Evaluating the Accessibility of Digital Resources for Nǀuu Language Revitalisation: The Study of Internet and Social Media

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ABSTRACT

The rapid growth of the internet and social media platforms has led to the acceptance of Artificial Intelligence (AI) and the Fourth Industrial Revolution (4IR) in exploring ICT-based solutions for revitalising indigenous languages, such as the Nǀuu language. This study sought to evaluate the accessibility of material on the internet and social media to revitalise the Nǀuu language. Linguists, members of the ≠Khomani San community, and scholars expressed enthusiasm to actively preserve the Nǀuu language. Using a qualitative methodology and a case study design, the study recruited sixteen participants with a National Qualification Framework (NQF) level 8 and higher in African Languages, Linguistics, and Language Practice. The results showed that social media and internet platforms do not readily provide the resources required to revitalise the Nǀuu language. While most participants could not find any Nǀuu language language learning resources on social media sites, those who could access preferred videos with pronunciation coaching. These results suggest that more language learning resources should be broadly available and visible across various social media platforms and the internet to ensure that people are exposed to the Nǀuu language and support their study of it. This study contributes to scholarship by emphasising accessibility problems for Nǀuu language materials online and arguing for more structured, community-driven digital tools to facilitate language revitalisation.

Keywords: Nluu, ≠Khomani San, Language Revitalisation, Language Learning Material, Internet

INTRODUCTION

According to Statista, as of 2024, the internet has 5.35 billion users and social media 5.04 billion.[1] South Africa accounts for 43.34 million internet users and 26 million social media users.[2] Looking at the usage of both the internet and social media platforms usage and accessibility, taking advantage of these platforms in revitalising endangered languages such as the Nǀuu language of ≠Khomani San the in order to revitalise it.

The ≠Khomani San are classified under the San ethnic group. San people have lived in the Southern African sub-continent the longest, thus, making them the aboriginal people in Southern Africa. They further state that there is archaeological evidence that supports the claim that the San people

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[1] A. Petrosyan, " Data Breaches Worldwide," Statista, 2023, https://www.statista.com/topics/11610/databreaches-worldwide/.
[2] "Digital Population in South Africa as of January 2024," Statista, February 23, 2024.

occupied the Southern African sub-continent first.[3] Their occupation of the Southern African sub-continent region dates back over 20,000 years ago.[4] There is evidence supporting that the San people are regarded as "genetic Adams", that is, where all people can be able to track their genetic heritage. The San people descended from a common ancestor, but they were split into numerous groups and maintained different linguistic identities. They called themselves by the names of their respective groups, such as ǁGana, !Xóõ, Xun, Haiǀǀom, Juǀ'hoansi, ǁAni, Tshua, Khwe, !Ui, Gǀwi, ǁXekgwi, Naro and ≠Khomani which mostly refer to as "first people", "just people" or "real people". These groups shared the hunter-gatherer lifestyle and some of the physical attributes. Their languages shared unique click sounds and tonal variations.[5]

In 1995, the ≠Khomani San launched a land claim, and subsequently, in March 1999 the land claim's first phase was completed.[6] The government returned back farmland of about 40,000 hectares in Kalhari Gemsbok National Park.[7] The land had six farms, which were to be specifically used to develop the ≠Khomani San community. To successfully win the claim, they were able to prove through stories that were told by the elders who still could remember the language spoken and specific details about the land, which proved that indeed they were the original inhabitants. The language they said they spoke there was Nǀuu.[8] Subsequently, after the land was successfully returned to them, revitalisation efforts started with the aim of saving Nǀuu.[9]

Spoken in the Northern Cape area of South Africa, Nǀuu is an indigenous click language and the last surviving language of the !Ui family. Now extinct speakers of Nǀuu and the other!Originally across most of today's South Africa, !Ui languages including ǀXam, ≠Ungkue and ǁXegwi. Nǀuu or Nǀǀng falls under the Khoisan group, which has several languages severely endangered.[10] In the 1970s, the Nǀuu was prematurely declared extinct.[11] Twenty elderly speakers located in the Northern Cape revealed proficiency in the Nǀuu language during the late 1990s.[12] Throughout the years, a number of these speakers died.[13] Efforts by the ≠Khomani community, researchers and linguists have been made to save the language . As of March 2023, the last remaining native speaker of the Nǀuu language was Katrina Esau. The University of Cape Town bestowed an honorary Doctorate in Literature for her efforts in trying to revitalise the Nǀuu language and also language her contribution to language studies.[14]

Language revitalisation is regarded as a solution to a dying language. Language death is when a language loses all its native speakers. When a language does not have native speakers, it becomes impossible for it to be passed on to future generations, thus resulting in language death. It may continue to exist through writing and video or sound archives, but unless it has people who speak it fluently, it will not be regarded as a 'living language'. Even if a language has a single speaker, with no one else to talk to, it is still regarded as a dead language.[15]

Although various initiatives have been undertaken to record the Nǀuu language and make it available via digital channels, little study has been done on how easily the community most in need of these materials could access them. The ≠Khomani San people are in danger of losing their language legacy without adequate access. This study seeks to close this void by evaluating the present situation of digital resources and suggesting approaches to increase their availability.

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[3] Willemien Le Roux and Alison White, *Voices of the San: Living in Southern Africa Today* (Kwela Books, 2004).

[4] Hilary John Deacon and Janette Deacon, *Human Beginnings in South Africa: Uncovering the Secrets of the Stone Age* (New Africa Books, 1999).

[5] Le Roux and White, *Voices of the San: Living in Southern Africa Today*.

[6] Robert Fleming Puckett, "The Strange Case of the Landed Poor: Land Reform Laws, Traditional San Culture, and the Continued Poverty of South Africa's ≠Khomani People" (Oxford University, 2013).

[7] Steven Robins, *NGOs, 'bushmen'and Double Vision: The Khomani San Land Claim and the Cultural Politics of'community'and'development'in the Kalahari.*, 2002.

[8] Roger Chennells, "The Khomani San of South Africa," *Indigenous Peoples and Protected Areas in Africa: From Principles to Practice*, 2001.

[9] Le Roux and White, *Voices of the San: Living in Southern Africa Today*.

[10] Sheena Shah et al., "Writing for Speaking: The Nǀuu Orthography," *Creating Orthographies for Endangered Languages*, 2017, 109–25.

[11] Chennells, "The Khomani San of South Africa."

[12] J Edward Chamberlin and Levi Namaseb, "Stories and Songs across Cultures: Perspectives from Africa and the Americas," *Profession*, 2001, 24–38.

[13] Le Roux and White, *Voices of the San: Living in Southern Africa Today*.

[14] Bonny Sands, Andrew Harvey, and Richard Griscom, "Reconnecting through Language in Africa," *Living Languages* 2, no. 1 (2023): 178–221.

[15] John Holm, *An Introduction to Pidgins and Creoles* (Cambridge University Press, 2000).

The study therefore seeks to address the following research question:

➢ To what extent is the N|uu language material accessible on the internet or social media?

This study's main objective is to assess how easily N|uu language resources accessible online could be used. Furthermore, the study aims to pinpoint the main obstacles preventing access to these resources and propose doable remedies to improve the availability and usage of digital resources for the revival of the N|uu language.

LITERATURE REVIEW

The Resurgence of the N|uu language

Languages used by the San were abandoned and attributed to the premature declaration of the N|uu language, which he refers to the language as the ≠Khomani language as extinct in 1970. Direct descendants of the San people did not even know the children of San, thus leading to the language not being used at all.[16] Nigel Crawhall, along with one of the N|uu language speakers who was one of the speakers rediscovered, went to a radio station and asked speakers who spoke N|uu to reveal themselves. During the 1990s, this action led to 20 elderly N|uu speakers, all of whom were in the Northern Cape Province being discovered.[17] As the years progressed, these speakers died.[18] Knowledge related to the language was documented and transcribed. One of the last speakers to die was Simon Suals in June 2021, leaving Katrina Esau, also known as Ouma Geelmeid, as the last native speaker of the N|uu language.

There are several names that are used to refer to the N|uu language. Languages such as N|huki appeared on, |Nu , N|usa and N|uusaa/ N|usa, but Shah and Brenzinger maintain that none of these languages refer to N|uu. Only N|huki, which has grammar published, uses a normalised version of the N|uu language.[19]

Contributing factors to death and language endangerment of Khoi and San languages

Colonisation is defined as a direct and overall domination of a certation country dominating another one, with the country that is dominating having power over the country being colonised.[20] Colonisation had a great impact on the way local languages are distributed. It contributed to the extinction and severe endangerment of not only the Khoi and San languages but also numerous other languages. Additionally, colonisation contributed to the distribution of local languages. During the 19th century in South Africa, local Khoi and San groups or tribes were greatly impacted in their daily lives and how they used languages. The Europeans only had one goal and that was to 'make' their profits. They then divided the African continent without considering how this would affect people and their respective languages. The direct result of this was the existence of new borders that divided ethnic tribes that were established by the Europeans.[21] This had several negative implications that negatively affected languages, including separate language development, which subsequently led to the development and creation of other branches. The status of these languages was lowered because they deemed them not to be real languages and "ugly" due to the click sounds, thus forcing them to abandon their languages and adopt European languages.[22] In South Africa, the Afrikaans language was then adopted by a large number of Khoi and San people who abandoned their languages.[23]

Digital Resources and Endangered Languages

The use of digital resources in the revitalisation of endangered languages has enabled people who speak these languages to solidify their positions, make their languages and presence known and connect with people from the diaspora. These initiatives may include low-tech media and high-tech media. Low-tech media includes DVDs, videos, film festivals and movies with captions. Television language classes,

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[16] Chennells, "The Khomani San of South Africa."

[17] Chamberlin and Namaseb, "Stories and Songs across Cultures: Perspectives from Africa and the Americas."

[18] Shah et al., "Writing for Speaking: The N|uu Orthography."

[19] Christopher Collins and Levi Namaseb, *A Grammatical Sketch of N|uuki with Stories* (Rüdiger Köppe Verlag, 2011).

[20] Stephen Ocheni and Basil C Nwankwo, "Analysis of Colonialism and Its Impact in Africa," *Cross-Cultural Communication* 8, no. 3 (2012): 46–54.

[21] Adekunle Ajala, "The Nature of African Boundaries," *Africa Spectrum*, 1983, 177–89.

[22] Le Roux and White, *Voices of the San: Living in Southern Africa Today*.

[23] Nigel Crawhall, "Reclaiming Language and Identity," *Cultural Survival Quarterly* 26, no. 1 (2002): 49–51.

government television stations and programs like soap operas are included. Lastly, media such as comic books, banners and newspapers are also included.

High-tech media includes smartphones. Smartphones can include items such as mobile applications, language courses, online dictionaries that have audio, electronic flashcards and keyboards. The web is included on smartphones, which includes platforms such as Wikis, online digital libraries, X (formerly known as Twitter) and Facebook groups. Interactive media, interactive games, blogs, video games and crowd-sourcing for language projects are included in high-tech media.[24]

Efforts of language revitalisation that utilised the internet

In this section, efforts of language revitalisation that used the internet in their countries are discussed:

Mohawk

The English-only model in the United States has led to the loss of numerous languages, particularly indigenous Native American languages. Countries like Australia and New Zealand continue to use this model, causing further suffering and the extinction of Native American languages. Mohawk speakers are revitalising their language through teaching materials, technology, and online applications. Ogoki Learning Lystems offer free, downloadable applications for language learning on phones. A band called Lac du Flambeau from Wisconsin got funding from the government to create podcasts for language learning lessons.

Balinese

Balinese, a Malay-creole spoken in Indonesia, Java, and Bali, has declined due to urbanization and the use of Indonesian and English among Balinese children. Despite this, Balinese migrants continue to use the language in Java and Indonesia. In recent years, social media and crowdfunding have been used to develop teaching materials for Balinese Wiki technology, ensuring that Balinese people continue to contribute to the development of Balinese multimedia and dictionaries. A digital library of the Balinese people can be accessed on Google.[25]

Shiyeyi

Botswana's national languages are Setswana and English, with 26 other languages excluded. The Wayeyi people, who are primarily from the Northwest District, are the majority, but their language use has decreased due to language policy. The Wayeyi people were stripped of their land, cattle, and livestock after being invaded by Batawana. The Shiyeyi language was documented since 1962 by Professor Westphal and Mr. Seidisa. The Kamanakao Association was formed to continue their work and maintain the Wayeyi culture and the Shiyeyi language. In 2015, the Shiyeyi language had over 4,000 speakers and was considered an endangered language by Ethnologue. The Wayeyi people's language is now a minority, with a significant decrease in its use in social settings.[26]

Literacy of San Languages

Languages such as San languages come from oral cultures, these languages are the most revely endangered languages. The development and maintenance of a language literacy is crucial. Some minority languages from underdeveloped countries are not sufficiently codified, which may lead to the decline of these languages. The people from dominant cultures are the ones who are in control of financial resources that can be used for policy issues such as the power to decide which languages can be used in education, and mass publication, and also control the press.[27]

Economic factors play a crucial role when it comes to addressing literacy issues because to solve them money is needed. When one needs to produce books, money is needed; to train teachers, money is needed. Minority groups are generally not in possession of money. For example, only languages that have

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[24] Alicia Pousada, "The Role of the Internet in Language Preservation and Revitalization" (University of Puerto Rico-Rio, 2016).

[25] Pousada, "The Role of the Internet in Language Preservation and Revitalization."

[26] Lydia Nyati-Ramahobo, "Language Development for Literacy: The Case of Shiyeyi in Botswana.," in *Non-Formal Education: New Directions for the Year 2000 Africa Regional Literacy Forum, March 16-20* (Dakar, Senegal: ERIC, 1998).

[27] Lenore A Grenoble and Lindsay J Whaley, "Toward a Typology of Language Endangerment," *Endangered Languages*, 1998, 22–54.

been granted official status in South Africa are taught in schools. These languages were granted status because they have a large number of speakers. The Khoi and San languages are not taught formally in any school, which further motivates Khoi and San communities to assimilate to dominant culture and languages to avoid social and economic exclusion.

Language Revitalisation

To save minority languages belonging to communities such as the ≠Khomani San, innovative programmes have appeared throughout the world intending to revitalise those that are at risk of dying out due to the declining numbers of native speakers. The government, missionaries, linguists, organisations and community members are usually the ones doing the language revitalisation projects. They intervene to encourage the development and use of the language so that the language can have more native speakers to stop it from completely dying out. The main focus typically is to emphasise or to develop written material of the language being revitalised to improve it and to increase the visibility of the language in the public.[28] The nature of these language revitalisation efforts is dictated by the level of endangerment the language faces. The language being revitalised typically is a language that is economically, socially and politically marginalised, such as the N|uu language. These programmes aim to help these minority communities claim economic, social and cultural power or to allow them to maintain their unique ethnic identity.[29] These efforts may focus on fostering an environment that enables the language to be used daily, like formal education and day-to-day conversations. With the resurgence of the N|uu language since the 1990s, the ≠Khomani San community and the speakers of the language have been racing against time to stop the language from completely dying out and to ensure it is revitalised. The African continent is behind with these efforts when you compare it to other continents. The government has contributed immensely to these efforts. Academics, missionaries, individuals and non-government funded organisations have played a vital role.[30] This has also been evident in the revitalisation of N|uu. The ≠Khomani San community, academics and the South African San Institute (SASI) played an important role in the revitalisation of the N|uu language.

THEORETICAL FRAMEWORK
David Crystal's theory of language revitalisation

To investigate the accessibility of language learning material that could be utilised in the revitalisation of the N|uu language on the internet and social media, David Crystal's theory of language revitalisation was used. The process of language decline occurs in three separate stages. The first stage is when the minority faces immense pressure; it may be economic, social, or political to use or to speak the dominant language. This language death may be considered top-to-bottom: this is when a language shift occurs from an environment that is considered to be high-level such as the government. The second stage, the result of the first stage, will result in bilingualism where the more dominant language will be used by the minority. In the last stage, the younger generation or the youth will be more familiar with the dominant language, thus identifying with it and stopping using their own.[31]

David Crystal frequently came across six factors which today are seen as postulates of the theory of language revitalisation aiming to make an endangered language a language that can be utilised even in the future:

1. An endangered language will carry on growing if the people speaking the language improve their prestige within the dominant community.
2. An endangered language will carry on growing if the speakers of the language are able to increase their wealth relative to the dominant community.
3. An endangered language will carry on growing if the speakers of the language are able to increase their status within their community and also in the dominant community's eyes.
4. An endangered language will carry on growing if the language can be accessed in the educational system.

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[28] Bonny Sands, "Language Revitalization in Africa," 2018.
[29] Grenoble and Whaley, "Toward a Typology of Language Endangerment."
[30] Sands, "Language Revitalization in Africa."
[31] David Crystal, "Language Death Cambridge University Press" (Cambridge, 2000).

5. An endangered language will carry on growing if the language can be written by the speakers of the language.
6. An endangered language will carry on growing if the speakers of the language can use electronic technology.

Crystal maintains that information technology is important in the development of a language's profile. He adds that this is a good way to make sure that the language is accessible everywhere. The accessibility of a language on the internet or on social media platforms it easier for people who do not live in a community where the language is mostly used to access and learn it. The increasing usage of these platforms makes learning the language and accessing it much easier. This will allow the language to be used in other areas. Therefore, this study focused on factors 4, 5 and 6.

These three factors were selected as the theoretical framework for the study due to their focus on the objective of the study. The objective is to assess the extent of the accessibility of materials that could be used for the revitalisation of the N|uu language on the internet and social media, which directly links with these factors.

METHODOLOGY
In this study, a qualitative approach was followed, and interviews were conducted. A research design is a composition, roadmap and methodology of a study that is used in order to get answers to research questions while the optimal influence of variables is considered.[32] In the current study, the respondents, African Languages, Linguistics and Language Practice are regarded as a case. The researchers in this study chose to use this case as a way to gain an understanding of the respondents' ability to learn the language using the information and material accessible on the internet and social media. 16 participants were purposefully sampled. Purposeful sampling is due to the researcher selecting the participants due to certain qualities and experiences about the topic being explored or investigated.[33] In this approach, a small number of participants will be able to give in-depth information on the phenomenon that is being investigated.

Semi-structured interviews were conducted to obtain information from the participants. A semi-structured interview is a form of interview that does not follow a formal format, which allows new ideas to be brought up in the middle of the interview from potentially what the interviewee says.[34] Before participating, each participant was given a task to do research about the N|uu language on social media and the internet before participating in the study. They were requested to learn the language, if possible, from the material that they could access from social media and the internet.

The interview sample consisted of both female and male participants. The age range of the participants ranged from 18 and 54. The home languages of the participants were IsiZulu, IsiXhosa, Xitsonga, Tshivenda, Afrikaans, English, SiSwati and Sepedi.

To analyse the data, thematic data analysis was used. Thematic content analysis is the process in which patterns and themes are selected within qualitative data. In the study, the themes identified from the data were identified and subsequently grouped together.[35]

Ethical clearance was received from the Research Ethics Committee from the Tshwane University of Technology. The participants gave permission to be interviewed. The ethical clearance letter is available on request.

PRESENTATION OF FINDINGS
Based on the research question, "To what extent is the N|uu language material accessible on the internet or social media?" the theme study of the results exposes several important topics about the availability, range, and accessibility of language resources. These issues highlight the possibilities and difficulties for

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[32] Vicki Plano Clark and John Ward Creswell, *Designing and Conducting Mixed Methods Research* (Thousand Oaks, CA: SAGE, 2011).
[33] John W Creswell and Cheryl N Poth, *Qualitative Inquiry and Research Design: Choosing among Five Approaches* (Sage publications, 2016).
[34] Roxana Trigueros, Med Juan, and J Sandoval, "Qualitative and Quantitative Research Instruments," *Research Tools*, 2017, 1–14.
[35] Moira Maguire and Brid Delahunt, "Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars.," *All Ireland Journal of Higher Education* 9, no. 3 (2017).

the Nǀuu language's revitalisation with digital tools. Although Nǀuu language materials are available on the internet, their accessibility is limited due to fragmentation, lack of structured resources, and an emphasis on academic rather than community-oriented materials.

Nǀuu Languages Resources' Fragmentation
Participants reported encountering a variety of resources, including YouTube videos, linguistic charts, academic articles, and digital archives. One participant (LPPF1) used Google to find a language chart, while another (LPPM5) accessed a Nǀuu reader and a digital archive from New York University (NYU). However, these resources are dispersed across multiple platforms, making it difficult for users to find the complete information. One respondent (LPPM2) stated, "I had to search multiple places just to find a few useful resources." This fragmentation contrasts with centralised platforms used to revitalise languages such as Maori and Hawaiian, which offer structured learning paths via united digital ecosystems.

Restricted Access to Comprehensive Instruction Resources
The depth of Nǀuu language materials varies greatly. While some participants discovered beneficial resources, such as Ouma Geelmeid and Sheenah Shah's Nǀuu reader (LPPM5), others were only able to locate basic articles or videos on click pronunciation (LPPM2, 6). Several participants (LPPM7, LPPF7) reported meeting mostly academic papers and digital archives, which, while useful for study, do not sufficiently serve community people who want to learn the language. One participant (LPPF9) stated, "There are articles about Nǀuu, but hardly anything that helps you actually learn it."

Social Media Accessibility in Nǀuu Languages
Most of the participants reported limited access to Nǀuu language materials on social media. Responses like "I only saw a few videos" (LPPM2) and "It is not that accessible" (LPPF2, LPPF3, LPPF4) suggest a lack of structured and widely available content. Some participants mentioned the existence of articles concerning the language's endangered status, but they discovered few practical learning resources (LPPM6, LPPF6). However, a few respondents accessed Nǀuu language materials on social media as "somewhat accessible" (LPPM5, LPPF9), showing that there are resources, but may be difficult to locate.

Digital Archives and their Limitations
NYU hosts digital archives containing Nǀuu language materials (LPPM7, LPPF9), which participants acknowledged. However, these resources are frequently geared towards researchers and require some level of digital literacy to use. One respondent (LPPF7) stated, "The archives are there, but they are not easy to use if you just want to learn the language." This challenge highlights the importance of converting archived materials into more accessible and user-friendly formats.

Lack of Interactive and Structured Learning Tools
Participants frequently mentioned the lack of interactive or structured language-learning aids for Nǀuu. Unlike previous language revitalisation attempts, Nǀuu lacks digital infrastructure like as mobile apps, online courses, and interactive social media material. One respondent (LPPM6) noted, "I could not access any language material that could be used for learning," emphasising the lack of instructional content.

DISCUSSION
This study highlights the severe accessibility issues for Nǀuu language materials online. Although there is a range of materials available, their fragmentation hinders their usefulness in language revitalisation attempts. These findings are consistent with earlier research on endangered languages, which emphasises the need for centralised digital resources for language acquisition.[36]

The fragmented character of Nǀuu language materials makes it difficult for learners to access a unified and structured learning environment. This contrasts with the success of other revitalisation efforts, such as Maori and Hawaiian, which have profited from unified web platforms that provide diverse and

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[36] Kendall A King, "Language Revitalisation Processes and Prospects: Quichua in the Ecuadorian Andes," *Language and Education* 13, no. 1 (1999): 17–37.

pedagogically structured information.[37] The lack of a centralised repository for Nǀuu resources hinders learners and community members from consistently engaging with the language.

Underutilising social media for language propagation is a squandered opportunity for Nǀuu revitalisation. Previous research has indicated that social media platforms can aid language acquisition by delivering interactive content and encouraging community interaction.[38] Most participants observed a lack of Nǀuu materials on these platforms, highlighting the need for greater integration of social media into language revitalisation plans. The employment of Instagram and Facebook in the Hawaiian language movement.[39] demonstrates their potential to increase visibility and accessibility.

The preponderance of scholarly publications over practical language-learning aids indicates a mismatch between linguistic research and community demands. Although academic documentation is important for language preservation, it does not always lead to active language use in the community.[40] The findings suggest that additional community-led activities are required to create user-friendly learning materials such as interactive courses, pronunciation guides, and beginner-friendly digital content.

Although digital archives play an important role in maintaining endangered languages, their accessibility to everyday learners remains limited. The findings show that while current archives are rich in linguistic data, they are difficult to access for people who lack sophisticated digital literacy. This constraint is consistent with prior research emphasising the necessity to convert linguistic documentation into interactive and structured learning tools [41] Converting archive resources into mobile-friendly applications and incorporating them into social media platforms has the potential to greatly improve usability.

The lack of structured learning resources for Nǀuu is a significant barrier to its revitalisation. Language-learning software, online courses, and interactive platforms have been critical to the success of other endangered language revitalisation attempts.[42] The findings underscore the need for investment in developing structured, pedagogically sound digital resources for Nǀuu, as equivalent tools are currently absent.

RECOMMENDATIONS

To improve accessibility and revitalisation of the Nǂuu language, several critical activities should be implemented. First, a centralised digital repository is required to consolidate existing language materials, ensuring that learners and scholars can quickly access structured resources in one location. Furthermore, the creation of structured online courses and mobile applications would provide interactive and accessible learning resources, making language acquisition more interesting and effective.

To promote Nǀuu language learning, create specialised pages and channels on social media. Share short lessons, storytelling videos, and pronunciation aids. Engaging the community in language revitalisation programs, such as digital literacy training and content creation workshops, would allow native speakers to have an active part in the preservation and dissemination of their language.

Incorporating Nǀuu language acquisition into university curricula can promote student-led research and documentation initiatives, leading to ongoing academic engagement. Finally, pushing for government policies that fund endangered language preservation and digital inclusion projects would provide the institutional support required for long-term revitalisation efforts. Implementing these approaches can greatly increase the accessibility and sustainability of Nǀuu language materials.

CONCLUSION

The study has evaluated the availability of Nǀuu language resources on social media and the internet, revealing that while some materials are available, they are scattered and hard to find, making them insufficient for language revitalisation. Most of materials are academic, and are not suitable for community language education. Practical, user-friendly technologies like mobile apps, online courses,

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[37] Leanne Hinton and Kenneth Hale, *The Green Book of Language Revitalization in Practice* (Brill, 2013).

[38] Crystal, "Language Death Cambridge University Press."

[39] Crystal, "Language Death Cambridge University Press."

[40] Grenoble and Whaley, "Toward a Typology of Language Endangerment."

[41] Leanne Hinton, "Language Revitalization and Language Pedagogy: New Teaching and Learning Strategies," in *Applied Linguists Needed* (Routledge, 2014), 41–52.

[42] Grenoble and Whaley, "Toward a Typology of Language Endangerment."

and structured learning systems are lacking, hindering the ability of the ǂKhomani San community and outside students to interact with the language. Social media channels are also underutilized for distributing Nǀuu language content, with the Nǀuu language lacking a strong digital presence, especially on platforms targeting younger and global audiences.

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DISCLAIMER

The opinions and views expressed in this article belong to the authors and no one else.

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