

**“The essence of the language is in texts”:
Attitudes towards and uses of texts in language revitalization**

BLC Fellows Forum ★ December 4, 2020
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1 Attitudes towards aspects of language revitalization

1.1 Importance of language revitalization

1. THEMES AND SUBTHEMES	# (%)	EXAMPLE SURVEY RESPONSES
1. CONNECTIONS		
a. Identity	38 (37.6)	<i>Language revitalization is important to ensure that our languages are spoken for eternity and we maintain our indigenous identities.</i>
b. Culture	27 (26.7)	<i>Language is a vehicle of culture, history and heritage.</i>
c. Heritage	13 (12.9)	<i>Some people want to learn, or learn about, an endangered language as part of their own heritage.</i>
d. History	13 (12.9)	<i>Language carries culture and history and uniquely codes perspectives on both.</i>
e. Ancestors	12 (11.9)	<i>It seems that people within the community working towards revitalizing/learning the language feel that it facilitates an increased connection to their ancestors.</i>
f. Land	4 (4.0)	<i>It is important that we are recognizable to our old people, spiritual beings, and lands, and that we speak for these and future generations.</i>
2. SOCIAL JUSTICE		
a. Social Justice	27 (26.7)	<i>It is a basic human right to speak the language of your choice, including ancestral languages.</i>
b. Empowerment	10 (9.9)	<i>Increases the agency and prestige of the community whose language is threatened.</i>
c. Prestige	9 (8.9)	<i>Importance of decolonizing the linguistic landscape, preserving linguistic and cultural diversity, revalorizing indigenous languages.</i>
d. Sovereignty	4 (3.9)	<i>[Language revitalization] contributes to an individual and community sense of self thus further contributing to well-being and self-determination...</i>
3. EPISTEMOLOGY		
a. Worldview	21 (20.8)	<i>Language is a lens through which we can better understand and view a people and their culture, history, and way of life.</i>
b. Knowledge	14 (13.9)	<i>Revitalization provides access to language which provides access to other knowledge systems...</i>
4. DIVERSITY		
	21 (20.8)	<i>Linguistic diversity is as important as biodiversity, as languages are "species" of social interaction and human knowledge systems.</i>
5. WELLBEING		
	19 (18.8)	<i>Having access to the language increases self-esteem and health.</i>
6. CONSERVATION		
	21 (20.8)	<i>It is a way to preserve not only language but also history, culture, and knowledge.</i>

Table 1: Themes and subthemes of responses to why language revitalization is important (n = 101).

1.2 Importance of having a writing system

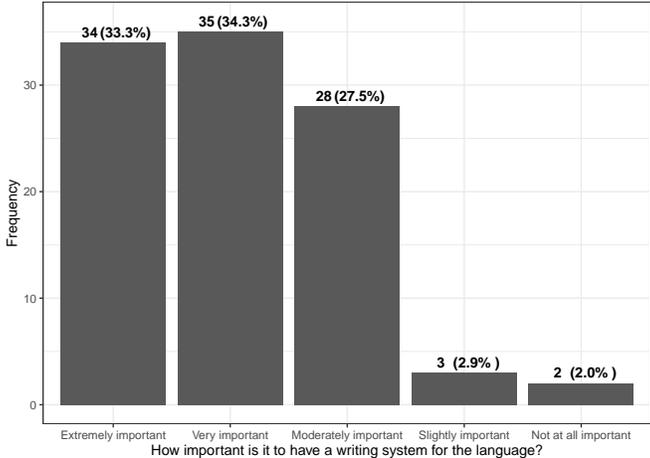


Figure 1: Frequency of survey respondents' perceived importance of having a writing system for the language.

1.3 Importance of a teaching literacy

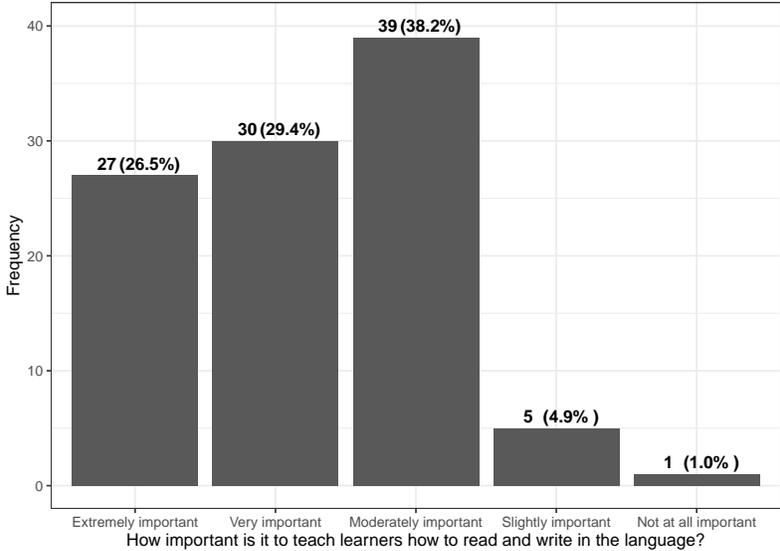


Figure 2: Frequency of survey respondents' perceived importance of teaching learners how to read and write in the language.

1.4 Appropriateness of digital technology

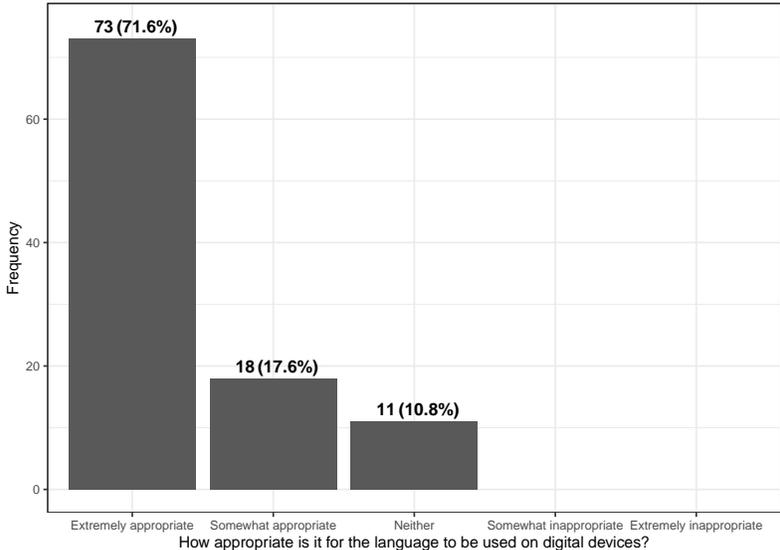


Figure 3: Frequency of survey respondents' perceived appropriateness of using the language on digital devices.

1.4.1 Appropriateness of incorporating aspects of dominant culture

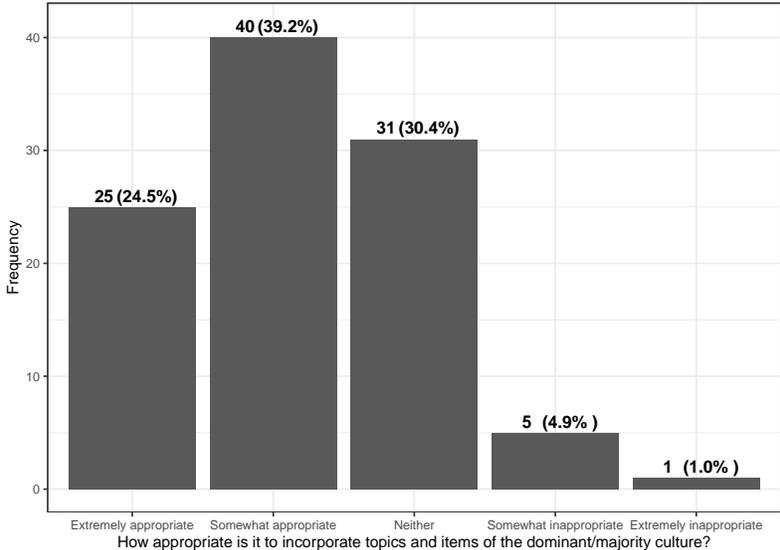


Figure 4: Frequency of survey respondents' perceived appropriateness of incorporating themes and artifacts of the dominant or majority culture in language revitalization.

1.5 Importance of speaking the language in the same way as the ancestors

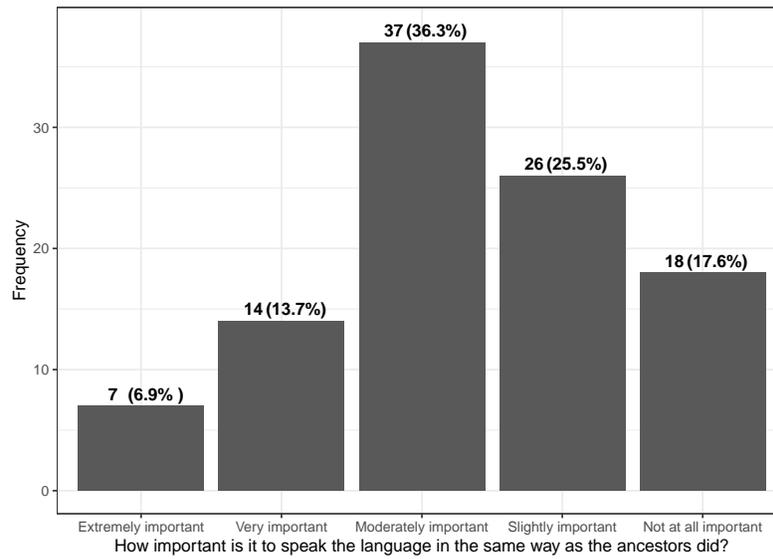


Figure 5: Frequency of survey respondents' perceived importance of speaking the language in the same way as the ancestors.

- According to the Mann-Whitney U Test, those who consider the language as part of their own heritage ($\mu = 2.878$, $\sigma = 1.187$) are significantly different ($W = 1678.600$, $p = 0.001$) in perception of importance of speaking in the same way as ancestors ($\mu = 3.617$, $\sigma = 0.976$).

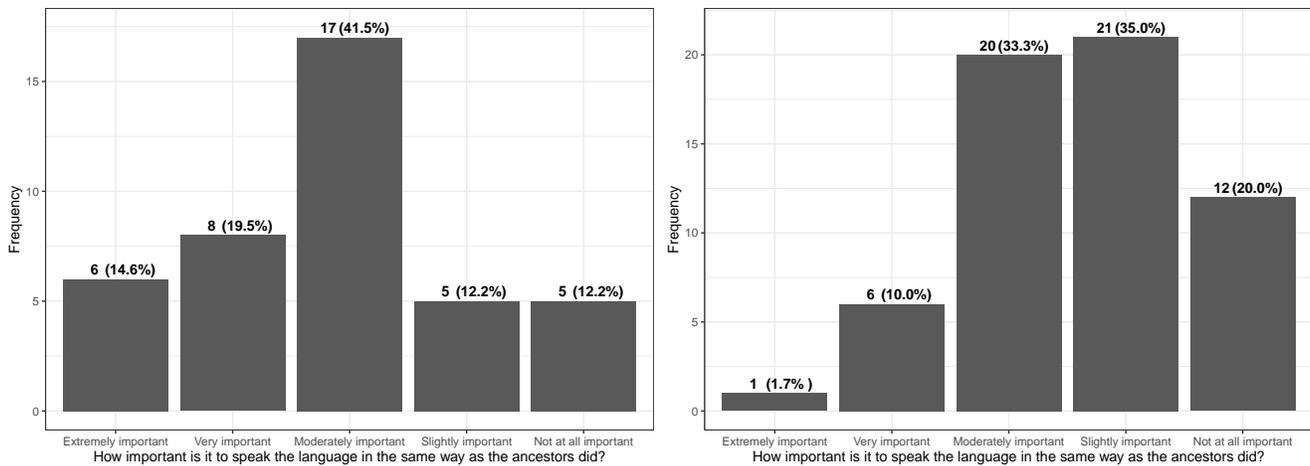


Figure 6: Frequency of perceived importance of speaking the language in the same way as the ancestors by community members (left) and non-community members (right).

1.5.1 Importance of keeping language free from influence of dominant language

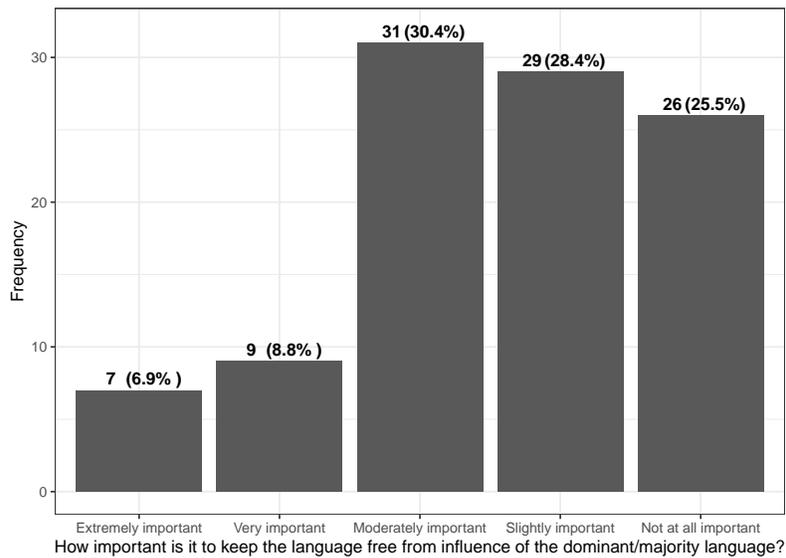


Figure 7: Frequency of survey respondents' perceived importance of keeping the language free from influence of the dominant or majority language.

- According to the Mann-Whitney U test, respondents who consider the language to be their heritage language ($\mu = 2.951$, $\sigma = 1.182$) significantly differ ($W = 1819$, $p < 0.001$) in their perceptions of the importance of keeping the language free from the dominant language ($\mu = 3.967$ $\sigma = 0.956$).

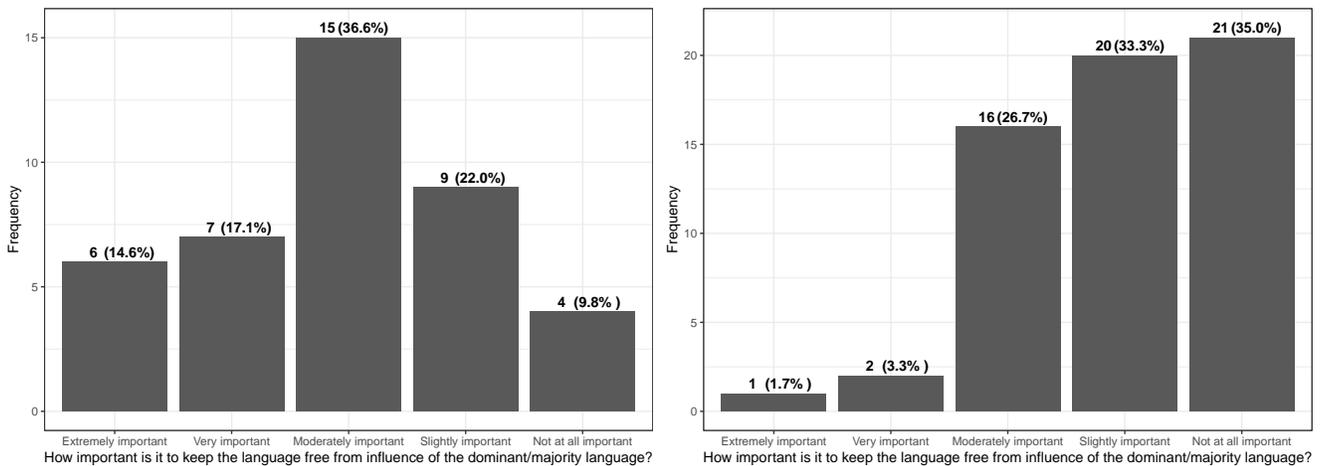


Figure 8: Frequency perceived importance of keeping the language free from influence of the dominant or majority language by community members (left) and non-community members (right).

1.5.2 Importance of speaking the language all the time

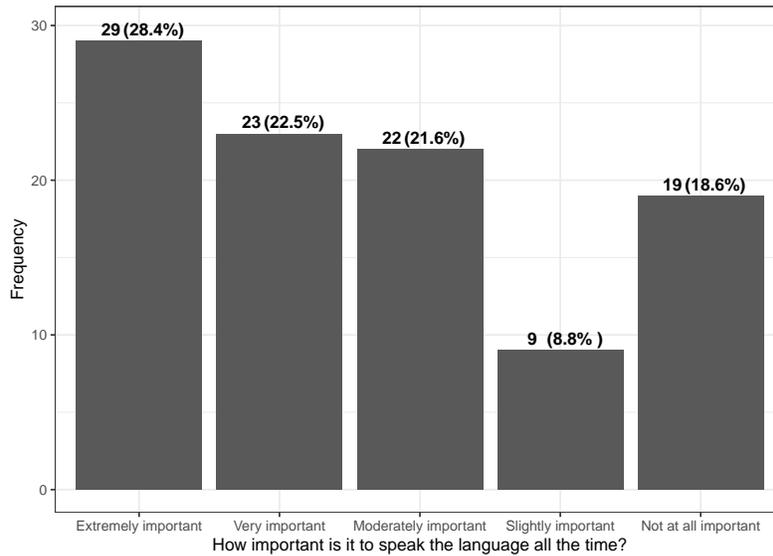


Figure 9: Frequency of survey respondents' perceived importance of speaking the language all the time.

- According to the Mann-Whitney U test, those who associate the language as part of their own heritage ($\mu = 2.024$, $\sigma = 1.172$) significantly differ in their perceptions on the importance of speaking the language all the time ($W = 1733.5$, $p < 0.001$) than those who do not ($\mu = 3.067$, $\sigma = 1.460$).

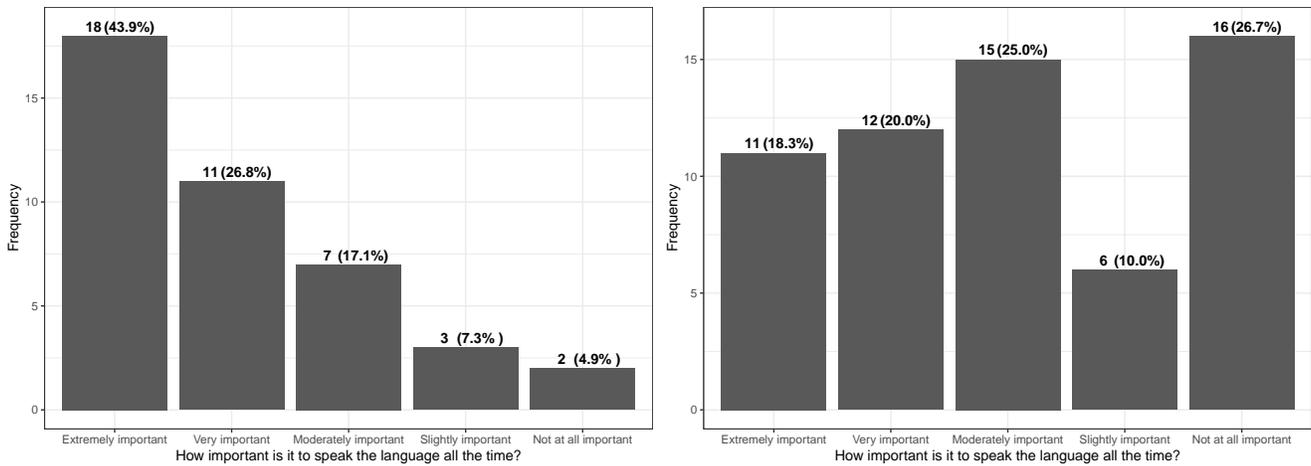


Figure 10: Frequency of perceived importance of speaking the language all the time by community members (left) and non-community members (right).

		1.	2.	3.	4.	5.	6.	7.
1. ORTHOGRAPHY	CORR. SIG.	—						
2. LITERACY	CORR. SIG.	0.821 ***	—					
3. ANCESTORS	CORR. SIG.	0.280 **	0.228 *	—				
4. DIGITAL	CORR. SIG.	0.248 **	0.288 **	N.S.	—			
5. CULTURE	CORR. SIG.	0.216 *	0.264 **	N.S.	0.306 **	—		
6. PURITY	CORR. SIG.	0.320 ***	0.322 ***	0.596 ***	N.S.	N.S.	—	
7. SPEAKALLTIME	CORR. SIG.	N.S.	N.S.	0.460 ***	N.S.	N.S.	0.492 ***	—

Table 2: Spearman’s rank correlation coefficient (CORR.) and significance levels (SIG.) across 1. Importance of having a writing system (ORTHOGRAPHY), 2. Importance of teaching literacy (LITERACY), 3. Importance of speaking the language in the same way as the ancestors (ANCESTORS), 4. Appropriateness of use of digital technology (DIGITAL), 5. Appropriateness of incorporating aspects of the dominant culture (CULTURE), 6. Importance of keeping the language free from influence of the dominant language (PURITY), and 7. Importance of speaking all the time (SPEAKALLTIME). * $p \leq 0.05$. ** $p \leq 0.01$. *** $p \leq 0.001$. N.S.: non-significant.

1.5.3 Importance of texts in language revitalization

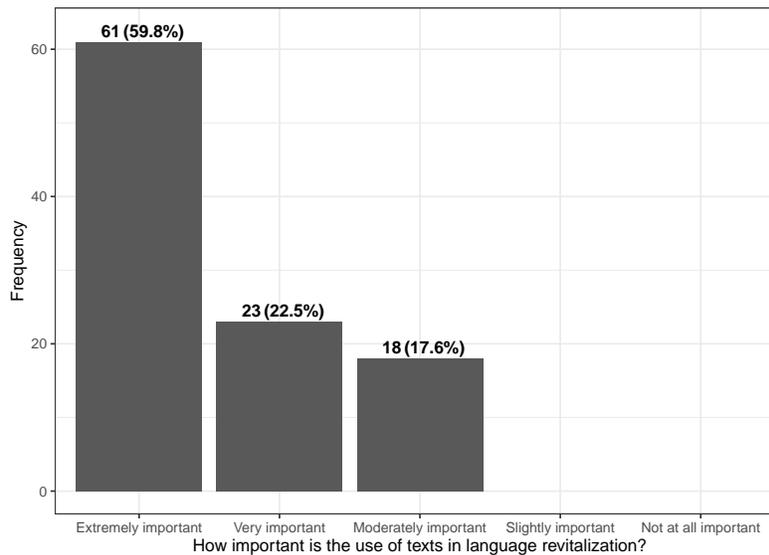


Figure 11: Frequency of survey respondents’ perceived importance of using texts in language revitalization.

	ORTHO.	LITERACY	ANCESTORS	DIGITAL	CULTURE	PURITY	SPEAKALLTIME
CORR.	0.408	0.458	0.244	N.S.	N.S.	0.245	N.S.
SIG.	< 0.001	< 0.001	0.014			0.014	

Table 3: Spearman’s rank correlation coefficient (CORR.) and significance levels (SIG.) with perceived importance of using texts in language revitalization (n = 101).

THEMES AND SUBTHEMES	# (%)	EXAMPLE SURVEY RESPONSES
1. LANGUAGE LEARNING		
a. Language Learning	31 (35.2)	<i>[Texts] help students learn and practice the language. It is essential to language learning.</i>
b. Literacy	11 (12.5)	<i>Depends on the language, but our language has an old written literary tradition so writing has to be part of the revitalization.</i>
c. Material Development	5 (5.7)	<i>Texts support the creation of lessons for use in teaching/learning the language.</i>
d. Independent Study	3 (3.4)	<i>The availability of texts gives any learner the freedom to study and practice independently of other individuals.</i>
2. CONSERVATION		
a. Conservation	19 (21.6)	<i>Even in today's digital world, texts are the most permanent form in which a language can be represented</i>
b. Lack of L1 Speakers	13 (14.8)	<i>In language contexts such as mine where there are no L1 speakers remaining, working from texts is about our only option for moving forward with revitalization.</i>
c. Prestige	10 (11.4)	<i>[Texts] bring "validity" or "prestige" to the language.</i>
d. Motivation	8 (9.1)	<i>Using and collecting texts allows people to see that these things are valued in the community, hopefully inspiring people to speak the language more.</i>
3. CONTEXT		
a. Discourse	29 (33.0)	<i>Texts provide examples of language in use.</i>
b. Registers	13 (14.8)	<i>I think that the texts can serve as a way of knowing different kinds of speech in the language.</i>
4. AUTHENTICITY		
a. Authenticity	13 (14.8)	<i>I think texts are important so that the revitalized language reflects the way that people actually use the language rather than an idealized version of it.</i>
b. Older Speech	7 (8.0)	<i>[Texts] provide insight into how the language was spoken in the early 1970s.</i>
5. LANGUAGE DESCRIPTION		
	7 (8.0)	<i>[Texts] can show grammatical features that may not present themselves in words or simple phrases, as well as providing a wealth of new vocabulary.</i>
6. CULTURE		
	17 (19.3)	<i>[Texts] can teach culture and traditions alongside language.</i>

Table 4: Themes and subthemes of responses to why the use of texts is important in language revitalization (n = 88).

- An ordinal logistic regression model, shown in Table 6, is used in this study since the dependent variable (i.e. important of text) is not only categorical, but follow an order; that is, ‘Extremely important’ is a higher category than ‘Moderately important’.¹ The model provides n-1 intercepts where n is the number of categories in the dependent variable; despite there being more than one intercept, the slope values remain the same (i.e. the proportional odds assumption).
- The model is fitted with three predictors. The first predictor is the numerical variable ImportanceLiteracy which refers to perceptions of the importance of teaching literacy and has been recoded in the following way: 1 = Extremely important, 2 = Very important, 3 = Moderately important, 4 = Slightly important, and 5 = Not at all important. The second predictor is Context which is binary (categorical) variable and refers to whether or not the theme Context was mentioned in responding to the question ‘Why do you think the use of texts is important in language revitalization?’ The third predictor is Newspaper, which is also a binary variable, and is based on the presence or absence of newspapers in the language.
- The intercepts and coefficients associated with the model are interpreted in the following ways:
 - (a) The numerical variable ImportanceLiteracy – with one unit increase in ImportanceLiteracy the log of odds of having a positive perception about texts decreases by 1.118. In this context, a unit increase in ImportanceLiteracy means having a more negative perception of literacy.² As such, as perceptions of literacy decreases, so too does

¹In principle, it is possible to also fit a linear regression model to determine factors influencing perceived importance of text. However, doing so violates the assumption on normally distributed residuals.

²Simply put, the log of odds is the log of the ratio of the probability of success to the probability of failure, or in mathematical notation $\ln\left(\frac{P(\text{success})}{P(\text{failure})}\right)$.

the importance of texts.

- (b) The categorical variable Context:Yes – respondents who mentioned context in responding to why texts are important, as opposed to those who did not mention context, is associated with a higher likelihood of having a positive perception of texts.
- (c) The categorical variable Newspaper:Yes – respondents who indicated that newspapers exist for the language, as opposed to those who indicated that newspapers do not exist for the language, is associated with a higher likelihood of having a positive perception of texts.
- (d) The intercept ImportanceText:3 | ImportanceText:2 is interpreted as the log of odds of perceiving texts as moderately important versus perceiving texts as very or extremely important.
- (e) The intercept ImportanceText:2 | ImportanceText:1 is interpreted as the log of odds of perceiving texts as very important versus perceiving texts as moderately or extremely important.

	ESTIMATE	STD. ERROR	t-VALUE	Pr(> t)	
INTERCEPTS:					
ImportanceText:3 ImportanceText:2	-3.796	0.765	-4.962	< 0.001	***
ImportanceText:2 ImportanceText:1	-2.01	0.692	-3.324	< 0.001	***
COEFFICIENTS:					
ImportanceLiteracy	-1.118	0.276	-4.054	< 0.001	***
Context:Yes	1.707	0.524	3.256	0.001	***
Newspaper:Yes	1.582	0.797	1.984	0.047	*

Table 5: Coefficients for the ordinal logistic regression predicting perceived importance of the use of texts in language revitalization (n = 83) using the `polr` function found in the `MASS` package in R. All assumptions of the regression model have been checked and satisfied; the assumption of proportional odds was checked using the Brant test via the `brant` package in R.

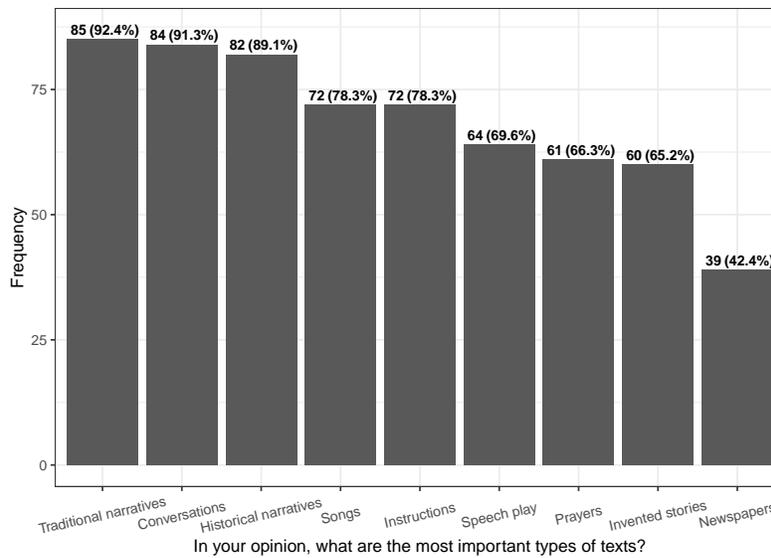


Figure 12: Frequency of the most important text types according to the survey respondents. Note that the observed counts for each text type is divided by the sample size (n = 92).

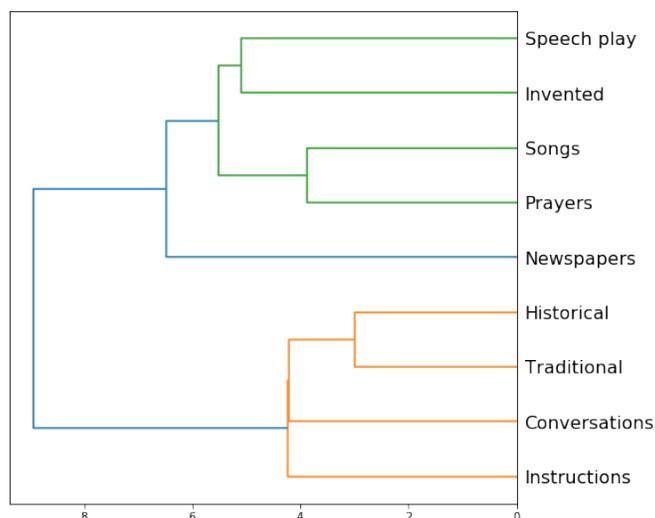


Figure 13: Resulting dendrogram based on a hierarchical cluster analysis with Ward’s method using the SciPy library in Python. Dissimilarity is calculated according to Euclidean distance.

2 Prospects of using texts in language revitalization

SUBTHEME	CURRENT # (%)	OTHER # (%)	EXAMPLE SURVEY RESPONSES
a. Text Development	19 (22.9)	18 (26.5)	<i>Personal narratives and staged conversations are being recorded and archived</i>
b. Corpus Development	18 (21.7)	3 (4.4)	<i>we have chunked recordings and organised them into a database around topic, sub-topic and language function to make the recordings more available to beginner learners</i>
c. Material Development	7 (8.4)	9 (13.2)	<i>quoting examples for language learning books</i>

Table 6: Subthemes of the RESOURCE DEVELOPMENT theme in survey responses on current uses (n = 83) and other uses (n = 68) of texts in language revitalization.

SUBTHEME	CURRENT # (%)	OTHER # (%)	EXAMPLE SURVEY RESPONSES
a. Language Learning	41 (49.4)	25 (36.8)	<i>Improve vocabulary and sentence cohesion.</i>
b. Literacy	14 (16.9)	3 (4.4)	<i>[Texts] are used in adult literacy programs.</i>
c. Culture and History	10 (12.0)	12 (17.6)	<i>Learn about history of the people, traditional knowledge and beliefs.</i>

Table 7: Subthemes of the LEARNING theme in survey responses on current uses (n = 83) and other uses (n = 68) of texts in language revitalization.

SUBTHEME	CURRENT # (%)	OTHER # (%)	EXAMPLE SURVEY RESPONSES
a. Listening	16 (19.3)	2 (2.9)	<i>Listening exercises for new learners in high school</i>
b. Reading and Recitation	10 (12.0)	6 (8.8)	<i>There is an annual language festival where texts are recited.</i>
c. Songs	8 (9.6)	3 (4.4)	<i>composing and singing songs, mostly translations of existing country and western music</i>
d. Staged Conversations	7 (8.4)	8 (11.8)	<i>Used as a basis for a bilingual play performed by children</i>
e. Story Creation	6 (7.2)	3 (4.4)	<i>Some stories have been written by children in English and then translated by elders and made into bilingual booklets.</i>
f. Reference Tool	4 (4.8)	4 (5.9)	<i>to mine them for words and sentences</i>
g. Discussions	4 (4.8)	2 (2.9)	<i>Shared and discussed during community classes.</i>
h. Translation	4 (4.8)	—	<i>Used for building literacy, learning how to translate, learning how to transcribe.</i>

Table 8: Subthemes of the LEARNING STRATEGY theme in survey responses on current uses (n = 83) and other uses (n = 68) of texts in language revitalization.

SUBTHEME	CURRENT # (%)	OTHER # (%)	EXAMPLE SURVEY RESPONSES
a. Language Description	14 (16.9)	2 (2.9)	<i>These texts have served to analyze the linguistic structure of the language on a wide range of descriptive levels including phonology, morphology, and syntax.</i>
b. Accessibility	13 (15.7)	2 (2.9)	<i>Written texts (recorded in the 1960s) are currently being translated and prepared</i>
c. Promoting Awareness	12 (14.5)	10 (14.7)	<i>Producing a wide variety of circulated texts of various genres has been a focus of language planning</i>
d. Digital Presence	7 (8.4)	13 (19.1)	<i>As digital materials for learners and speakers. In modern communication, such as SMS, FB and other online venues.</i>
e. Conservation	6 (7.2)	3 (4.4)	<i>Texts are also created for the sake of posterity, for preserving the culture from one generation to the next.</i>
f. Linguistic landscape	—	4 (5.9)	<i>They can be used for creating signs in the language (street signs, signs around the office, signs at the restaurant or other public spaces). Used for labelling items around the home to develop vocabulary. Used for community posters or flyers.</i>

Table 9: Subthemes of the LANGUAGE MAINTENANCE theme in survey responses on current uses (n = 83) and other uses (n = 68) of texts in language revitalization.

THEME	CURRENT # (%)	OTHER # (%)	EXAMPLE SURVEY RESPONSES
RELIGION	9 (10.8)	—	<i>Texts of the New Testament are used in church services.</i>

Table 10: The RELIGION theme in responses (n = 83) to how texts are currently being used in language revitalization.