

LING 120, Fall 2017: Language and Computers

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Class outline

1. Discussion on question from last class
2. Mobile apps and language learning
3. View - a system for practicing grammar
4. LTS to teach writing
5. LTS to teach speaking
6. LTS to teach listening
7. Specialized LTS
8. Language Tutoring Systems - conclusion

Attendance exercise for last class

4. **ALL:** We mentioned multiple-choice exercises as a common CALL activity, for which all linguistic knowledge is directly encoded in the activity. Start a web browser and do a search for multiple choice language exercises. Explore the pages you find to see which language topics such multiple-choice exercises are used for. Why are those topics well suited to this exercise type?

Are there any differences between the exercises offered for learners of English and those for learners of Spanish (e.g., on the pages found by a search for Spanish multiple choice exercises)?

5. **ALL:** Many of the web pages identified by the search in the previous exercise also include exercise types other than multiple choice. Which kind of exercises do you find on those pages? Where do you think the knowledge to evaluate and provide feedback to those activities is encoded? Which kind of feedback do they provide? Are these canned responses?

Main points from your Responses

- ▶ Multiple choice questions about tense make sense because knowing the word is not sufficient for getting the right tense.
- ▶ In Spanish, there were questions focusing on noun-gender, verb conjugation which may not make sense in English.
- ▶ One student reported on Arabic exercises (!), focusing on word order.
- ▶ Feedback given by the system depended on how unsure the learner was (chosen by button click) in one case.
- ▶ Feedback is canned in many other cases.
- ▶ Most multiple choice questions seem grammar based, not vocabulary based.

Mobile Apps and Language Learning

- ▶ Apps with structured courses (Duolingo, Babbel - web interface available)
- ▶ Apps with flashcards etc to remember words (Memrise)
- ▶ Educational games (MindSnacks)
- ▶ Practicing communication (HelloTalk)
- ▶ Pronunciation training (ElsaSpeak)

more: <https://www.lingualift.com/blog/best-language-learning-apps/>

note: some of them are frame based. Some of them use language processing, machine learning, speech recognition and other technologies.

Not tutoring, but letting you practice with real texts

VIEW: <http://sifnos.sfs.uni-tuebingen.de/VIEW/> - quick demo

LTS that give feedback on writing:

- ▶ CyWrite@ISU: <https://cywrite.engl.iastate.edu/wp/>
- ▶ eRater by ETS: <https://www.ets.org/criterion/>
(demo: <https://vimeo.com/30553836>)
- ▶ WriteToLearn: <http://www.writetolearn.net>
(demo: <https://goo.gl/vEV3o7>)
- ▶ general purpose writing feedback: Grammarly.com

... and so on.

Teaching to Speak and Listen

- ▶ GoldenSpeaker@ISU:
<http://goldenspeaker.las.iastate.edu>
- ▶ Project Listen @CMU:
<http://www.cs.cmu.edu/~./listen/>
- ▶ 2 demo videos of Project Listen

Teaching to Speak and Listen

Specialized writing tutor: Research Writing Tutor@ISU
<https://vimeo.com/90669213>

CALL/LTS: Conclusion

- ▶ Interesting mix of computer science, linguistics, psychology, human-computer interaction studies, language teaching etc.
- ▶ Existing software range from neatly made interfaces that are not "intelligent" to those that adapt to the learner through machine learning and NLP techniques.

Next Week

- ▶ Topic 4: Searching
- ▶ Readings: Chapter 4
- ▶ Assignment 2 is due next week
- ▶ I will announce mid-term topics and teams next week.

Attendance Exercise

Assume you are given the task of designing a software that can automatically score short answers from students about whatever they read (science, maths, any subject). How will you go about this? What kind of tasks should that system do? What are the features we should look at to evaluate student answers?

- a) if we have a target answer
- b) if we do not have a target answer

(write your answers on a sheet of paper and return to me. You can also post on Canvas in the discussion forum for today's date)