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June 9, 2018

There's Extra Time to Learn a Language

SOCIETY FOR SCIENCE & THE PUBLIC

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There's Extra Time to Learn a Language

About the Issue

Science News **article: "**There's extra time to learn a language"

Readability score: 14.2

Science News for Students **article(s):** "Your window for learning languages may still be open"

Readability score: 7.7

The article "There's extra time to learn a language" describes a new study in which people who started learning English as a second language by age 10 to 12 were able to gain high levels of grammar knowledge. Students can focus on information reported in the article, follow connections to earlier articles about languages and language learning, and pursue cross-curricular connections in biology, and engineering and experimental design. In a related activity, students can compare the similarities and differences between languages to understand how those variations may influence language learning.

The Flex Time Educator Guide is another great resource for teaching about the neuroscience of learning. The guide explores other cross-curricular connections such as the biology of neurons and how magnetic resonance imaging (MRI) works. In a related activity, students can study prepared microscope slides of a variety of neurons and create models of interconnected neurons to explore how these cells learn.

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What's in this Guide?

Article-based observation: Questions focus on a new study of how long people have been learning English and how well they learned its rules, and what those findings may suggest for language learning in general.

Quest through the archives: Use this short section to explore and compare other articles about languages and language learning as reported by *Science News* and *Science News for Students*.

Cross-curricular discussion:

> **Biological Sciences** questions deal with language families, neural plasticity and mnemonics.
>
> **Engineering and Experimental Design** questions consider software for learning languages, evaluating language skills and translating languages, and explore the difficulties of creating survey studies.

Activity: Tongue Tied

> **Purpose:** To understand how the similarities and differences between languages may influence language learning.
>
> **Procedural overview:** Students can compare general features of the English language with features of other languages. Students can then think about how variations between the languages might influence language learning for native English speakers and speakers whose first language is not English.
>
> **Approximate class time:** One class period.

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Standards

Next Generation Science	Common Core ELA
Biological Evolution: Unity and Diversity: HS-LS4-1	Reading Informational Text (RI): 1, 2, 4, 5, 7
From Molecules to Organisms: Structures and Processes: HS-LS1-2	Writing (W): 1, 2, 3, 4, 6, 7, 8, 9
Engineering Design: HS-ETS1-1, HS-ETS1-2, HS-ETS1-3	Speaking and Listening (SL): 1, 2, 4, 5, 6
	Reading for Literacy in Science and Technical Subjects (RST): 1, 2, 3, 4, 5, 7, 8, 9
	Writing Literacy in History/Social Studies and Science and Technical Subjects (WHST): 1, 2, 4, 7, 8, 9

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Article-Based Observation: Q&A

These questions are based on the article "There's extra time to learn a language."

1. What was one new result about language learning?

Possible student response: People who started learning English in an English-speaking country by age 10 to 12 ultimately learned English, as well as people who had learned English and another language from birth. People who began learning English after age 10 to 12 were not as fluent.

2. What had previous research suggested?

Possible student response: The ability to learn grammar peaks in early childhood, up to around age 5. If that were true, people who begin learning a new language after this peak learning age would ultimately not be able to achieve the same level of fluency as people who began learning the new language before age 5.

3. Until what age does peak language learning ability last, according to the researchers?

Possible student response: Although most language learning happened in the first 10 to 20 years of life, modest amounts of grammar learning could still happen up to age 30 or so.

4. What methods did the researchers use to generate data?

Possible student response: The researchers created a 132-item Facebook quiz about English grammar that used a person's responses to guess his or her native language and dialect of English. After completing the quiz, respondents filled out a questionnaire asking for information such as where they had lived, languages they had spoken from birth, the age at which they began learning English and the number of years they had lived in an English-speaking country. The researchers received 669,498 answers from native and nonnative English speakers, and used statistical calculations to estimate at what ages people with varying amount of experience speaking English reached peak grammar ability.

5. Based on the survey results stated in the article (and without reviewing the primary research article), what populations do you think were defined and compared in the study?

Possible student response: I predict the main populations were: English as a second language learners between approximately 7 and 12 years old, English as a second language learners between approximately 12 and 17 years old, English as a second language learners between approximately 17 and 30 years old, and English-only speakers. I think that all populations were living in an English-speaking country.

6. Compared with previous studies, what made this study unique?

Possible student response: Earlier studies have had much smaller sample sizes, typically no more than about 250 monolingual and bilingual participants. Hartshorne's study had 669,498 participants that were native and nonnative English speakers.

7. Other researchers expressed concerns about how well the survey reflected the overall ability to learn a language. What reservations did psycholinguist David Barner have?

Possible student response: Language skills may not develop along a single timeline — different elements of grammar might be learned at different rates. The responses of volunteers to an online, 132-item grammar test may not accurately indicate how well the volunteers actually speak English.

8. What reservations did linguist David Birdsong have?

Possible student response: Language learning may involve more than just a critical window for acquiring grammar. For example, growing up speaking two languages at once puts still poorly understood strains on the ability to grasp grammar. In the study, the grammar scores of people who were bilinguals from birth were lower than the scores of English-only speakers, which is consistent with evidence that bilinguals cannot easily turn off one language while speaking another. Interactions between two languages spoken by one person may slightly depress how much can be learned about both languages.

9. What questions do you still have after reading the article?

Possible student response: What are the best ways to learn and teach a language? What are the best ways to assess students' progress in learning a language? What are the best ways to assess the rates at which a person masters various aspects of a language?

10. Review the answers to all of your questions and summarize the main idea of the article.

Possible student response: A new study suggests that the ability to learn grammar of a second language may flourish until around the age of 17, when grammar-absorbing ability plummets. Modest amounts of language learning for native and second-language speakers may continue until the approximate age of 30, but the majority of grammar-learning occurs within the first 10 to 20 years of life. Previous studies indicated that the ability to learn grammar lasted only until the age of 5.

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Article-Based Observation: Q

Directions: Read the article "There's extra time to learn a language" and then answer these questions:

1. What was one new result about language learning?

2. What had previous research suggested?

3. Until what age does peak language learning ability last, according to the researchers?

4. What methods did the researchers use to generate data?

5. Based on the survey results stated in the article (and without reviewing the primary research article), what populations were defined and compared in the study?

6. Compared with previous studies, what made this study unique?

7. Other researchers expressed concerns about how well the survey reflected the overall ability to learn a language. What reservations did psycholinguist David Barner have?

8. What reservations did linguist David Birdsong have?

9. What questions do you still have after reading the article?

10. Review the answers to all of your questions and summarize the main idea of the article.

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Quest Through the Archives: Q&A

1. Search for an article about the neurological benefits of being bilingual and summarize what you find.

Possible student response: The *Science News* Growth Curve blog post "A bilingual brain is prepped for more than a second language," published 12/31/2014, discusses how the brains of bilingual and monolingual speakers process words. People who speak two languages are constantly activating both languages in their brains. One study used functional magnetic resonance imaging to scan the brains of bilingual and monolingual volunteers as they matched pictures with spoken words. Bilingual volunteers were no faster at completing the task than monolingual volunteers. However, certain regions in bilingual volunteers' brains did not have to work as hard as the brains of monolingual volunteers. Other studies have shown that bilingual people begin exhibiting symptoms of Alzheimer's disease about five years later than monolingual people.

2. Can you find an article about language extinction and preservation? What does it say?

Possible student response: The *Science New for Students* article "Saving vanishing 'tongues'," published 2/6/2014, discusses how languages go extinct and how digital technology can at least preserve endangered languages for future linguistic studies. Currently, there are approximately 7,000 languages spoken worldwide. But by 2100, nearly half of those could become extinct. Mass media, the internet and education pressure children who would speak less common languages to speak more common languages, such as English, Mandarin, Hindi or Spanish. As those children grow up preferring to speak more common languages, and people who spoke the less common languages grow older and die, whole languages can become extinct. Researchers are traveling the world making detailed recordings of speakers of uncommon languages in order to preserve knowledge about those languages.

3. Find and summarize an article that explains why some scientists analyze languages by constructing evolutionary trees.

Possible student response: The *Science News* article "Searching for the tree of Babel," published 5/25/2002, describes how vocabulary and grammatical similarities among languages can be used to construct evolutionary trees of languages. By analyzing when and how languages branched from one another, researchers can also learn when and how different groups of people branched off from one another. Trees for closely related languages are more straightforward and reliable. However, language trees are much harder to construct, and much more prone to errors, for languages that are very distantly related. Another complicating factor is that languages often borrow from one another or languages merge to form new languages.

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Quest Through the Archives: Q

Directions: After reading the article "There's extra time to learn a language," log in to your *Science News* in High Schools account and use the Search page to answer these questions. Make sure you adjust the filters to include articles written before 1999, if the question requires you to do so.

1. Search for an article about the neurological benefits of being bilingual and summarize what you find.

2. Can you find an article about language extinction and preservation? What does it say?

3. Find and summarize an article that explains why some scientists analyze languages by constructing evolutionary trees.

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Cross-Curricular Discussion: Q&A

Directions: After students have had a chance to review the article "There's extra time to learn a language," lead a classroom discussion based on the questions that follow.

For overviews of world languages and their histories, see:

Bernard Comrie (ed.), *The World's Major Languages*, 3rd ed. (2018).
Asya Pereltsvaig, *Languages of the World: An Introduction*, 2nd ed. (2017).
Nicholas Ostler, *Empires of the Word: A Language History of the World* (2006).

BIOLOGICAL SCIENCES

Discussion question:

1. What is the Indo-European language family?

The Indo-European language family is a group of hundreds of languages that are spoken in most of Europe, areas of European settlement and in much of Southwest and South Asia. Based on how similar or different those languages are from one another, scientists have constructed a family tree showing how far back each language branched off from the others. Using archaeological information about human migrations and settlements, and estimates about how rapidly languages change, it has been estimated when the major language branching events occurred. The Indo-European language family appears to have originated in or near what is now Turkey, around 6,000 to 8,000 years ago, with a language that has been dubbed Proto-Indo-European (PIE). There are similar language family trees for Native American languages, African languages, and languages spoken in East Asia and the Pacific Islands. Languages from very different parts of the world, say East Asia and Europe, have so few similarities that working out their connections is very difficult and rather speculative.

Extension prompts:

2. What is neuroplasticity?

An adult human brain has roughly 100 billion nerve cells, or neurons, and several hundred trillion synapses — the connections between neurons. As you learn new things and make new memories, synapses in your brain are constantly forming and rearranging. The ability to form new synapses and to change existing ones in response to a change in the environment is called neuroplasticity. While the human brain is certainly capable of neuroplasticity and learning throughout life, neuroplasticity may be greatest during childhood, when the brain is best equipped to learn languages and other new information.

3. What are mnemonics? Give an example of a mnemonic device that you have used this year.

Mnemonics are systems designed to make it easier to remember new information. Mnemonics have been around for centuries — some ancient writing systems used mnemonic symbols. Today, people often use written and verbal mnemonic systems, or devices, to learn new languages. But mnemonic devices can be used for pretty much anything. For example, "cat-ions" are "pawsitive" is one way to remember that cation molecules are positively charged.

ENGINEERING AND EXPERIMENTAL DESIGN

Discussion question:

1. How can computer programs support language learning? Give specific examples.

Computer programs can provide real-time feedback to language learners, both in written and verbal forms. A program might engage a language learner by providing images of an object or action and having the student type or speak in the chosen language what is shown. A program might also provide vocabulary words for the student to define as well as prompts that require a student to use the correct verb conjugations or article/adjective/noun declensions. (Declensions are when the article, adjective or noun change form to indicate a number, gender or grammatical case). A program could evaluate a student's performance on grammar or vocabulary assessments and follow up with more questions in that student's areas of weakness. A program could detect differences in a student's pronunciation when compared with the pronunciation of a native speaker. Then, based on the results, the program could provide examples and exercises to improve the student's pronunciation.

Extension prompts:

2. How well can computer programs translate languages? Compare Google Translate (translate.google.com) and DeepL (deepl.com/translator). In the left-hand boxes of each program, type in a sentence or a paragraph in proper English. Then have each program translate it into the language of your choice. The translation will appear on the right side of the screen. Now, cut and paste the translation back into the left-hand box to have the program translate it back to English. What sorts of errors did the computer introduce? Compare these two programs.

Student answers will vary. DeepL translates fewer languages than Google Translate does, but tends to give more precise translations. DeepL usually puts words into the order that is appropriate for each translated language, whereas Google Translate often leaves words in the grammatical order that was appropriate for the original language. (Sound like Yoda, Google does.) Google Translate can also make some strange vocabulary mistakes. DeepL makes fewer mistakes.

3. What are some potential difficulties in conducting and analyzing survey studies, such as the one in "There's extra time to learn a language"?

Any tests involving humans or animals, even a survey, require safety and ethics approvals. In order for the results to have maximal statistical power, the number of volunteers should be as large as possible. The more complex the variations you are looking for are, the more volunteers you need, which is why this particular study recruited hundreds of thousands of volunteers. It can be difficult to find enough people, or to motivate them to spend the time and energy answering your survey. You have to figure out the questions that will yield the most useful information with the least time of the volunteers. You need to consider how accurate the responses from the volunteers are and what biases might affect volunteers' answers? If the survey is

written, it may not accurately test things that are not, such as fluency with spoken language. If the volunteer group does not include people from key demographics (such as young children within certain age ranges), it might throw off your results.

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Cross-Curricular Discussion: Q

Directions: The following list of discussion questions is provided to help you take notes, brainstorm ideas and test your thinking in order to be more actively engaged in class discussions related to this article. All questions in this section are related to topics covered in "There's extra time to learn a language."

BIOLOGICAL SCIENCES

Discussion question:

1. What is the Indo-European language family?

Extension prompts:

2. What is neuroplasticity?

3. What are mnemonics? Give an example of a mnemonic device that you have used this year.

ENGINEERING AND EXPERIMENTAL DESIGN

Discussion question:

1. How can computer programs support language learning? Give specific examples.

Extension prompts:

2. How well can computer programs translate languages? Compare Google Translate (translate.google.com) and DeepL (deepl.com/translator). In the left-hand boxes of each program, type in a sentence or a paragraph in proper English. Then have each program translate it into the language of your choice. The translation will appear on the right side of the screen. Now, cut and paste the translation back into the left-hand box to have the program translate it back to English. What sorts of errors did the computer introduce? Compare these two programs.

3. What are some potential difficulties in conducting and analyzing survey studies, such as the one in "There's extra time to learn a language"?

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Activity Guide for Teachers: Tongue Tied

Purpose: To understand how the similarities and differences between languages may influence language learning.

Procedural overview: Students can compare general features of the English language with features of other languages. Students can then think about how variations between the languages might influence language learning for native English speakers and speakers whose first language is not English.

Approximate class time: One class period.

Supply item:

- Student handout: Tongue Tied

Directions for teachers: Students could complete this activity sheet in class if there is time, or as homework. Make sure students have enough class time to compare and discuss their answers.

Directions for students: There are certain ways in which languages can be similar or different, and those features can make it easier or harder to learn a particular language. In this activity, compare English with some other language that you know or are familiar with. For example, think about challenges faced by an English speaker learning Japanese, as well as challenges that a Japanese speaker learning English might encounter.

Note: Compared with many other languages, English is especially irregular because it has Germanic and French roots and also pulls from Latin, Celtic and Norse languages. Thus, English is a combination of many other languages. As you work through the questions, if you or your classmates know French, German or Spanish, consider and discuss the similarities between those languages and English. Also consider how French, German, Spanish and English have deviated from one another over time.

1. At what age did you start learning English? How many years have you been speaking English?

Student answers will vary. From birth and the student's current age in years if the student is a native English speaker. If the student's first language is not English, the age at which the student began and how long they have been speaking English.

2. Do you know or are you familiar with one or more second languages? Did you learn it from your family, from classes at school or both? (You can list several second languages if you know them, but you only have to analyze one for the following questions.)

Student answers will vary.

3. At what age did you start learning that second language? How many years have you been learning or speaking that second language?

Student answers will vary.

4. How well do you know that second language? Are you fluent? Or do you know the language well enough to manage daily life in a country that speaks that language? Or are you halfway there? Or less? Can you, for example, just introduce yourself and make small talk about the weather?

Student answers will vary.

5. Are words in English mostly monosyllabic (one syllable per word) or polysyllabic (two or more syllables per word)? How about words in a non-English language that you know? How might differences between languages that are mostly monosyllabic and languages that are mostly polysyllabic affect language learning?

English words are polysyllabic, although certainly some words are just one syllable. Student answers on the complexity of non-English language words will vary.

As an example, Chinese words tend to be monosyllabic. In order to distinguish among so many possible words with only a limited range of syllables sounds, Chinese languages also use tones. In Mandarin, the predominant Chinese language, for example, the same syllable can mean something completely different depending on whether it is said with a tone of voice that is high and constant; rising, falling and then rising; falling; or flat and brief. Tones can make mastering a language more difficult for people whose native language does not use tones, or easier for people whose native language does use tones. Some non-Chinese Asian languages, such as Thai and Vietnamese; some Indian languages, such as Punjab; some African languages, such as Xhosa; and some Native American languages, such as Navajo, also use tones.

6. Languages may be written with letters from an alphabet (consonants and vowels), syllabograms from a syllabary (various possible combinations of consonants and vowels), logograms (a different character for every word) or a combination of those. How are English and a non-English language that you know written? How do differences between writing systems affect language learning?

Student answers will vary.

English and most other European languages are written with an alphabet derived from Latin. Russian and some other eastern European languages are written with an alphabet derived from Greek. Other languages such as Hebrew and Korean have their own form of an alphabet.

Japanese is written with two syllabaries (sets of syllabograms), one (hiragana) for native Japanese words and another (katakana) for the same sounds in foreign words imported into Japanese. Most Indian languages use Devanagari, which is a sort of combination of an alphabet and syllabary.

Chinese is written with logograms (Hanzi), so Chinese language students must learn thousands of them for all the different words. The Japanese language uses many Chinese logograms (kanji) and mixes those logograms with Japanese syllabaries. Certainly knowing the logograms from one language would help in learning another language that uses the same or similar logograms.

It is easiest to learn a second language if that language uses the same alphabet, syllabary or logograms as a learner's native language (possibly with a few additional accent marks or special characters). It is somewhat harder to learn a different alphabet, syllabary or system of logograms.

7. Cognates are words in different languages that have similar meanings and spellings. More closely related languages have more cognates, and less closely related languages have fewer cognates. What are a

few examples of cognates between English and a non-English language that you know? How can the presence or absence of cognates affect language learning?

Most languages have cognates with different languages. For example, many European languages will have some cognates with English, depending on how closely related the languages are. Even very distantly related languages may have cognates for words that were deliberately borrowed from the other language in more recent times. For example, "Ma" is a cognate for mother in a wide range of languages, perhaps because it is one of the easiest sounds for babies to make.

Cognates can make it easier to learn a language. You have to watch out for false cognates, though. False cognates are words that look and sound similar but actually have very different meanings. For example, the German word "gift" means poison.

8. The most important parts of a sentence are the subject (who/what is doing an action), the verb (or action) and the object (what the subject is acting upon). What is the usual order of those parts in an English sentence? What is the usual word order in a non-English language that you know? How does word order affect language learning?

English is usually subject-verb-object: "I created a monster."
English word order can be changed in questions: "Was a monster created?"

French is usually subject-verb-object, and that can also change for questions.
J'ai créé un monstre.
Un monstre a-t-il été créé?

In Spanish, like English, statements start with a subject and verb, but the majority of adjectives in Spanish come directly after the subject instead of before it. The question mark lets the reader know that the statement is a question.
Creé un monstruo.
Spanish word order doesn't change in questions: ¿Creé un monstruo? (Did I create a monster?)

German speakers typically move parts of speech around for different purposes. Usually sentences are subject-verb-object. However, to emphasize a word or phrase (such as the object), German speakers will put that part first, then the verb, then everything else.

Almost half of the languages spoken today are subject-verb-object (SVO). Almost half are subject-object-verb (SOV), such as Japanese and many Indian languages. Most of the remaining languages, such as Tagalog (spoken in the Philippines) and Celtic languages (Irish, Gaelic and Welsh), are verb-subject-object (VSO). A very small number of languages use even more creative sentence orders.

If a second language uses a different sentence order than a learner's native language, it can make learning that second language harder.

9. Some languages can change to express politeness or formality. How does English change to express politeness or formality? How does a non-English language that you know change to express politeness or formality? How does that affect language learning? Give at least one example for these cases.

English normal: *"What do you want?"*
English polite/formal: *"What would you like?"*

An example of a verb modification to express politeness in English is changing "do/want" to "would/like" (apart from random "please" or "thank you" that might be added on).

French normal: "Qu'est-ce que tu veux?"
French polite/formal: "Qu'est-ce que vous voudriez?"

In French, both the verb and the pronoun can change to express politeness.

German normal: "Was willst du?"
German polite/formal: "Was möchten Sie?"

In German, both the verb and the pronoun can change to express politeness.

Spanish normal: "¿Qué te gustaría?"
Spanish polite/formal: "¿Qué le gustaría a usted?"

In Spanish, there is a formal "you/usted" and an informal "you/tú." The form of "you" changes the verb ending. To make a polite request, you add the conditional tense to many questions. Te gustaría ayudarme? "Would you like to help me"?

Some languages such as Japanese can dramatically change many parts of the sentence to express politeness. Japanese also has several possible levels of politeness, not just two as in English, French and German (polite/formal and informal). For language learners whose native language has different levels of politeness than a new language, learning may be slightly more difficult.

10. In some languages, verbs can vary a lot depending on the subject of the sentence, and will therefore be conjugated based on the subject. Some verbs vary in the same patterns (regular verbs) and some verbs stray from established patterns (irregular verbs). In some languages, verbs may not vary much at all.

Pick a few common verbs in English, give the infinitive form (to _____) and then conjugate the verbs in the present tense for various pronouns. How easy is verb conjugation to learn in English?

Pick a few common verbs in a non-English language that you know, give the infinitive form and then conjugate the verbs in the present tense for various pronouns. How does verb conjugation affect language learning?

Examples:

	English: to be		***English: to have***	
Person	*Singular*	*Plural*	*Singular*	*Plural*
1st	*I am*	*we are*	*I have*	*we have*
2nd	*you are*	*you are*	*you have*	*you have*
3rd	*he/she/it is*	*they are*	*he/she/it has*	*they have*

French: être

Person	*Singular*	*Plural*
1st	*je suis*	*nous sommes*
2nd	*tu es (informal)*	*vous êtes (informal)*
2nd	*vous êtes (formal)*	*vous êtes (formal)*
3rd	*il/elle est*	*ils/elles sont*

French: avoir

Singular	*Plural*
j'ai	*nous avons*
tu as (informal)	*vous avez (informal)*
vous avez (formal)	*vous avez (formal)*
il/elle a	*ils/elles ont*

German: sein

Person	*Singular*	*Plural*
1st	*ich bin*	*wir sind*
2nd	*du bist (informal)*	*ihr seid (informal)*
2nd	*Sie sind (formal)*	*Sie sind (formal)*
3rd	*er/sie/es ist*	*sie sind*

German: haben

Singular	*Plural*
ich habe	*wir haben*
du hast	*ihr habt*
Sie haben (formal)	*Sie haben (formal)*
er/sie/es hat	*sie haben*

Spanish: ser

Person	*Singular*	*Plural*
1st	*yo soy*	*nosotros/nosotras somos*
2nd	*tú (singular) eres*	*vosotros (plural) sois*
3rd	*él/ella/usted es*	*ellos/ellas/ustedes son*

Spanish: tener

Singular	*Plural*
yo tengo	*nosotros/nosotras tenemos*
tú (singular) tienes	*vosotros (plural) tenéis*
él/ella/usted tiene	*ellos/ellas/ustedes tienen*

English, French, Spanish and German each have a few hundred irregular verbs, which can make it challenging to learn those languages. Regular verbs follow certain patterns, but those patterns still have to be learned and followed.

In Japanese, verbs are the same for all subjects, which makes them much easier to learn.

11. In the English language, do nouns, the articles (a/the) and adjectives associated with the nouns have an assigned grammatical gender? What about nouns, articles and adjectives in a non-English language that you know? How could grammatical gender affect language learning?

English does not assign grammatical gender to nouns, apart from the nouns that specifically exist to express gender (like women and men, or actors and actresses). English articles do not have or reflect grammatical gender. Very few English adjectives change with gender. There are also a few cases where a different adjective is used depending on gender: "handsome" for men vs. "beautiful" for women.

French nouns belong to two possible grammatical genders, masculine or feminine. Articles change to reflect gender and number: un/une and la/le/les (plural). Adjectives also change to reflect grammatical gender and number.

German nouns belong to three possible grammatical genders, masculine, feminine or neuter. Articles change to reflect gender and number: ein/eine/ein and der/die/das/die (plural). Adjectives also change to reflect grammatical gender and number.

In Spanish, there is generally a rule that masculine nouns end in "o" and feminine nouns end in "a". All nouns in Spanish that end in "ista" can be either feminine or masculine. Some Spanish adjectives (generally, adjectives that end in "o") reflect gender and number, while others (generally those that do not end in "o"), reflect just number. Articles change to reflect gender and number: el/la and los/las (plural).

Having to remember the gender of lots of nouns, and use articles accordingly, can make a language harder to learn for speakers whose native languages do not use grammatical gender.

12. After you have finished answering the above questions on your own, compare answers with other students in the class who picked the same non-English language. How were your answers similar or different?

Student responses will vary.

13. Compare your answers for the non-English language you picked with the answers for a different non-English language that another student picked. In what general ways are those non-English languages similar or different?

Student answers will vary.

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Activity Guide for Students: Tongue Tied

Purpose: To understand how the similarities and differences between languages may influence language learning.

Procedural overview: Compare general features of the English language with features of other languages, and think about how variations between the languages might influence language learning for native English speakers and speakers whose first language is not English.

Directions for students: There are certain ways in which languages can be similar or different, and those features can make it easier or harder to learn a particular language. In this activity, compare English with some other language you know or are familiar with. For example, think about challenges faced by a native English speaker learning Japanese, as well as challenges that a native Japanese speaker learning English might encounter.

Note: Compared with many other languages, English is especially irregular because it has Germanic and French roots and also pulls from Latin, Celtic and Norse languages. Thus, English is a combination of many other languages. As you work through the questions, if you or your classmates know French, German or Spanish, consider and discuss the similarities between those languages and English. Also consider how French, German, Spanish and English have deviated from one another over time.

1. At what age did you start learning English? How many years have you been speaking English?

2. Do you know or are you familiar with one or more second languages? Did you learn it from your family, from classes at school or both? (You can list several second languages if you know them, but you only have to analyze one for the following questions.)

3. At what age did you start learning that second language? How many years have you been learning or speaking that second language?

4. How well do you know that second language? Are you fluent? Or do you know the language well enough to manage daily life in a country that speaks that language? Or are you halfway there? Or less? Can you, for example, just introduce yourself and make small talk about the weather?

5. Are words in English mostly monosyllabic (one syllable per word) or polysyllabic (two or more syllables per word)? How about words in a non-English language that you know? How might differences between languages that are mostly monosyllabic and languages that are mostly polysyllabic affect language learning?

6. Languages may be written with letters from an alphabet (consonants and vowels), syllabograms from a syllabary (various possible combinations of consonants and vowels), logograms (a different character for every word) or a combination of those. How are English and a non-English language that you know written? How do differences between writing systems affect language learning?

7. Cognates are words in different languages that have similar meanings and spellings. More closely related languages have more cognates, and less closely related languages have fewer cognates. What are a few examples of cognates between English and a non-English language that you know? How can the presence or absence of cognates affect language learning?

8. The most important parts of a sentence are the subject (who/what is doing an action), the verb (or action) and the object (what the subject is acting upon). What is the usual order of those parts in an English sentence? What is the usual word order in a non-English language that you know? How does word order affect language learning?

9. Some languages can change to express politeness or formality. How does English change to express politeness or formality? How does a non-English language that you know change to express politeness or formality? How does that affect language learning? Give at least one example for these cases.

10. In some languages, verbs can vary a lot depending on the subject of the sentence, and will therefore be conjugated based on the subject. Some verbs vary in the same patterns (regular verbs) and some verbs stray from established patterns (irregular verbs). In some languages, verbs may not vary much at all.

Pick a few common verbs in English, give the infinitive form (to _____) and then conjugate the verbs in the present tense for various pronouns. How easy is verb conjugation to learn in English?

Pick a few common verbs in a non-English language that you know, give the infinitive form and then conjugate the verbs in the present tense for various pronouns. How does verb conjugation affect language learning?

11. In the English language, do nouns, the articles (a/the) and adjectives associated with the nouns have an assigned grammatical gender? What about nouns, articles and adjectives in a non-English language that you know? How could grammatical gender affect language learning?

12. After you have finished answering the above questions on your own, compare answers with other students in the class who picked the same non-English language. How were your answers similar or different?

13. Compare your answers for the non-English language you picked with the answers for a different non-English language that another student picked. In what general ways are those non-English languages similar or different?

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