention
  - Effort
  - Persistence
- Cognitive
  - Curiosity
  - Time flying
  - Sense of control
  - Language repair
- Emotional
  - Positive affect
- Agentive
  - Self-reflection
  - Ownership
- Social

predicts

leads to

Language Task Outcomes

- Language achievement
- Content achievement
- Task performance
  - Quality
  - Quantity
- Attitudes
- Metacognitive strategies

Figure 1. Model of language task engagement from Egbert et al. (2019)

The model presents both the components of and process for task engagement, proposing that when task engagement facilitators are integrated into one or more task elements, learners should show indications of their level of engagement. As task engagement becomes higher, so should achievement, not only in language but also in motivation and other task-related outcomes. Egbert et al admit that there is yet little research on how much of each facilitator in how many task elements leads to which indicators and outcomes; in spite of this lack, the point that task engagement leads to achievement is not in dispute (see, for example, Christenson, Reschly, & Wylie, 2012). Therefore, exploring the engagement facilitators and some of the ways they can be integrated into language tasks can help language teachers provide opportunities that their students are more likely to take and that can optimize their learning.

1.1 Definition of task

First, the notion of "task" should be explained. A language task can be seen as an iterative process that includes a specific goal or objective, a process for meeting the objective, and a clear outcome. The assumption is, of course, that language tasks include the factors for language learning (such as comprehensible input) mentioned previously. A task can have a language or disciplinary focus or both, and it can include instructional groupings such as the whole class, small groups or dyads, or individuals. Tools can range from pencils and books to virtual reality headsets, while products can include anything from answers on a quiz to a video presentation posted to social media for comments. With the endless number of ways that language tasks can be designed, task engagement facilitators can help teachers focus on creating opportunities that lead to learner engagement and achievement.

1.2 Engagement facilitators

The literature and the model in Figure 1 suggest that there are six main facilitators of task engagement. The first, authenticity, can be defined as students' perceptions that the task is: helping to meet their

goals (i.e., life, language, or other); connected to their real lives (past, present, or future); able to help them become more self-efficacious. In order to integrate this facilitator into tasks, language teachers should have an understanding of what their students consider authentic; this means that they should know something about their students. Therefore, a prerequisite for creating tasks that students will find authentic is conducting needs, interest, and/or academic assessments (for more information, see Egbert & Shahrokni, 2018).

As noted previously, the second facilitator, social interaction, is also a central principle of language learning. The "social" aspect of interaction means that the learner interacts with a knowledgeable interlocutor who can provide creative, focused feedback; this means that, to date, social interaction in language classrooms cannot occur with a computer (although social interaction can occur around and through many types of technology). Social interaction can include a focus on collaboration or on competition (or both) based on what works in the learning context. Students preferences for who they want to interact with and what topics they want to focus on can be based on culture and educational background; these should be taken into consideration when creating tasks with social interaction.

The third facilitator in the model is learning support. Students are more likely to be engaged in a task when they perceive that they have the support that they need, including that resources are available, their goals are clear and reachable, and that they have the time and feedback that they need to succeed in the task. This support is typically teacher-based, but peers and expert others can also provide students with learning support.

Another facilitator, mentioned often in the engagement literature, is student interest. Based on their responses to an interest inventory and other information that the teacher can collect, learner interests can be included across the task elements. For example, some students may be more interested in making a poster than writing a paragraph as a product, while other students want to study local politics rather than events in a target language country. Some students will be interested in tasks that are not specifically authentic but that are novel, while others will find any game-type activity interesting. Teachers can integrate students' interests into almost any activity or vary tasks so that different students' interests can be addressed in different tasks.

Egbert et al (2019) also note learner perceptions of autonomy as a task engagement facilitator. Autonomy can be defined broadly as ownership or agency and more specifically as the perception that the learner has control over the aspects of learning that he/she needs/wants to. Depending on the age, background, culture, and other personal variables of learners, tasks can include a specific number of choices and varying amounts of control. For example, young learners may have the choice of which fairytale to read and share, while older learners might be offered the opportunity to help design a task around a certain discrete language item. Teachers, with their knowledge of their learners, can decide how this facilitator can be best integrated to support student learning.

Finally, the level of difficulty or challenge in a task is seen as an essential focus for language learners. Based on the work of Csikszentmihályi (1990, 2014), a challenge and skills balance helps to engage learners because they perceive that the task is doable yet requires some effort. Many students like to be pushed and made to think and would rather perceive that a lesson takes work than that it is too simple. If students perceive insufficient challenge they may be bored, while too much challenge may increase a lack of confidence or a feeling of frustration. Clearly the optimal level of challenge for language students in one class will differ across groups and/or individuals, but teachers can provide learners with varied choices and levels of support to help make sure that all learners are working at their optimal level of challenge.

In engaging tasks, students are typically active speakers and producers who use language in many ways to solve problems. Engaging language tasks are also often those in which higher-order thinking skills are supported, whether this means learners use a concordancer to describe the uses of a particular

word or they write an editorial for a target language forum about a pressing local issue. In engaging tasks, learners can answer essential questions like "why?" and "how?" while also acquiring language and content. However, integrating all of the engagement facilitators into all of the language task elements appropriately for each student in each language class is probably, for a wide variety of reasons, an insurmountable challenge for most teachers. Rather than feeling frustrated at the challenge, however, teachers can choose the facilitators that seem to make the most difference to their students and integrate them into whichever task elements make the most sense in their context. In creating such optimally engaging tasks, technology use can be a major support.

2 Technology Use and Task Facilitators

Technology use can support task engagement in a variety of ways, from providing teacher resources and handouts (see, for example, Egbert, 2017), complete tasks (see, for example WebQuests at webquest. org), quizzes, and other items that can be parts of the task. Some of the roles that technology can play in language learning are: provide opportunities for comprehensible, multimodal, multi-dialect input and output (i.e., text, sound, voice, graphics, video, data); support group work and social interaction and provide a record of that interaction (i.e., *WeChat, LinkedIn*, and other social media applications); help learners save face and gain confidence by allowing them to practice unlimitedly; provide teachers with materials, opportunities for development, and ways to engage themselves in language teaching (i.e., teacher professional learning communities, professional development videos, sample lessons).

Every task element and facilitator can be addressed with technology use, which can also make it easier to differentiate instruction so that the appropriate level of a facilitator is integrated. The key is for teachers to start small by choosing one facilitator or one task element to develop. Below are some examples of technology uses that may address several facilitators and/ or task elements but have been chosen to exemplify one or two.

2.1 Facilitating authenticity

Sometimes what students find interesting will also seem authentic to them. For example, if a learner is interested in music (but the task goal is present progressive), teachers can search azlyrics.com for songs by artists that students know and love that also contain the target structure. Learners can also be asked to find such lyrics themselves, create a rule for the target structure, and present it to the class (incorporating choice, appropriate challenge, and social interaction, too).

Likewise, rather than using a textbook reading that the teacher knows does not present an authentic topic or experience for students, the latest information from Wikipedia.org or an online news outlet can substitute while using the same types of comprehension exercises. For students who want to work abroad, incorporating the business English exercises on the British Council's *Learn English* website (learnenglish.britishcouncil.org) might spur their perceptions of authenticity.

2.2 Facilitating social interaction

Language learners are already using social media apps such as *Weibo, WeChat,* and *WhatsApp*. Teachers can use these same apps (or avoid coopting what's "cool") by using a similar app made for education. Learners can use such an app to blog, interact, explain, and perform other mini-tasks in English. This both brings students' real lives into class (authenticity) and class to other parts of their real lives. These same apps can be used to interact with fluent target language speakers, topic experts, and students in other places.

2.3 Facilitating interest

Young adults around the world are interested in sports, fashion, music, exercise, and /or politics. Gossip blogs and online resources like the *China Daily* Culture section can be great sources of readings and information to address these interests, spur discussion, and promote noticing in language classrooms. If learners perceive that grammar drills are boring, having them based in content that is interesting to learners could make learners more likely to perceive them as engaging. For example, the article on Chinese Marvel superheroes in the *China Daily* (Xu, 2019) fits with the current interest in Marvel films and could be used as a context for all kinds of interesting language tasks.

In addition, a *Quora* (www.quora.com) forum, "What kinds of hobbies do Chinese teenagers enjoy?" might be really useful and interesting in a task focused on comparative language and promote social interaction as students discuss the veracity of the forum content. Many students also play video games in their spare time, often in English. It seems like a waste to limit this type of interesting language learning to outside of school when teachers could ask students to keep vocabulary lists or dictionaries, describe what they do in the game, or even use content-free game frameworks such as *MinecraftEDU* (see education.minecraft.net for more information).

2.4 Facilitating learning support

Language students often complain that they do not receive enough useful, understandable feedback. Using the "comment" or "notes" function in a word processing program such as *OpenOffice* (www.openoffice.com) can make providing detailed feedback, whether in written or oral form, quick and thorough. Doing so also allows teachers to model the target language or send learners to resources for their individual needs. Further, because the learner's original and revised documents can be compared easily, teachers can see the changes that learners made and what still needs to be addressed.

2.5 Facilitating autonomy

While some language learners will require more structure, others will engage more in a task that allows for a level of autonomy. *TEDxESL* (tedxesl.com) provides teachers with tasks and lessons around current issues of interest, and teachers can allow learners to choose the types of grammar, vocabulary, and other language points to emphasize. Teacher or learners can also choose the level of reading, the mode (video for listening, transcript for reading, or both), and whether fluency or proficiency is the focus. Allowing learners to comment on the web site about what they read and hear also facilitates social interaction.

2.6 Facilitating appropriate difficulty

No classroom has all learners at the same level on any one skill, and not all learners learn most effectively in the same way regardless of cultural and educational background. To create tasks that present students with appropriate challenge and ways to learn, technologies like *Newsela* (www.newsela.com) can be used. *Newsela* is a news platform that provides information from around the world and presents this same information at five different reading levels. It also allows teachers to make text sets for groups of students to read and do the exercises; in other words, students can be studying towards the same goal but with different topics and different reading levels. That way students are not bored or set up to fail by being assigned texts that are above or below their skill level.

Sites like *a4esl.org* also help teachers to differentiate the challenge of tasks by providing exercises on the same grammar point or vocabulary at different levels. It is more likely to have all students engage, rather than just those to whom the regular texts are aimed, when using technologies that allow students to work at their own levels.

2.7 Summary

There are many more ways that technology can be used to support the task engagement facilitators in any classroom. Teachers are encouraged to learn about their students and local accessible technologies to help them integrate the facilitators in ways that are most useful in their contexts.

3 Applying the Facilitators

Thinking about tasks elements and facilitators and technology use may seem like a lot to ask teachers, but it is not that difficult to start with one engaging technology-enhanced task. Possible steps to follow include task development, implementation, and assessment; these steps are outlined briefly in Table 1.

Table 1.
Task Creation Steps

Step 1. Develop a task

1. Collect and/or review background information on students.
   - Search online for "student needs assessments" or "student interest inventory."
2. Review language and content objectives.
   - Ask "What must every student know and be able to do by the end of this task?"
   - Consider how task engagement principles could be used to develop a task that meets the objectives.
3. List choices that you can give students.
   - Could they choose their own teammates? Topic? Resources? Product? Assessment?
4. Develop clear instructions, handouts, and models.

Step 2. Implement the task

   - Act as facilitator.
   - Intervene when students fall behind.
   - Be flexible and allow students to change their minds about their choices.

Step 3. Assess the task

   - Assess learner competency before, during, and after the task.
   - Use a variety of assessments, some of which students may choose or help to create.
   - Decide how to help those who have fallen behind or are not performing to expectations. Can other choices be given?
   - Assess the task itself. What went well, and what could be done better next time?

4 The Facilitators in Use

Below are three examples of tasks that focus on speaking and other skills and are supported by technology use. These examples assume that students know how or will be taught how to use the technologies and that the tasks will be modelled for students as needed. Each example is followed by a list of the task engagement facilitators that it includes.

Example 1: *Speaking of Grammar*
Focus Questions:
   - What do pictures really tell us?
   - What hidden ideas or meanings can be found in still and moving pictures?

- How does the meaning of a picture change depending on who is viewing it?

Sample Objectives:

Learners will be able to:

- State their opinions.
- Demonstrate fluency during narration.
- Elaborate and use language creatively.

Process:

In *VoiceThread* (voicethread.com), the teacher or a student can post a video, graphic, or photo that has some connection to students' lives (e.g., traffic around their school, an advertisement for something they want, a graphic with climate changes in their part of the country). The person who posts should add an essential question to start the discussion, making sure that the response requires the target structure. Students can respond in a specific form (e.g., oral recording, a video plus text) or be given the choice of form. Students could also be assigned a "side" to take and have a debate or create group responses. A follow-up discussion can include the focus questions, with an emphasis on both the content and the pronunciation/ grammar of the responses as relevant to students.

Engagement principles in this task:

- Authenticity: Social and academic language; focus on fluency and ideas that students talk about outside of class; focus on their opinions and experiences.
- Social interaction: Teamwork; potential for synchronous and asynchronous discussion.
- Interest: Topics and products that students choose or are chosen based on student interests.
- Learning support: Peer, teacher, and possibly "public" feedback.
- Autonomy: A lot of student choice can be built in, from the topic of discussion to how they choose to respond. At the same time, structure and modeling are provided in the app interface and examples from the teacher and other students.
- Difficulty: Students can erase and re-record, practicing until "perfect"; the technology is free and simple to use once modeled.

Example 2: *Shanghai Environmental Task Force*

Focus Questions:

- What are Shanghai's main environmental problems and what are the causes of these issues?
- How is Shanghai tackling such problems, both politically and as a society?
- Who are the primary stakeholders in solving Shanghai's current environmental challenges? What is being done in other similar contexts?
- What are the barriers to implementing effective environmental policy?
- What can we do?

Sample Objectives:

Learners will be able to:

- Use modal verbs correctly during an oral presentation.
- Use correct pronunciation to explain a topic and solution.
- Provide one or more well-evidenced solutions to a real problem.
- Summarize evidence.

Process:

Learners can be assigned or choose groups and do online research (using an available search engine or sites that the teacher has prechosen) to present an argument before a "city council" meeting. If they do not live in the area, they can interact with students and experts from Shanghai via email or other communications technologies. They can prepare individual or group posters using an app such as *Canva*

(www.canva.com) or *PosterMyWall* (www.postermywall.com) about all or part of the case, or they can create a video using their cell phones and a video app to summarize and dramatize the issues. The video(s) can then be posted for comments from peers and others on any social media platform.

Engagement principles:

- Authenticity: Uses a real problem in students' context; uses language to interact with fluent speakers.
- Social interaction: Collaborative teams; access to English-speaking experts.
- Interest: Uses technology to create a product; addresses an environmental/local issue.
- Learning support: Teachers can include a vocabulary pre-quiz on words and forms students need to know and use; require mandatory "check-in" points; provide on-going peer and expert feedback and a clear rubric.
- Autonomy: Task can be self-paced with a final deadline; learners can have a choice of final product to be presented (e.g., video, poster, council presentation).
- Difficulty: The teacher can include direct instruction as needed, a list of web sites that address the issues at different levels, English language resource lists, contacts for the Ministry, local, and international English-speaking experts, or environmental groups; use a learning management system such as Canvas (instructure.canvas.com) to share progress; create field trips to take videos and gather data if possible.

Example 3: *Speak Up*

Focus Questions:

- What do you know about pop culture (or grammar or government or…)?

Sample Objectives:

Learners will be able to:

- Form questions accurately.
- Use correct pronunciation.
- Speak extemporaneously/ spontaneously.
- Produce comprehensible output.

Process:

The class watches an example of the *Jeopardy* television show in English (some shows are available at jeopardy.com, others can be found on video sites around the Web). Rather than answer a question with a statement, *Jeopardy* requires users to answer a statement by creating an accurate question. Using the free *Jeopardy* app (jeopardylabs.com/), students can build their own game, use premade content from the site, or use the teacher's version to study or practice any content or language point. Students can try one game each week during the semester, responding to the statements orally and arguing their point as needed. They can also work in groups to play others' games during a class period.

Engagement principles:

- Authenticity: Can be used in and outside of class, learners can choose their own topics.
- Social interaction: Work together to create and respond.
- Interest: As long as it is not overused, students may be interested in making and playing games both in and outside of class, using them as study aids or even as a pretest or an introduction to an upcoming topic.
- Learning support: Teacher can check on students, evaluate their statements and possible answers, provide models of how to create and respond, provide handouts and other support.
- Difficulty: *Jeopardy* has built-in levels of difficulty.
- Autonomy: Learners organize the game in the way they think best, choose to provide responses or not, decide how/if they work with others, and so on.

5 Conclusion

Teachers can enhance what they already do by focusing on meeting curricular goals in ways that consider student needs, wants, and abilities, integrating the engagement facilitators as relevant/necessary, and using technologies to make language tasks more engaging. Because engaging learners in language tasks can contribute to their success both in class and in their lives, the need for reflection, practice, and additional research on language task engagement is essential.

Note

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