

Using constructed languages to introduce and teach linguistics

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Abstract

Introductory linguistics courses are a common component of general education curricula at many institutions of higher education, reaching tens of thousands of students with diverse backgrounds and interests. Such courses provide a great opportunity for linguists to convey the field's message and its values to a wider audience. We propose that it is possible to increase the public outreach of such courses by engaging not only the students in the course, but also the campus community at large. In this paper, we report on using constructed languages (conlangs) as a tool to help students understand course materials via active learning as well as present linguistic research to the wider community of college campuses.

Keywords: linguistic education; constructed languages; pedagogy

1 Introduction

Introduction to linguistics courses are one of the main venues for the public to engage with linguistic research. Since linguistics is not commonly offered as a part of the secondary education system in the US or many other countries, introductory college courses are often the first time the public hears about linguistics. Therefore, introductory linguistics courses play an important role in publicizing linguistics as an academic discipline. As a team of instructors, we asked whether constructed languages could provide a more engaging way to teach linguistic research methods, assess students' understanding of linguistic structure, and publicize linguistics more generally.

We decided that, in lieu of a final exam, students would work in groups to construct new languages (conlangs) to present to their class in a conference poster presentation format. This project has the potential to be more engaging than a traditional exam because it allows students to apply the knowledge gained in the course to synthesize a creative product. We held an open presentation session outside in a main campus area to allow interaction from the campus community. This enabled students, staff, and faculty from across the university to observe the students' conlangs and engage in linguistics.

Our main objectives for this project were: (a) to formulate an alternative assessment of learning for an introductory linguistic course that incorporates active learning; and (b) to effectively engage students and the campus community via this project. We developed the conlang project as a proof of concept, but in the future, we aim to compare this method's success with more traditional assessments like final exams and essays.

2 Background

A constructed language, also known as a conlang, is a language that is consciously constructed and designed. Conlangs can serve many purposes. They can be used for fiction writing, movie-making, and world-building, as in *Star Trek's* Klingon, *Game of Thrones'* Dothraki, or *Avatar's* Na'vi. They can be used for political or social goals such as creating a

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lingua franca or an international second language, with Esperanto as the most prominent case. Alternatively, they can be thought experiments exploring possible linguistic structures for specific purposes. For example, Toki Pona was an attempt to produce a hyper-minimalist language where complex thoughts and feelings can be expressed by a small lexicon of simple words (Peterson 2015).

The past few decades have seen a sharp rise in the popularity of conlanging in popular culture. More and more books, movies, and TV series use conlangs to enhance and deepen their stories. Therefore, not only could conlanging prove to be an exciting task for undergraduates, it could also have the effect of boosting interest in the field through efforts to publicize the students' work as a campus-wide conference.

We chose to use conlanging to assess our students' progress towards meeting the objectives for our introductory course. The course objectives listed in the syllabus were as follows:

1. Introduce key topics in linguistics
2. Practice basic linguistic analysis
3. Show connections between linguistic topics and real-world issues
4. Practice critical and scientific thinking

Since conlangs often mimic aspects of natural languages, their creation requires extensive knowledge of human languages in all levels of linguistic structure. In pedagogical contexts, conlanging can be an invaluable tool for introductory linguistics classes, as it helps students synthesize and solidify the theoretical knowledge that they gain in the class by practicing it. This aspect of conlanging can contribute to an "active learning" environment in introductory linguistics courses (Bonwell and Eison 1991). Active learning involves students' efforts to actively construct their knowledge and is shown to enhance student performance in STEM education (Freeman et al. 2014). Conlanging, by definition the active construction of linguistic knowledge, is likely to carry the same benefits for undergraduate students.

3 Methods

3.1 Group formation

In place of a final exam or paper, we assessed our students' knowledge of fundamental linguistic concepts by requiring them to construct their own languages. Our course had 243 students enrolled across seven discussion sections, with roughly 35 students per section. The students were divided into small groups of four or five, with a total of 49 teams. When forming groups, we allowed students to choose their own group members. Students who did not indicate a preference were placed into a group by an instructor.

3.2 Grading criteria

Students were given a guidance checklist document including all of the aspects of linguistic structure that their conlang needed to include (see Appendix 1). Requirements included a phonetic inventory, allophonic variation, phonotactic constraints, morphological typology, and glosses of various sentences. We chose the requirements to reflect each unit during the course. The sample sentences to gloss were chosen to reflect variation in tense, mood, aspect, and transitivity. Other criteria instructors could consider adding include syntactic trees and synchronic and diachronic variation. Instructors may also consider having students create

their own writing systems to represent their conlangs.

The guidance document was then turned into a rubric for assessment. The rubric (see Appendix 2) was divided into three sections (linguistic criteria, poster design, presentation skills) with a total of 30 points available. The majority of the points (20) went to assessing the extent to which students satisfied the linguistic criteria for the project. Five points each were allocated to the rubric sections of poster design and presentation skills. The students were given the rubric before the presentation to prepare.

3.3 Instruction

To guide students in the creation of their conlangs, we primarily focused on teaching via discussion sections, in which the students engaged directly with their teaching assistants in weekly 50-minute sessions outside of lectures. Within their discussion sections, students were reminded of the criteria for each section of the project. The students were shown examples of natural languages that typify different linguistic structures, such as agglutinative versus isolating languages. The students were also provided with a guidance document, which included not only the checklist of criteria to include in their conlangs but links to external resources such as videos and lecture notes about conlanging (see Appendix 1). In some sections, students were given in-class time to work on their projects with an instructor checking in, and were shown some of these external resources directly in class. However, not all sections were taught in the same way, so some students may have received more one-on-one help with their projects than others. Future work involving discussion sections would benefit from the use of standardized materials to ensure all students across all sections receive the same information.

3.4 Assessment

In order to assess each conlang, we asked the students to prepare a poster and a short presentation (approximately 5 minutes) to be given in a public conference held at the university. This conference, which we titled “The conference on constructed languages,” took place over eight hours in the span of one day. Each group was assigned to be present for an 80-minute time slot, with roughly 10–15 groups presenting in each slot. All groups were given a large poster board and a stand that they could attach their presentation materials onto (for examples, see Figures 1 and 2).

EMIKUZA

The man bit the dog → emu teko emohi

PHONETICS

Places of Articulation:

- Bilabials: [p], [m]
- Interdentals: [θ]
- Alveolars: [t], [s], [n], [l], [z]
- Palatals: [ɲ], [ɟ], [ɥ]
- Velars: [k], [g]
- Glottals: [h]

Manners of Articulation:

- Voicing:
 - voiced: [m], [n], [z]
 - voiceless: [p], [t], [s], [k], [θ], [h]
- Nasal: [m], [n], [ɲ]
- Oral: [p], [t], [k], [s], [θ], [h], [z]
- Stops: [p], [t], [k]
- Fricatives: [s], [z], [θ]
- Liquids: [l]

IPA for Vowels & Consonants:

a	ɔ	p	ɲ	l
e	ɛ	t	θ	h
i	ɪ	k	k	ɟ
o	ɔ	s	s	z
u	u	m	m	
ɥ	ɥ	n	n	

- No consonant pairs, consonant always follows a vowel
- vowels can be pairs

PHONOLOGY

- Hierarchy for syllables:
/a/ > /eɔ/ > /iɥ/ > /z/ > /m/ > /s/ > /p/ > /k/

- Phonological Rule:
- voiceless stop /p/ is aspirated at first syllable
- after syllable with voiceless alveolar fricative, it's unaspirated ex. seipa (sei pa)

- Alphabetic Variation: Z is pronounced as 's' if it is not in the first variable

- Phonotactic Constraint: not allowed to have two consonants

- Syllable structures: CV, CVV, V

- Suprasegmental structure: vowel length stretch changes word meaning

SYNTACTIC

- One intransitive: The sun is rising: ekilo timuya → ekiloo timuja
- One transitive: He caught the ball: teyapozu esoso → teyapoozu esoooso
- One ditransitive: He got his dog a treat: tehozu amohiseipa → tihoozu amohiseipa

- Free word order: words can be mixed around in sentences / not bound

- Agreement:

- Number: *Person
- Plural: si - 1st: la, 2nd: ma, 3rd: zu
- Gender: *man → mu and *woman → nu
- have distinguishing terms
- Everyone zu (addressed 3rd person)

SEMANTIC & PRAGMATIC

- punctuation: periods, exclamation points, and question marks
- proper name: Emiku
- utterance: Dogs bark → mohisi luku
- tense (prefixes): past → te, present → ti, future → to
- Indefinite → n/a
- definite → 'e' as a prefix

SOCIOLINGUISTIC

- noemiku (northern emiku people) → standardized emikuza
- soemiku (southern emiku people) → more usage of slang → usage of /ov/ instead of 'o'
- Two demographic factors: region and age → older people have less slang → slang is generational

Figure 1: Emikuza, a student-created conlang.

MOKIVO

HOCKETT DESIGN FEATURES

DUALITY OF PATTERNING: nilo po tamo

ARBITRARINESS: "po" translates to "the" (NO LOGICAL CONNECTION BETWEEN THE TWO)

DISCRETENESS: "po" translates to "is"

MEANING: "nilo" means "park", "juki" means "was", "nilo" means "eat"

PHONOLOGY

PHONOLOGICAL RULE: INSERTION (EPHORESIS)

- **TODAZA** - PRONOUNCED AS "toh-dah-zah" WITH AN ADDED **h** FOLLOWING TO, DA, & ZA
- **KAWOMA** - PRONOUNCED "kah-woh-mah" WITH AN ADDED **h** FOLLOWING MA, WO, & MA
- **PO** - PRONOUNCED "poh" WITH AN ADDED **h** FOLLOWING O.

ALLOPHONIC VARIATION: ASPIRATION OF VOICELESS STOPS

- ALLOPHONES: VOICELESS STOPS (p, t, k) ARE ASPIRATED AT START OF STRESSED SYLLABLE
- EXAMPLE: "tamo" (breed)
- ALLOPHONE: [tamo]
- ENVIRONMENT: AT THE BEGINNING OF A STRESSED SYLLABLE

PHONOTACTIC CONSTRAINT: RESTRICTION ON CONSONANT CLUSTERS AT BEGINNING OF SYLLABLES

- SYLLABLES CANNOT START WITH A CLUSTER OF TWO OR MORE CONSONANTS.
- **PRO** (apple)
- **niji** (sun)
- **po** (is)
- **zooom** (rising)
- **nilo** (eat)
- **kamo** (bread)

ALLOWED SYLLABLE STRUCTURES:

- 1) CV (CONSONANT-VOWEL): EXAMPLES - po, ni, pa, zo, lo, ju, tu, ka
- 2) CVC (CONSONANT-VOWEL-CONSONANT): EXAMPLES - nij, zam, ni, kam, mo, dun
- 3) V (VOWEL): EXAMPLES - a, i, u

SUPRASEGMENTAL FEATURES: CONTAINS SUPRASEGMENTAL FEATURE OF INTONATIONAL AN EXAMPLE OF THIS OCCURS IN SENTENCE "is he swimming" TRANSLATES TO "pa ti korozu". THE RISING ON THE LAST WORD "korozu" INDICATES THAT A QUESTION IS BEING ASKED

SYNTACTIC CRITERIA

TRANSITIVE, INTRANSITIVE & DITRANSITIVE SENTENCES

EXAMPLES INCLUDE SENTENCES W/ TRANSITIVE, INTRANSITIVE & DITRANSITIVE STRUCTURES. FOR INSTANCE: TRANSITIVE: "HE BIT THE DOG AT ME" (jo duni jo duni jo duni) INTRANSITIVE: "THE DOGS SLEPT" (po niwo zo) DITRANSITIVE: "HE GOT THE BALL" (teji jo po moji) SENTENCE TRANSLATIONS: "THE DOG BIT THE MAN" (jo duni jo duni jo duni) "THE DOG BIT THE DOG" (jo duni jo duni jo duni) "THE BOY WAS GIVEN A GIRL" (jo niwo jo duni jo duni) "THE BOY WAS GIVEN A GIRL" (jo niwo jo duni jo duni) "THE BOY WAS GIVEN A GIRL" (jo niwo jo duni jo duni)

CHARTS: CONSONANTS AND VOWELS

	LABIAL	CORONAL	PALATAL	VELAR	BACK	GLOTTAL
STOP	P, B	T, D		K, G		
FRICATIVE	W	S, Z, θ			h	
NASAL	m	n				
APPROXIMANT		l	j			

	FRONT	CENTRAL	BACK
CLOSE	i		u
MID			o
OPEN		a	

MORPHOLOGICAL CRITERIA

MOKIVO IS AGGLOUTINATIVE & FUSIONAL MAINLY BE OF ITS AFFIXES OF AFFIXES TO THE ROOT AND THE FACT THAT IT HAS MORE THAN ONE GRAMMATICAL FEATURE IN SOME OF THE WORDS.

3 INFLECTIONAL AND DERIVATIONAL MORPHEMES IN THE SENTENCE "THE DOG SLEPT". THE LETTER "S" IS ADDED TO THE NOUN "dog" TO INDICATE PLURALITY - INFLECTIONAL

"THE DOG SLEPT" - "niwo" IS ADDED TO THE VERB "slept" TO INDICATE PAST TENSE - DERIVATIONAL

"THE DOG BITED AT ME" - "niwo" IS ADDED TO THE VERB "bit" TO INDICATE PAST TENSE - DERIVATIONAL

INFLECTIONAL: PO NIWO JO ZABONI (PRESENT PARTICLE)

DERIVATIONAL: JO DUNI JO NIWO BI GA (PAST TENSE)

Figure 2: Mokivo, a student-created conlang.

Over the course of the conference, the students gave short presentations to the instructors and to any passerby that stopped to check out the posters. The conference was held in a centralized public area on the University of California, Davis campus close to a

large student building that sees heavy foot traffic (see Figure 3). The event was also advertised to students and faculty in the campus's Linguistics and Psychology departments.



Figure 3: Students setting up their conlang posters for the first outdoor presentation session.

The rubric was converted into a Google Form and shared among the instructors. All instructors brought a smartphone to the event to access it. This was done to avoid the possibility of influencing other instructors' grading decisions. Inputting the scores into a Google Form averaged all instructors' scores together, resulting in a more equitable means of assessing each group's final project. The instructors as a group observed each poster, listened to the students' presentations, and submitted individual grades and comments. The instructors aimed to give each group about 4–5 minutes. For most groups, the students were allowed to choose what to share verbally. Afterward, the instructors asked follow-up questions. However, some presentation sessions had more groups than others. In the largest sessions, it was decided that each instructor would ask one question about an aspect of the language's structure, to save time.

4 Results

This section outlines the typological diversity of the students' conlangs. Our hope was to encourage students to utilize language structures that were not solely based on knowledge of their own natively-spoken languages, but an understanding of the diversity that natural languages possess.

4.1 Phonemic inventory

Phonemic inventory choices by the students varied widely, with consonant inventories ranging from six to 25 and vowels from two to 13. Minimal and maximal examples of consonant inventories are exemplified in Tables 1 and 2.

Table 1: Consonant inventory of the conlang Təgəpɹy.

	Bilabial	Alveolar	Velar
Plosive	p b	t d	k g

Table 2: Consonant inventory of the conlang Kerv Spi:k.

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Palatal	Velar	Uvular	Glottal
Plosive	p b			t d			k g	q	
Nasal	m	ɱ		n			ŋ	ɴ	
Tap				r					
Fricative		f v	θ ð	s z	ʃ ʒ				h
Approximant						j	w		
Lateral approximant				l					

Mean inventory sizes were 16 for consonants and seven for vowels. Students also seemed to follow a trend where a larger consonant inventory entailed a larger vowel inventory. Consonant inventories largely consisted of pulmonic consonants common to English or other Indo-European languages. However, several languages utilized non-pulmonic or other unique sounds only for special purposes.

4.2 Morphology

The majority of groups chose an agglutinative approach at 38 (78%), with easily separable morphemes that were not fused or ambiguous in semantic function. In addition, five languages were fusional, two were isolating, and two languages were potentially polysynthetic. Example (1) demonstrates a common example of agglutinative affix use, often consisting of tense morphemes on the verb stem and plural marking on the noun stem, while (2) shows an example of morphemic fusion in the prefix *ao-*.⁴

- (1) VɛTʃpuena
xa-ʒoTʃó en ʒefe-n
 PST-sleep ART dog-PL
 ‘The dogs slept.’

- (2) ʃirisian
xa mira ʃi-faf ao-dami-i
 ART gift ART-boy 3.PST-give-PST
 ‘The boy was given a gift.’

Two other languages were called isolating but otherwise had suppletion on their

⁴ Examples follow the Leipzig Glossing Rules. Abbreviations used: 1/2/3 first/second/third person; ART article; AUX auxiliary; COP copula; DER derivational marker; DET determiner; F feminine; FUT future; IMP imperative; INF infinitive; IO indirect object; M masculine; OBJ object; PL plural; PROG progressive; PST past; Q question marker; SBJ subject; SG singular.

definite articles or pronouns. Examples of analytical and potentially polysynthetic choices are given in (3) and (4), respectively.

- (3) Biwəo
v so vof ʌon pu:m
 ART PL dog sleep PST
 ‘The dogs slept.’

- (4) Amsaϕ
rə-fæk-wa-erf-i
 DET-water-1.SBJ-drink-FUT
 ‘I will drink some water.’

There were several patterns associated with morpheme ordering. To denote tense, aspect, mood, and number, most languages used either suffixing, or a mix of prefixing and suffixing; no languages demonstrated infixing or circumfixing. A quite intricate morphological instance is exemplified in (5) with subject, indirect object, and tense marking all occurring within the verbal word.

- (5) Emikuza
te-la-suku-zu e-loəli
 PST-1.IO-throw-3.SBJ ART-stick
 ‘She threw the stick at me.’

4.3 Syntax

In regard to word order, the most common preferred orders were SVO with 25 languages and SOV with 12 languages. The remaining 12 languages used the four remaining permutations of S, V, and O. Interestingly, every argument order was represented by at least two languages. Thirty-three groups relied exclusively on word order to distinguish arguments, as seen in (6a) and (6b):

- (6) Soreli
 a. *ts̃ gutt ts̃ nam ts̃ib-e-ts̃ot*
 ART dog ART man bite-DER-PST
 ‘The dog bit the man.’
 b. *ts̃ nam ts̃ gutt ts̃ib-e-ts̃ot*
 ART man ART dog bite-DER-PST
 ‘The man bit the dog.’

Less common choices involved relying on word order as well as case or object marking along with gender or subject agreement on verbs or copulas, to distinguish between arguments. The majority of languages that implemented case marking (five out of six) did so only on their pronouns or definite articles, as seen in (7) and (8), respectively.

- (7) Valadoshalu
pom pi-p va assa

give 3.F-IO the ball
 ‘Give her the ball!’

(8) Wifi

tɛʃi heʃ nɔ̃wɪm tɔ̃whä kãɹɔ̃w wi
 ART.SBJ dog bite ART.OBJ man PST
 ‘The dog bit the man.’

4.4 Semantics and pragmatics

Students were also asked to elaborate on the semantic and pragmatic aspects of their language, including how their language asks questions and makes commands. Twelve languages had an interrogative structure expressed through prosody, generally through a high or rising pitch. Twenty-one languages relied on question particles or affixes, such as in (9), and there was a relatively even split between sentence-initial and sentence-final particles. The remaining languages utilized a combination of prosody and question particles or changed the word order to denote a question, often through auxiliary position, seen in (10).

(9) Iwik

ta miʌa ʉ kiʌin-giʀin
 Q 3.SG.M COP swim-PROG
 ‘Is he swimming?’

(10) Mokivo

pa ti tokazu
 AUX 3.M swim-INF
 ‘Is he swimming?’

The students’ use of certain structures to indicate interrogatives did not entail the use of the same structures to denote imperatives. Thirteen languages used a prosodic approach to denote a command, either through vowel length or a high/falling intonation. Twenty languages utilized either a sentence-final or sentence-initial particle or a verb affix to denote a command, as seen in (11).

(11) Pukia

pa ɲi ead-æp
 bread ART eat-IMP
 ‘Eat the bread!’

The remaining languages either did not specify their imperative structure or utilized word order changes. The majority (88%) of languages deleted the subject of the command, similar to English. A few languages utilized unique phonemes as question particles, such as *Əvado*, which had click phonemes only for the use of interrogative and imperative verb suffixes.

4.5 Writing systems

The majority of groups (92%) did not design a writing system for their conlang, which is

understandable as this was not explicitly specified in the criteria for the project. The groups that did invent a writing system chose a solely alphabetic system similar to the one seen in Figure 4.

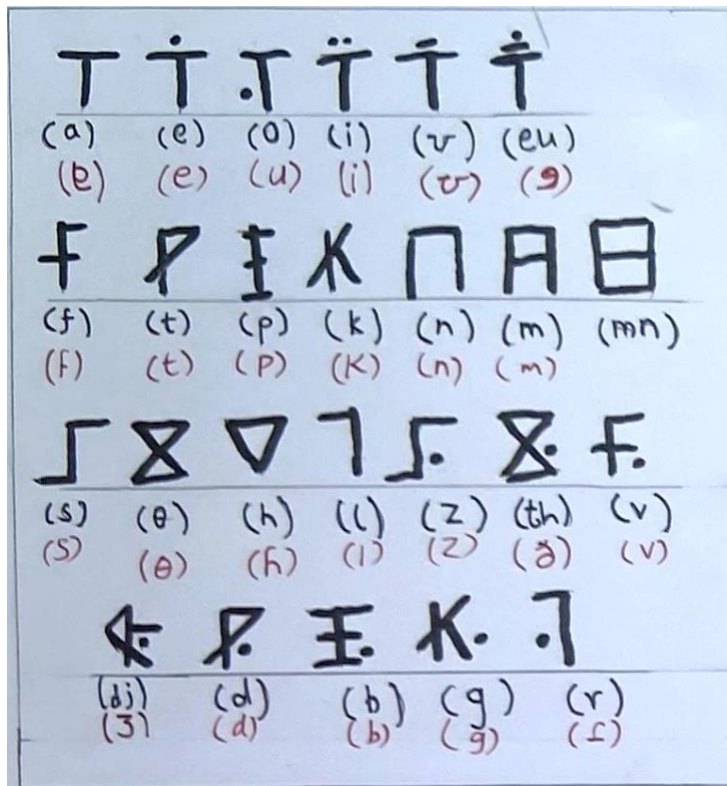


Figure 4: Alphabetic writing system of the conlang Mnah-manese.

4.6 Common mistakes

This section provides evidence for linguistic concepts that students may have failed to gain mastery over and serves as a caution for any instructor who might consider implementing a conlang project as a form of assessment. One mistake that we came across seemed to be rooted in the misunderstanding of a language and its difference from code. A couple of the groups appeared to create conlangs that used English as a morphosyntactic and lexical base but with different orthography or sound structure. Example (12) is an example of a conlang that appears to be inspired by English, except with a different writing system. Example (13) is similar, except it instead places the diphthong /ou/ in place of other vowels and in between consonant clusters and digraphs.

- (12) *Ipɛgφlɔsə*
uħə.ɛ ɪs ʒħə ɡφɪɪ
 ‘Where is she going?’

- (13) *Ongloso*
toʒhoʒe doʒgoʒoʒoʒ soʒloʒoʒoʒoʒ
 ‘The dogs slept.’

Another common error was the misconception of writing versus speech. This was most prevalent in the semantic sections of the students’ presentations. When discussing plain,

interrogative, and imperative structures, five groups did not specify a distinct linguistic difference between the three, and instead stated that the only difference is punctuation, namely question marks and exclamation points, without any mention of spoken language.

Two other mistakes that we encountered were rooted in typological understanding. Out of the 38 agglutinative groups, about 14 of them stated that they were in fact fusional or isolating. However, when presenting their morphology or sentence translations, they failed to present an example of a morpheme with fused meaning or ended up having affixes in their language. A similar instance was seen in argument distinction, where three groups claimed that their language utilized case marking, but did not implement this in their translations and solely relied on word order. Two groups also claimed to have free word order, but their translations had quite rigid word order.

In order to combat these common mistakes from students, future instructors could include more typologically diverse language examples in their course to further steer students away from a rigidly English-based structure. They could also implement mid-term check-ins with student projects to catch any misunderstandings or errors earlier on in the course.

4.7 Final grades

The class size was 243 students across seven sections. The final project had a maximum score of 30 points with the class average being 26 points (87%, or a B+ on our grading scale, $SD = 2.94$). The highest score (28) was adjusted to be 30, the maximum score, so an additional two points were added to all other groups' final scores. The grading for the posters tended towards a liberal interpretation of the rubric, with points only being deducted for egregious errors in linguistic structure or an obvious lack of preparation and or understanding of the assignment.

5 Discussion

The complexity of the above conlangs indicates to us that our students largely met the goals for this course. They demonstrated an understanding of key topics in linguistics by developing robust phonological, morphological, syntactic, semantic, and pragmatic systems. They analyzed language by using these systems to translate example utterances, and practiced critical thinking and active learning throughout this process by managing the interactions between each facet of their language. While Section 4.6 illustrates the areas in which students sometimes failed to grasp the key points of the course, we believe that overall, the students' conlangs reflected a gained knowledge of how languages function outside of the languages they may already have experience with. This is exemplified in the breadth of typological variation seen across the conlangs. It is also reflected within their course evaluations in comments such as, "I never knew that linguistics was this complex" and "[this course] teaches a lot about languages and what languages are comprised of [*sic*] ... from the simplest things about linguistics to the most complex things."

One limitation of this study is that the public engagement of our conference was not quantified. We were unable to collect data on the number of attendees, or conduct interviews with them, partly because the conference was held at an open and central place on campus that allowed for easy engagement and disengagement of the bystanders, and partly because our own focus was on evaluating student presentations. Despite this, we believe that the conlang project was successful as an outreach tool. The conference was held in a central and highly populated area of campus, allowing for students and faculty from the Linguistics department, students' friends from other classes, and even strangers with no connection to the

course to ask the students questions about their conlangs.

After the course ended, we examined the course evaluations to identify which aspects of the conlang project students found difficult. While some students left positive evaluations of the project, stating that it was interesting and brought the course topics together, a number of students also provided feedback on issues they faced while completing the assignment. We identified two main areas for improvement: instruction (Section 5.1) and specificity of the rubric (Section 5.2).

5.1 Student feedback: Lack of direction

One issue that students brought up was a lack of direction. For many students in an introductory class, creating a language from scratch may seem like a daunting task. Multiple students indicated that they needed more active instruction on how to complete the project:

The videos and other resources were helpful to a certain degree but did not fully explain how we were supposed to tackle the project.

I would change the final project or give more instruction.

The final was a project with little to no directions making it difficult to know what to do.

Our discussion sections were primarily focused on reviewing the core linguistic content from the class, with more emphasis placed on the conlang project towards the end of the quarter as the project deadline approached. It would be beneficial for instructors to hold conlang workshops in place of general review sessions and naturally integrate the conlang project into the main lecture material. We also suggest implementing conlang-related assignments to be submitted periodically throughout the quarter in order to monitor students' progress and ensure the project workload is shared fairly across team members.

5.2 Student feedback: Lack of specificity

A few students also mentioned a lack of specificity in the criteria for the project in their course evaluations:

The rubric for the final conlang project was a bit too open-ended and making the necessary items more specific would have made the project more easier.

It was very open ended and we had to figure out alot [*sic*] of it by ourselves without much help.

The project criteria were designed to be specific enough to reflect important features of language and relate back to core concepts taught in the class, but vague enough to give the students creative freedom. Hence, the students were permitted to use any combination of linguistic features as long as their language was consistent. For example, students were required to distinguish between verb arguments, but could do this by using word order, case marking, or agreement, depending on their personal preference. However, without an example to follow it seems as though some students found it hard to know how to begin

constructing a language.

One way to alleviate this issue is to build an example conlang with the students in class. This would give instructors a chance to illustrate exactly how the open-ended criteria can be expanded upon. However, it is possible that students may tend towards using an example conlang as a base, as some of our groups used English as a morphosyntactic and lexical base for their languages. Instructors should try to strike a balance between specificity in instruction and open-ended criteria that allows for greater diversity in the constructed languages.

5.3 Additional challenges

The size of the course may affect what teaching and evaluation methods are feasible for this project. For example, it was difficult to schedule all 243 students to give a presentation on one day. It was also difficult to assess 49 conlangs in a short amount of presentation time. Future instructors should consider the benefits and drawbacks of alternative evaluation methods, such as a paper or write up of the constructed language. Depending on the size of the course, instructors may also consider using different group sizes. In our case, at a group size of five students, some team members seemed to not be actively participating in the work. Smaller groups of two or three could feasibly complete the project on their own, and in an especially small class it may be possible for individual students to develop their own languages.

Class modality is another potential challenge. Adapting the project to online classes, especially asynchronous ones, could be difficult due to the lack of shared spatiotemporal context to work together on the assignment in groups. It may be beneficial to make the project individual in these cases.

6 Conclusion

Based on student feedback, final grades, and its active learning component, conlanging has the potential to be an engaging approach to introductory linguistic education. The choices the groups made in their conlangs largely reflected common language patterns that are both taught in introductory linguistics classes and present in the world's most common languages, including preferred word order, phonological inventory, and morphological processes. Student responses mentioned the thorough understanding needed in order to completely execute this project and have shown that the project was an overall interesting project to partake in which could prove more fruitful with improved organization and in-class workshopping. By making the projects public in the form of a poster presentation, we had an outreach effect on campus members who otherwise would not have engaged with linguistic projects and data.

References

- Bonwell, Charles C. & James A. Eison. 1991. *Active learning: Creating excitement in the classroom* (ASHE-ERIC Higher Education Report no. 1). Washington, DC: George Washington University, School of Education and Human Development.
- Freeman, Scott, Sarah L. Eddy, Miles McDonough, Michelle K. Smith, Nnadozie Okoroafor, Hannah Jordt & Mary Pat Wenderoth. 2014. Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences* 111. 8410–8415.

Peterson, David. 2015. *The art of language creation*. New York: Penguin Random House.

Appendix 1: Conlang criteria and resources

The criteria and resources provided to the students are as follows:

Your poster must include the following:

- Names of the authors
- Statement of author contribution: For each member of the group you should state what they helped with. This could be something like “Abe helped with the phonology of the language; Bob helped with creating the syntax; ...” All members should have contributed to the linguistic aspects of language creation to some degree.

Linguistically, your conlang must satisfy the following criteria:

- General criteria (Hockett design features)
 - Have duality of patterning
 - Have arbitrariness
 - Have discreteness
 - Have semanticity
- Phonetic criteria
 - Create a chart or list sounds/forms (consonants and vowels) of the language
 - Which places and manners of articulation does your consonant inventory use?
 - Are consonant pairs asymmetrical in voicing? (only voiced or voiceless)
 - Phonological criteria
 - Follow the sonority hierarchy or develop such a hierarchy for syllables
 - Have at least one phonological rule and its environment
 - Have at least one example of allophonic variation
 - Have at least one phonotactic constraint
 - Have a list of allowed syllable structures
 - Have at least one meaningful suprasegmental feature
 - For example, is the language tonal? Does it distinguish consonant and/or vowel length?
- Morphological criteria
 - Decide whether the language is agglutinative, polysynthetic, fusional, isolating, ...
 - Have at least three inflectional and derivational morphemes (if not isolating)
 - Do nouns inflect for plural and/or possession?
 - Do verbs inflect for tense? (see agreement in syntactic criteria)
 - Decide on the order of morphemes, if there is more than one attached to the root
- Syntactic criteria
 - Have at least one intransitive, one transitive, and one ditransitive sentence
 - Distinguish arguments of the verbs
 - Free/fixed word order? Case marking? Agreement (number, person, gender, etc.)?

- Have the context-free phrase-structure grammar of the language
- Have an example tree of one sentence
- Semantic and pragmatic criteria
 - Differentiating the speech acts of questions, statements, and commands
 - Have at least one proper name
 - Have at least one common noun
 - Have at least one utterance with truth conditions
 - Have the ability to communicate tense: past, present, future
 - Have the ability to talk about a definite or indefinite entity
- Sociolinguistic criteria
 - Name and describe at least two dialects/varieties of the language and explain at least two linguistic features which distinguish them from each other. When/where are these varieties used? Who speaks them in which contexts?
 - Explain how at least two demographic/identity factors (gender, region, sexual orientation, race/ethnicity, age, etc.) are tied to variation in linguistic performance (phonological, morphosyntactic, lexical variables)
- Minimum sentences to translate
 - ‘The sun is rising.’
 - ‘Eat the bread!’
 - ‘Give her the ball!’
 - ‘She threw the stick at me.’
 - ‘The dogs slept.’
 - ‘I will drink some water.’
 - ‘Is he swimming?’
 - ‘Get up!’
 - ‘The dog barked at me.’
 - ‘The dog bit the man.’
 - ‘The man bit the dog.’
 - ‘The boy was given a gift.’
 - ‘He made me eat the cake.’
 - ‘Please help me with the bags.’
 - ‘Where is she going?’
 - ‘She threw the ball to me in the park.’

External resources:

- <https://www.reddit.com/r/conlangs/>
- <https://www.zompist.com/kit.html>
- <https://ocw.mit.edu/courses/linguistics-and-philosophy/24-917-conlangs-how-to-construct-a-language-fall-2018/lecture-notes/>
- <https://sites.google.com/view/conlangs-university/>
- Peterson Google Talk “Create a language in one hour”:
<https://youtu.be/StcSHmBZj2k>
- <https://fiatlingua.org/>
- <https://sites.google.com/view/the-pit/home>

Appendix 2: Conlang poster rubric

The rubric used to grade each poster presentation given to the students is as follows:

Linguistic criteria: 20 points total

Score of 0 to 5 points: Poor

Students' explanations of linguistic structure are unacceptable, one or more subareas may be completely unaddressed by the content on the poster, it is clear that students neither understood the assignment nor clearly grasped the concepts covered in the course, required sentences are either entirely absent or only partially provided.

Score of 6 to 10 points: Needs improvement.

Students fail to sufficiently explain all levels of linguistic structure in their constructed language, one area may not be mentioned by the poster, some elements of the constructed language might suggest that students did not understand some of the core concepts that were covered by the course, some required sentences may not be translated, or glosses not included.

Score of 11 to 15 points: Satisfactory

Students sufficiently explain all levels of linguistic structure, some logical flaws may be noticed at one or more levels of structure, but none critically affect the language as a whole, all required sentences are provided, but glosses may be missing.

Score of 16 to 20: Excellent

Students excel at explaining all levels of linguistic structure in their constructed language and the project clearly shows deep engagement with the course material, all levels of the language fit together logically, all sentences are translated, and glosses are provided for each.

Poster design: 5 points total

Score of 0 to 2 points: Poor

Students either do not have a poster or there is little required information provided on the poster.

Score of 3 to 4 points: Satisfactory

Poster may have some issues with design and some required information may be left out.

Score of 5 points: Excellent

Poster is well designed and clearly explains all required criteria for the assignment.

Presentation skills: 5 points total

Score of 0 to 2 points: Poor

Students are not able to answer basic questions about the structure of their language or do not attempt to explain features, students may clearly struggle with presenting.

Score of 3 to 4 points: Satisfactory

While some students may speak more than others, group members share the role of presenter somewhat equally and are able to answer most questions about their language. Some issues associated with nervousness may affect overall presentation, but do not distract from overall presentation.

Score of 5 points: Excellent

Group members share the role of presenter evenly and respond quickly and thoughtfully to questions demonstrating not only an in-depth knowledge of course material, but also how it applies to their own constructed language.