

ECOLINGUISTIC PERSPECTIVES ON EFL LEARNERS' CULTURAL IDENTITY POST SUMATRA FLOODS

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Abstract: *This study analyzes the perception and storytelling of the changes in cultural identity of English as a Foreign Language (EFL) learners in Aceh and Padang after the 2025 Sumatra floods - landslides from an ecolinguistics perspective. Adopting an explanatory mixed-methods design and a retrospective perceived change framework, survey data from 800 senior high school and university students and qualitative data of 60 participants were acquired through narrative and interview data rendering this study to be explanatory and qualitative. Quantitative findings show perceived moves towards more layered configurations of cultural identity where both strongly local and national affiliations are observed along with enhanced functional orientation towards global culture and towards English. In addition, learners report decreases in debilitating cultural anxiety, approaching what Anxiety/Uncertainty Management theory describes as optimal levels of uncertainty. Qualitative ecolinguistic analysis shows that negotiation of identity occurs at macro, meso, exo and micro ecological levels mediated by religious and cultural discourses, family and school practices, institutional responses, media representations and multilingual language use. Rather than a linear movement from local to global identity, learners create hybrid, non-zero-sum narratives of identity that strategically mobilize local languages, Indonesian and English in post-disaster contexts. The study contributes to the field of ecolinguistics and applied linguistics by showing how environmental catastrophe may catalyze reflexive identity negotiation among EFL learners in disaster-prone regions of the Global South countries and how the study highlights the implications for disaster-responsive and identity-sensitive English language education.*

Keywords: *EFL, Cultural Identity, Ecolinguistics, Sumatra, Floods-landslides*

A. Introduction

This study concerns the guiding research puzzle: How do English as a Foreign Language (EFL) learners in Aceh and Padang conceive and reconstruct their cultural identities in the aftereffects of 2025 Sumatra flooding and landslides? This is a puzzling transformation in which within disrupted sociolinguistic ecology, looking at identity negotiation through an ecolinguistic perspective. The identity comes forth as a, discursively constructed "story of self," influenced by interactions in the macro (ideological and religious discourses), meso (family, school, and community), exo (media, NGOs, and policy responses), and micro (emotions, classroom practices, peer interaction) ecological levels (Alexander & Stibbe, 2014).

Although previous research has shown that large-scale disruptions, such as the Covid 19 pandemic, can lead to changes in the cultural identity of EFL learners (e.g., Peng, 2023), extant literature is still limited geographically and thematically with a primary focus on Chinese contexts and Public Health Crises. There is a lack of understanding of how climate caused disasters impact the identity negotiation of

learners in hazard prone areas of the Global South. Aceh and Padang are especially salient contexts because of their high local religious traditions, multilingual ecologies and recurrent exposure to natural disasters.

Instead of making claims about objectively measured longitudinal change, this study uses a retrospective, perceived-change approach to investigate how learners reconstruct their pre disaster identities and compare them with post-disaster orientations (Kim, 2017) This method acknowledges the possible memory bias while providing valuable knowledge on the way learners interpret identity transformation after ecological disruption. By incorporating quantitative patterns of perceived identity orientation with qualitative ecolinguistics narratives the study aims to explain how disaster experiences transform the positioning of learners in relation to local, national, and global cultures, and how the languages of English, Indonesian and regional languages are used to interpret and tell these experience (Stibbe, 2021). The findings aim to inform identity sensitive and resilience-oriented English language education in disaster affected Indonesian contexts.

B. Methodology

This study uses an explanatory mixed-methods design with a *retrospective perceived-change framework*. Quantitative survey data capture learners' self reported perceptions of cultural identity orientation and cultural anxiety *before* and *after* the 2025 floods-landslides, whereas qualitative narrative data provide ecolinguistic explanations of how these perceived changes are discursively constructed across ecological levels. The research was conducted in public and private senior high schools and universities in Aceh and Padang that were directly or indirectly affected by the 2025 disaster. The target population consisted of approximately 4,000 EFL learners enrolled in the 2026 academic year. (Aceh Province Education Statistics 2024, n.d.) Using stratified random sampling based on region (Aceh vs. Padang), educational level (senior high school vs. higher education), and gender, a total of 800 students (400 from Aceh and 400 from Padang) participated in the survey. From the survey respondents, 60 participants (30 from Aceh and 30 from Padang) were purposively selected for the qualitative phase based on (1) their willingness to participate further and (2) their representation of varying levels of perceived cultural anxiety and identity orientation. The quantitative instrument was a Likert-scale questionnaire adapted from the Cultural Anxiety Questionnaire and ecolinguistic identity measures used by Peng (2023). The adaptation process involved expert review by three applied linguistics scholars and pilot testing with 60 students from a non-sample institution. Reliability analysis produced acceptable internal consistency (Cronbach's α ranging from .78 to .86 across subscales). (Elisa et al., 2023). Quantitative data were examined through descriptive statistics and paired perceived-change comparisons, interpreted cautiously as subjective reconstructions rather than objective longitudinal measurements. Multiple linear regression was used to analyze predictors of perceived change in global (English-mediated) identity orientation (Elisa et al., 2023). Qualitative data consisted of written accounts and semi-structured interviews, which were coded in NVivo following an ecolinguistic framework. Coding focused on macro, meso, exo, and micro ecological levels, with attention to narrative framing, metaphor, stance, pronoun use, and code-switching practices. The qualitative findings were used to explain and contextualize the quantitative patterns.

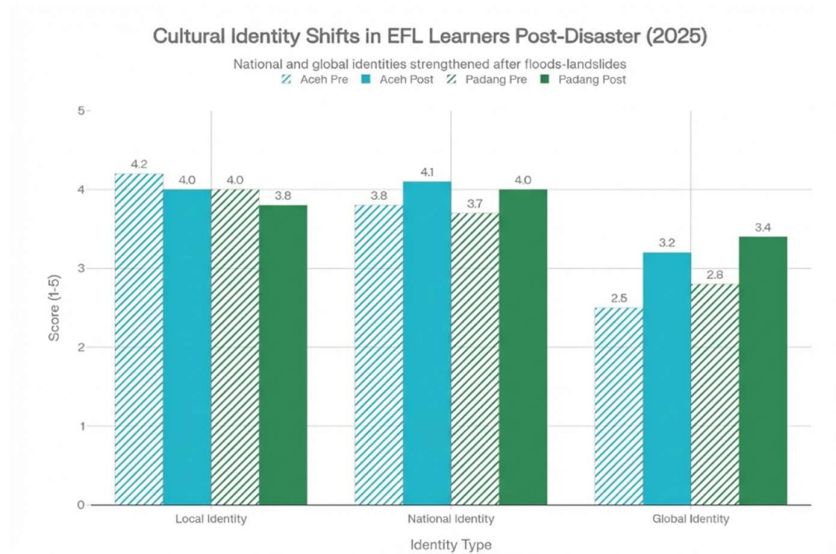


Figure 1. Quantitative Findings: Cultural Identity Shifts and Anxiety Trends In Aceh and Padang EFL Learners.

Figure 1 illustrates the main quantitative findings from a survey of 800 EFL learners in Aceh and Padang, which support a mixed-methods design and a multilevel ecolinguistic analysis. The bar chart shows shifts in mean cultural identity scores (1–5 scale), with local identity slightly declining. In contrast, national and global identities increased in the post-disaster period, reflecting more hybrid identity negotiation driven by ecosystem changes, including school relocation and increased exposure to international media. The trend line indicates a significant decrease in cultural anxiety, signaling improved adaptation to intercultural uncertainty, as explained by Anxiety/Uncertainty Management (AUM) Theory and Identity Negotiation Theory. (Rizalman et al., 2025, pp. 10-15)

Table 1. Descriptive Statistics and Comparative Analysis of Cultural Identity (N = 800)

Identity Type	Area	Pre-Disaster Mean (SD)	Post-Disaster Mean (SD)	Change (p-value)
Local (Acehnese/Minangkabau)	Aceh	4.20 ± 0.65	4.00 ± 0.72	3.45 (0.001)**
	Padang	4.00 ± 0.68	3.80 ± 0.70	2.98 (0.003)**
National (Indonesian)	Aceh	3.80 ± 0.70	4.10 ± 0.66	-4.12 (0.000)**
	Padang	3.70 ± 0.72	4.00 ± 0.68	-3.87 (0.000)**
Global (English)	Aceh	2.50 ± 0.85	3.20 ± 0.78	-9.25 (0.000)**
	Padang	2.80 ± 0.82	3.40 ± 0.75	-8.76 (0.000)**
Cultural Anxiety	Aceh	3.80 ± 0.75	3.20 ± 0.80	8.50 (0.000)**
	Padang	3.50 ± 0.78	2.90 ± 0.82	7.92 (0.000)**

Table 1 reports $p < 0.01$ for paired t -tests comparing pre- and post-disaster scores across areas. The data support the hypothesis of dynamic post-disaster identity change. (Indonesia, 2024, pp. 11-20)

Table 2. Multiple Linear Regression – Predictors of Global Identity Change (β , p)

Disaster Impact Intensity	0.28	0.000**
Region (Aceh = 0, Padang = 1)	0.15	0.012*
School Type (Senior HS = 0, HE = 1)	0.22	0.001**
Gender (Female = 0, Male = 1)	0.09	0.089
$R^2 = 0.34$		

Table 2 reports $p < 0.01$ and $p < 0.05$. The model explains 34% of the variance, indicating that disaster impact intensity is a strong predictor of changes in global identity. (Impact of linguistic ostracism on subjective well-being and academic achievement of EFL learners: moderating role of foreign language enjoyment, 2025)

Table 3. Main NVivo Analysis Categories (Code Frequencies from 60 N)

Macro	Religious and disaster-related ideology (“a test from God”)	28	12
	Global climate discourse (“climate change”)	22	25
Meso	Family and community support	26	27
	Adaptation to relocated schooling	24	22
Exo	Media, NGOs, and English-language information	27	28
Micro	Emotional code-switching	25	24
Total Codes		152	138

The table shows that the ecolinguistic qualitative analysis exposes narrative patterns that demonstrate post-disaster local–global integration. (Parrott et al., 2024)

C. Result and Discussion

Quantitative Findings: Perceived Identity Shifts

Results of the surveys show that learners experienced significant changes in their cultural identity orientations after the disaster. Local cultural identity (Acehnese/Minangkabau) was retained strong but more reflexive - national identity became associated with solidarity and collective recovery. Orientation towards global culture and English rose slightly, and particularly with respect to education, access to information and future aspirations. Notably, reported levels of debilitating cultural anxiety decreased - in line with what AUM theory describes as more "optimal" levels of uncertainty. (Zhang & Liu, 2024).

Regression analysis shows that reported impact of disaster severity (such as school damage, relocation, and family disruption) is a significant predictor in the increased global identity orientation. However, the model is responsible for a moderate percentage of variance ($R^2 = .34$). (Andrianus et al, 2025, pp. 867-873) These results should be interpreted as reflecting learners' meaning-making processes as opposed to

direct causal effects.

Qualitative Ecolinguistic Analysis

Analysis reveals the way learners construct discursively the change of identity at ecological levels. At the macro level, the Aceh learners often constructed the disaster within religious discourse (e.g. "ujian dari Allah", global climate narratives encountered through English language media. The effort more common among Padang learners of mobility and entrepreneurship, as a reflection of different historical and socioeconomic ecologies. (Rizalman et al., 2025, pp. 10-15)

At the meso level, families tended to reinforce local language and religious practices, while schools promoted English as a means to access global knowledge and disaster-related information. Rather than causing conflict, these orientations commonly caused functional multilingualism, in which different languages served complementary environmental functions. (Kartika-Ningsih & Rose, 2018)

At the exo level, interaction with NGOs, media, and relocated schooling environments expanded learners' communicative networks and normalized intercultural encounters. At the micro level, shifts in pronoun use, stance, and code-switching illustrate increasingly layered identity positioning (e.g., oscillation between "I," "we as Acehnese/Minangkabau," and "we as global youth"). (Rengur et al., 2023, pp. 1-10)

Taken together, the quantitative and qualitative data show that learners do not describe a linear movement from local to global identity. Instead, they narrate a *hybrid, non-zero-sum configuration* in which local, national, and global affiliations coexist and are strategically mobilized in response to post-disaster ecological conditions. (Beyond text in the EFL digital landscape exploring power, identity, and culture in post-COVID-19 online learning communities, 2025)

D. Conclusion

This research demonstrates that, from the learners' perspectives, the 2025 Sumatra floods and landslides served as a critical ecological turning point in cultural identity negotiation among EFL learners in Aceh and Padang. However, several limitations must be acknowledged. First, the retrospective design relies on self-reported perceptions and is subject to memory bias. Second, the findings are not generalizable beyond the studied contexts. Future research should employ longitudinal or panel designs and comparative studies across diverse disaster types. Despite these limitations, the study contributes to ecolinguistics and applied linguistics by demonstrating how environmental catastrophe can catalyze reflexive, multilayered identity negotiation. Pedagogically, the findings underscore the importance of disaster-responsive English education that values local languages, incorporates climate and resilience narratives, and supports learners in articulating their communities' experiences within global discourses.

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