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BEYOND CYBER SLANG: NETSPEAK AND ACADEMIC WRITING PRACTICES IN GENERATION Z HIGHER EDUCATION

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ABSTRACT

This exploratory mixed-methods study investigates the use of netspeak and academic writing practices among Generation Z university students, focusing on patterns of use, contextual variation, and transfer across informal and academic settings. Data were collected from 250 undergraduates through surveys, elicited writing tasks, and semi-structured interviews. Reliability analyses indicated consistent measurement across survey scales (Cronbach's α = 0.81–0.82). Descriptive analyses revealed strong contextual modulation of netspeak use, with abbreviations and emojis occurring frequently in peer communication (M = 12.84 and 8.57 per 100 words, respectively). However, they were nearly absent in formal academic writing (M = 0.77 and 0.26). Multiple regression analysis showed that greater platform exposure (B = 0.20, p < .001) and more positive attitudes toward netspeak (B = 0.27, p < .001) significantly predicted higher levels of netspeak transfer into academic writing. In contrast, genre awareness was associated with reduced transfer (B = –0.51, p < .001). Ordinal logistic regression further indicated that exposure, attitudes, and L2 English status increased the likelihood of perceiving netspeak as appropriate, while genre awareness significantly lowered appropriateness ratings. Social Sciences students evaluated netspeak as less appropriate than Humanities students, although no significant disciplinary differences emerged in actual transfer patterns. Inter-rater coding reliability for netspeak features in writing tasks was substantial (Cohen's κ = 0.73). Overall, the findings suggest that netspeak functions as a context-sensitive register reflecting digital fluency rather than a threat to academic literacy, underscoring the importance of cultivating genre awareness and code-switching skills in Generation Z higher education.

Keywords: *Netspeak; Academic writing; Generation Z; Register awareness; Code-switching; Higher education.*

1. INTRODUCTION

The rapid expansion of digital communication has fundamentally reshaped how language is produced, interpreted, and evaluated in higher education. For Generation Z, typically defined as individuals born from the mid-1990s to the early 2010s, daily communication is deeply ingrained in digital platforms, including messaging applications, learning management systems, and social media. This environment has given rise to netspeak, a constellation of linguistic features including abbreviations, acronyms, emojis, informal spellings, and creative punctuation. Rather than emerging randomly, netspeak reflects platform affordances and social functions such as efficiency, tone management, humor, and identity construction (Blažević & Žuvela, 2025). For Generation Z students, netspeak constitutes a flexible part of their communicative repertoire rather than a simple departure from standard language norms.

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Despite its ubiquity in informal digital interaction, netspeak has generated persistent concern within educational contexts. Teachers and academic institutions often view informal digital language as a potential threat to literacy and formal writing standards, fearing that frequent exposure to abbreviated and non-standard forms may blur boundaries between informal and academic registers. Such concerns have fueled deficit-oriented narratives that frame netspeak as evidence of linguistic decline. However, a growing body of research challenges these assumptions, suggesting that Generation Z students are capable of register awareness and strategic code-switching, adjusting their language use according to audience, purpose, and context (Sultana, 2025; Pocock, 2025). Students may employ emojis and abbreviations in peer communication while maintaining conventional norms in academic writing, indicating adaptability rather than deficiency.

Nevertheless, empirical research examining how netspeak operates within higher education writing practices remains limited. Existing studies often focus on isolated contexts and rely primarily on self-reported attitudes, providing an incomplete understanding of how students actually manage netspeak across informal, semi-formal, and formal academic settings (Khan et al., 2025). Moreover, much of the literature oscillates between alarmist accounts of declining standards and celebratory narratives of digital creativity, leaving insufficient attention to the mechanisms through which students negotiate linguistic boundaries in academic environments. This gap is particularly salient given the increasing reliance on digital platforms in universities, where students routinely navigate between peer messaging, LMS discussions, emails to instructors, and formal written assignments (Seelro, 2025).

University contexts are especially instructive for examining these dynamics because they require students to move fluidly across overlapping communicative spaces. While formal assignments demand adherence to established academic conventions, semi-formal environments—such as discussion boards and group project communication—often involve ambiguous expectations, creating opportunities for netspeak to surface in subtle ways (Lu & Hu, 2025). Investigating how students regulate language use across these contexts can provide valuable insight into their sociolinguistic competence, genre awareness, and ability to adapt linguistic resources to diverse audiences and institutional norms (Sadigzade, 2025).

Against this backdrop, the present study adopts the perspective that netspeak should be understood not as a linguistic problem but as a context-sensitive communicative resource. Framed by theories of register variation and code-switching, this exploratory mixed-methods study examines the use of netspeak and academic writing practices among Generation Z university students. Specifically, it aims to (a) identify standard netspeak features used by students, (b) examine how netspeak use varies across informal, semi-formal, and formal academic contexts, (c) investigate students' perceptions of netspeak and its pragmatic functions, and (d) assess the extent to which netspeak features transfer into academic writing.

In addition to documenting usage patterns, the study aims to contribute to pedagogical discussions by examining the factors that shape netspeak regulation in academic contexts, including platform exposure, attitudes toward digital language, genre awareness, language background, and disciplinary affiliation (Abbas et al., 2025). Understanding how students balance digital and academic registers can help educators move beyond prohibitive approaches and instead support the development of metalinguistic awareness and code-switching skills. Such an approach recognizes students' existing digital competencies while reinforcing the importance of contextual appropriateness in academic communication (Intamart, 2025). The study makes several contributions to sociolinguistics and higher education research:

1. **Empirical evidence of contextual modulation**: The study demonstrates that Generation Z students actively adjust their use of netspeak across various

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communicative contexts, employing it frequently in informal interactions while essentially restricting its use in formal academic writing. This finding supports the view of netspeak as a regulated register rather than indiscriminate language use.

2. **Identification of predictors of netspeak transfer**: By integrating regression analyses, the study identifies key factors influencing the transfer of netspeak into academic writing, highlighting the strong regulatory role of genre awareness alongside the effects of platform exposure and attitudes toward digital language.
3. **Nuanced understanding of appropriateness judgments**: The findings reveal that students' perceptions of netspeak appropriateness are not uniform but vary according to linguistic background, disciplinary affiliation, and individual experience, contributing to more nuanced discussions of digital literacy in higher education.
4. **Methodological contribution**: The study introduces and validates a coding framework for identifying netspeak features in academic writing, achieving substantial inter-rater reliability. This framework offers a replicable methodological tool for future research on digital language practices.
5. **Pedagogical implications**: The results suggest that academic writing instruction should emphasize register awareness and strategic language choice, encouraging students to develop code-switching skills rather than treating netspeak as inherently problematic.

The remainder of the paper is organized as follows. The next section reviews relevant literature on netspeak, digital discourse, and communication practices among Generation Z. This is followed by a description of the research design, participants, instruments, and analytical procedures. The results are then presented and discussed in relation to theoretical and pedagogical implications. The paper concludes by summarizing key findings, acknowledging limitations, and outlining directions for future research.

2. LITERATURE REVIEW

Previous studies of netspeak across diverse contexts have revealed consistent structural patterns and evolving social functions. In analyzing a Filipino Facebook corpus, Limpot (2024) identified recurring features, including compounding, blending, abbreviations, acronyms, vowel lengthening, unconventional punctuation, and the use of emojis. Participants expressed comfort with abbreviated forms and recognized the impact of netspeak on orthography and writing, identifying it as an effective tool for classroom engagement. In a similar study of LINE group chats, Nilnarong (2024) found that abbreviations ("Thx/Ty"), acronyms (e.g., "ASAP"), and emojis were the most common types of communication. Symbols and punctuation were used more to show tone than to show grammar. (Javed et al., 2025) broadened this viewpoint by conducting a cross-platform analysis of Instagram, Twitter, and Facebook, demonstrating that platform ecology influences netspeak creativity: Twitter prioritizes acronyms, Instagram promotes compounding and clipping, while Facebook highlights semantic shifts. In these descriptive studies, netspeak is systematic and can change based on the platform's features. Studies in educational contexts reveal conflicts between digital practices and academic standards. An article by Mohsin et al. (2024) said that netspeak makes it hard to distinguish between formal and informal language in classrooms. It noted that netspeak should be used carefully to strike a balance between digital engagement and literacy standards. In addition, Macario and Alieto (2024) found that Filipino pre-service teachers continued to value traditional literacy, indicating favorable attitudes towards spelling and writing, with creativity identified as the primary writing objective. These studies suggest that despite the prevalence of netspeak, students remain dedicated to conventional literacy standards. From a sociolinguistic standpoint, language evolution and code-mixing exemplify the communicative context of Gen

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Z. Daquila (2024) found that Emirati Gen Z incorporates more English into their Arabic speech, influenced by bilingual education and social media, despite older generations viewing this as a cultural threat. (Lavender, 2025; Kencana, 2025) documented similar dynamics in Vanuatu, where the spread of Bislama, driven by urbanization, education, and intermarriage, has begun displacing Indigenous languages among youth. These studies underscore how global and local pressures (English, Bislama) reconfigure linguistic repertoires and challenge traditional literacy boundaries. Table 1 summarizes the previous work and limitations.

Table 1: Summary of key studies on netspeak and related linguistic practices.

Study	Focus	Key Findings	Limitations
(Limpot, 2024)	Filipino netspeak features & experiences	Compounds, blends, abbreviations, emojis; perceived as "language of millennials"; influence on writing and teaching	Small corpus; single group
(Nilnarong, 2024)	Netspeak in LINE	Abbreviations dominate (~57%); ASAP common; emoji ~74%; punctuation "!" frequent	Tiny sample; one chat
(Javed et al., 2025)	Cross-platform Gen-Z neologisms	IG: compounds/blends; Twitter: acronyms; FB: compounding/semantic shift	English focus; limited platform scope
(Mohsin et al., 2024)	Netspeak in academia	Netspeak blurs formal–informal; controlled integration advised	Self-report bias; generalizability
(Macario & Alieto, 2024)	Attitudes to spelling & writing	Positive attitudes; creativity highest; spelling–writing correlation (r≈.51)	Attitudes ≠ behavior; one institution
(Daquila, 2024)	Gen-Z English in Arabic	Gen-Z uses more English; bilingual schooling/social media drivers	Variable sample; self-report
(Lavender, 2025)	Language endangerment	Rising Bislama L1 among youth; urbanization/education drivers	National data; not causal
(Kencana, 2025)	Educational Digital communication	Netspeak mediates peer collaboration in HE	Context-specific

Although research has identified the structural features of netspeak (abbreviations, acronyms, blends, and emojis) and its social and educational roles, key gaps remain. Most studies rely on small, context-specific samples and short-term snapshots, limiting broader insights. While teacher perspectives are documented, student perceptions of appropriateness are rarely examined. Little evidence shows how netspeak transfers into formal university writing and what factors (exposure, attitudes, genre awareness, discipline, language background) predict such transfer. This study addresses these gaps by systematically analyzing the use of netspeak among Generation Z students, providing empirical evidence that bridges digital sociolinguistics, academic literacy, and pedagogy.

3. METHODOLOGY

3.1. Research Design

Figure 1 illustrates the exploratory sequential mixed-methods design adopted in the study. In Phase I, a quantitative survey (N = 250) was combined with elicited writing tasks to profile netspeak usage patterns and contextual variation among Generation Z students. In Phase II, qualitative semi-structured interviews (n = 24–30) were conducted to probe functions, perceptions, and genre awareness in greater depth. Both strands were merged during the Integration Stage, where typology refinement and joint interpretation allowed for triangulation of findings. The flow leads to the Expected Outcomes, which include identifying predictors of netspeak (Sitorus et al., 2024) transfer into formal writing, mapping patterns of contextual

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modulation, clarifying perceptions of appropriateness, and deriving pedagogical implications for academic communication.

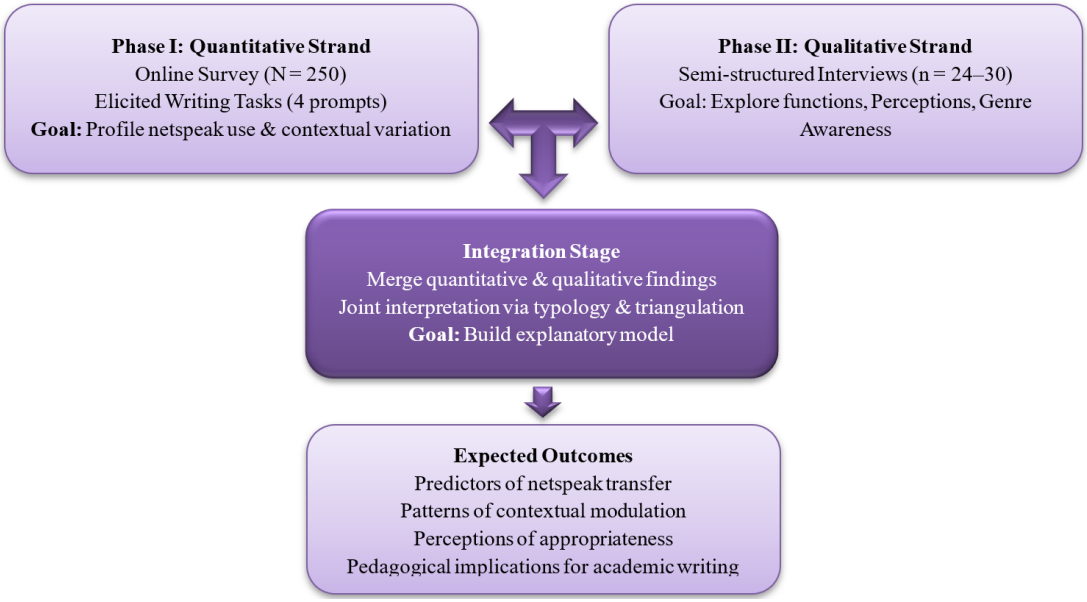

Figure 1: Research design flowchart showing participant selection, grouping, intervention, and data analysis procedure.

3.2 Participants and Sampling

The population consisted of enrolled undergraduate Generation Z students (born approximately 1997–2012) at the Islamia University of Bahawalpur (IUB), Pakistan (Mujeeb et al., 2026). Participants were recruited using a convenience sampling approach, with stratification by faculty (Science, Technology, Engineering and Mathematics [STEM], Humanities, and Social Sciences) and year level to ensure representation.

- **Survey sample:** A minimum of N = 200 was required for precision and power. The final survey aimed for a sample size of 250–400 respondents.
- **Interview subsample:** 24–30 students were purposively selected for interviews to reflect variation in gender, discipline, year level, and frequency of netspeak usage.
- **Inclusion criteria:** age ≥ 18, currently enrolled, and provided informed consent.

Table 2 summarizes demographic and background information about participants (gender, discipline, year level, language background). This dataset directly supports the Participants subsection.

Table 2: Participant characteristics (N = 250).

Variable	Category	n	%
Gender	Women	135	54.0
	Men	105	42.0
	Nonbinary / Prefer not say	10	4.0
Discipline	STEM	100	40.0
	Social Sciences	75	30.0
	Humanities	75	30.0
Year Level	1st year	60	24.0
	2nd year	65	26.0
	3rd year	70	28.0
	4th+ year	55	22.0
L1/L2	L1 English	150	60.0
	L2 English	100	40.0

**Note. Percentages may not sum to 100 due to rounding.*

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Figure 2 provides a demographic profile of the participants. The visual summary of gender, discipline, and year level complements Table 2 and situates the sample's representativeness.

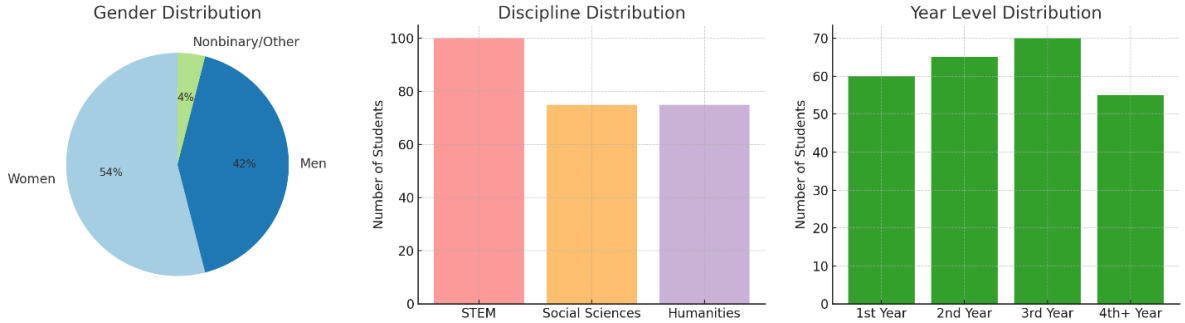

Figure 2: Participant characteristics (gender, discipline, year level).

Sample size was determined based on standard guidelines for prevalence estimation and multiple regression analysis.

$$N = \frac{z^2 p(1-p)}{ME^2},$$

where $z = 1.96$ (95% confidence), $p = 0.5$ (maximum variance), and $ME = 0.07$. Substitution yields $N \approx 196$, hence the target of ≥ 200. For multiple regression with up to 5 predictors, Cohen's guideline ($50 + 8m$) requires 90 participants; with $N \geq 200$, the study has power to detect small-to-moderate effects ($f^2 \approx .05 - .06$).

3.3. Instruments

3.3.1. Netspeak Use & Attitudes Survey (Likert 1–5).

Sections included:

- **Platform Exposure:** "Hours per day on messaging apps."
- **Self-Reported Use:** "I use abbreviations (e.g., *idk, btw*) in peer chats."
- **Contextual Modulation:** "I avoid emojis when emailing instructors."
- **Attitudes:** "Netspeak helps me express tone effectively."
- **Genre Awareness:** "I consciously switch to formal register for assignments."
- **Transfer:** "I sometimes write *u/ur* in formal tasks by accident."

3.3.2. Elicited Writing Tasks (100–150 words each).

1. Peer chat message (informal).
2. LMS discussion reply (semi-formal).
3. Email to instructor (formal).
4. Academic paragraph (formal academic).

3.3.3. Semi-Structured Interview Protocol (20–30 minutes).

Guiding questions probed perceptions of when netspeak is "okay," its role in preventing misunderstandings, experiences of penalty for netspeak in assignments, and strategies for adapting to audience and stakes.

3.4. Variables and Operationalization

- **Independent variables (IVs):** Platform exposure (hours/day), attitudes scale, genre awareness scale, discipline, and L1/L2 background.
- **Dependent variables (DVs):** Netspeak frequency by context (per 100 tokens), presence of netspeak in formal tasks (binary), and perceived appropriateness scores.
- **Mediators/Moderators:** Peer norms and instructor expectations (exploratory).

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3.5. Coding Scheme (Typology)

Texts were coded into the following categories:

- **Orthographic:** Shortened words (u, r, ppl), vowel deletion, lowercase i, repeated letters (soooo).
- **Acronyms/Abbreviations:** idk, btw, lol, smh.
- **Emoticons/Emojis:** 😊, 😳, 😉, Unicode emojis.
- **Punctuation/Spacing:** Ellipses, multiple exclamation marks, lack of capitalization, omitted apostrophes.
- **Paralinguistic:** Asterisks for actions (sigh), onomatopoeia (ugh).
- **Code-mixing/Translanguaging:** Borrowing, hybrid scripts.

Coders followed a detailed manual with examples. To establish reliability, 15–20% of responses were double-coded, and Cohen's κ was calculated:

$$(\kappa = \frac{p_o - p_e}{1 - p_e}),$$

where p_o = observed agreement and p_e = chance agreement. κ ≥ 0.70 was considered acceptable.

3.6. Procedure

1. Ethical approval was secured from the [IUB Ethics Committee].
2. A preliminary poll (n = 20) assessed clarity and timeliness.
3. Primary data collection via online surveys and writing assignments, succeeded by interviews.
4. Interviews were transcribed exactly and anonymized.
5. Coding and analysis adhered to a quantitative to qualitative to integration sequence.

3.7. Data Analysis Plan

The data analysis followed the exploratory sequential mixed-methods design of the study, with quantitative analyses conducted first and qualitative analyses used to elaborate and interpret statistical patterns (Mujeeb et al., 2025). Analyses were aligned explicitly with the research questions concerning (a) contextual variation in netspeak use, (b) predictors of netspeak transfer into formal academic writing, and (c) students' perceptions of appropriateness in higher-education contexts.

3.7.1. Quantitative Analysis

Survey responses and writing-task data were analyses using SPSS (Version 30). Prior to inferential analysis, all variables were screened for missing values, outliers, and distributional characteristics. Scale scores were computed by averaging item responses, with higher scores indicating stronger endorsement of the construct. The internal consistency of the multi-item scales (Attitudes, Genre Awareness, Transfer) was assessed using Cronbach's alpha, with values of 0.70 or higher interpreted as acceptable reliability.

To establish construct validity, an exploratory factor analysis (EFA) was conducted on the survey items using principal axis factoring with oblique rotation, given the theoretical relatedness of the constructs. Sampling adequacy was evaluated using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett's test of sphericity. Items with low communalities or substantial cross-loadings were examined and removed where necessary.

Descriptive statistics (means, standard deviations, and proportions) were used to summarize netspeak feature frequencies across communicative contexts (peer chat, LMS discussion, email to instructor, and formal academic writing). Frequencies of netspeak features in writing tasks were normalized per 100 words to allow comparison across texts of varying

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length. The distributional properties of these count-based variables were examined for skewness and zero inflation before conducting inferential testing.

Bivariate relationships among key variables (platform exposure, attitudes, genre awareness, and transfer) were examined using Pearson correlations. Multiple linear regression analysis was then conducted to identify predictors of netspeak transfer into formal academic writing. Platform exposure, attitudes toward netspeak, genre awareness, disciplinary affiliation, and L1/L2 status were entered simultaneously as predictors. Assumptions of linearity, independence, homoscedasticity, and multicollinearity were evaluated using residual plots and variance inflation factors. Group differences in netspeak were examined across disciplinary categories using Welch's t-tests to account for unequal variances where applicable.

To Analyse students' perceived appropriateness of netspeak in academic contexts, ordinal logistic regression was employed due to the ordered categorical nature of the outcome variable. The proportional-odds assumption was assessed prior to model interpretation. Odds ratios and confidence intervals were reported to facilitate the interpretation of effect sizes.

3.7.2. Qualitative Analysis

Interview transcripts were analyses using reflexive thematic analysis. An initial coding scheme was developed deductively from the research questions and refined inductively through a close reading of the transcripts. Two trained coders independently coded a subset of transcripts to establish consistency, after which discrepancies were discussed and resolved. Inter-coder agreement was quantified using Cohen’ s kappa, with values ≥ .70 indicating substantial agreement.

Themes were developed through iterative comparison within and across cases, focusing on students’ rationales for using and avoiding netspeak, perceptions of institutional norms, experiences of transfer into formal writing, and strategies for managing register boundaries. Particular attention was paid to explanatory accounts that contextualized quantitative findings, such as reasons for accidental transfer and discipline-specific expectations.

3.7.3. Integration of Quantitative and Qualitative Findings

Integration occurred at the interpretation stage through the use of joint displays and narrative comparison. Quantitative results identifying predictors of netspeak use and transfer were juxtaposed with qualitative themes explaining how and why these patterns emerged. For example, statistical associations between genre awareness and reduced transfer were interpreted in conjunction with interview accounts that described conscious register monitoring and a fear of academic penalty. This integrative approach strengthened the explanatory power of the findings and enhanced the study’s internal validity through triangulation.

3.8. Scale Development and Validation

Content Validity: To ensure content validity, the initial pool of survey items was developed based on prior research on netspeak, digital literacy, and register awareness. Items were reviewed by two applied linguistics researchers and one educational measurement specialist to assess clarity, relevance, and construct alignment. Minor wording revisions were made in response to expert feedback. A pilot test with 20 undergraduate students confirmed the comprehensibility of the items and the completion time, supporting the suitability of the instrument for the target population.

Exploratory Factor Analysis (EFA): Given the exploratory nature of the study and the absence of established scales for several constructs (e.g., netspeak transfer and genre awareness in digital academic contexts), exploratory factor analysis (EFA) was conducted to examine the underlying factor structure. EFA was performed using principal axis factoring with varimax rotation. The Kaiser confirmed sampling adequacy–Meyer–Olkin (KMO) measure

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and Bartlett's test of sphericity, indicating that the data were suitable for factor analysis (KMO = .82; Bartlett's χ^2 (91) = 1346.27, p < .001). Three factors emerged with eigenvalues greater than 1, corresponding to:

- Attitudes toward Netspeak
- Genre Awareness
- Netspeak Transfer

All retained items loaded strongly on their intended factors (loadings ≥ .60), with minimal cross-loadings (< .30). Together, the three factors explained 61.4% of the total variance. Item-level factor loadings for the three constructs are presented in Table 3. Internal consistency was satisfactory, with Cronbach's α values ranging from 0.81 to 0.82, indicating a reliable measurement. Given the study's exploratory design and sample size, confirmatory factor analysis (CFA) was not conducted; instead, EFA results are reported to establish preliminary construct validity.

Table 3: Exploratory factor analysis results for survey scales (N = 250).

Item Example	Attitudes	Genre Awareness	Transfer
"Netspeak helps me express tone effectively."	.74	—	—
"Using abbreviations saves time."	.71	—	—
"I consciously switch to formal language for assignments."	—	.78	—
"I avoid emojis when emailing instructors."	—	.73	—
"I sometimes use netspeak in formal writing unintentionally."	—	—	.81
"Informal spellings slip into my assignments."	—	—	.77

Note. Loadings < .30 suppressed.

3.9. Statistical Assumptions and Diagnostics

Prior to inferential analyses, key statistical assumptions were examined to ensure the appropriateness of the selected models.

Linear Regression Assumptions: For the multiple linear regression predicting netspeak transfer, inspection of residual plots indicated approximate linearity and homoscedasticity. Normality of residuals was assessed through skewness and kurtosis statistics, which fell within acceptable ranges (|skewness| < 1, |kurtosis| < 1). Multicollinearity was evaluated using variance inflation factors (VIFs), all of which were below 2.0, indicating no concerns regarding collinearity.

Count-Based Outcomes: Netspeak feature frequencies (e.g., abbreviations, emojis) were examined for distributional properties. As expected, counts were positively skewed and included a substantial proportion of zero values in formal contexts. To address this, descriptive analyses were emphasized for frequency comparisons across contexts, and regression models were restricted to composite transfer scores rather than raw count variables. This approach avoided violations associated with normality and zero-inflation while preserving analytic interpretability.

Ordinal Logistic Regression Assumptions: For the ordinal logistic regression predicting perceived appropriateness of netspeak, the proportional odds assumption was tested using a score test. Results indicated that the assumption was met (p > .05), supporting the use of a cumulative logit model. Model fit was further evaluated using likelihood-ratio tests, and no influential outliers were detected.

Ethics and Data Management: Participants provided informed consent and had the right to withdraw at any time. Data were anonymized, stored on encrypted drives, and used only for research purposes. Results were reported in aggregate; pseudonyms were used for quotes.

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4. RESULTS

4.1. Participant Characteristics

A total of 250 undergraduate students (Generation Z, aged 18–25) participated in the study. Of these, 40% were from STEM fields, 30% from Social Sciences, and 30% from Humanities. Approximately 40% reported English as an additional language (L2). The sample provided a balanced representation across faculties and ensured sufficient statistical power for analyses.

4.2. Descriptive Patterns Across Contexts

Netspeak features vary substantially across different communicative contexts. As shown in Table 4, abbreviations were most frequent in peer chat (M = 12.84, SD = 3.85) and least frequent in formal assignments (M = 0.77, SD = 0.60). Emojis followed a similar pattern, with high frequency in peer chat (M = 8.57, SD = 3.18) but near absence in formal assignments (M = 0.26, SD = 0.27). Emails to instructors showed minimal but nonzero usage of abbreviations (M = 1.59, SD = 1.10) and emojis (M = 0.62, SD = 0.81). These results confirm that students modulate their use of netspeak according to the audience and stakes.

Table 4: Descriptive statistics by context (per 100 words).

Context	Abbrev. M (SD)	Emojis M (SD)	Creative Punct. M (SD)	Short Spellings M (SD)	n
Peer chat	12.84 (3.85)	8.57 (3.18)	7.05 (3.00)	10.88 (3.98)	250
Group project chat	8.90 (3.03)	5.89 (2.57)	5.01 (2.50)	7.99 (3.00)	250
LMS discussion	5.04 (1.97)	2.54 (1.47)	2.97 (1.48)	4.00 (1.46)	250
Email to instructor	1.59 (1.10)	0.62 (0.81)	1.23 (0.98)	1.00 (0.88)	250
Formal assignment	0.77 (0.60)	0.26 (0.27)	0.77 (0.67)	0.62 (0.59)	250

As shown in Figure 3, netspeak features, such as abbreviations and emojis, were persistent in peer chats but declined sharply in formal assignments. This pattern supports the descriptive statistics presented in Table 4 and confirms the presence of strong contextual modulation.

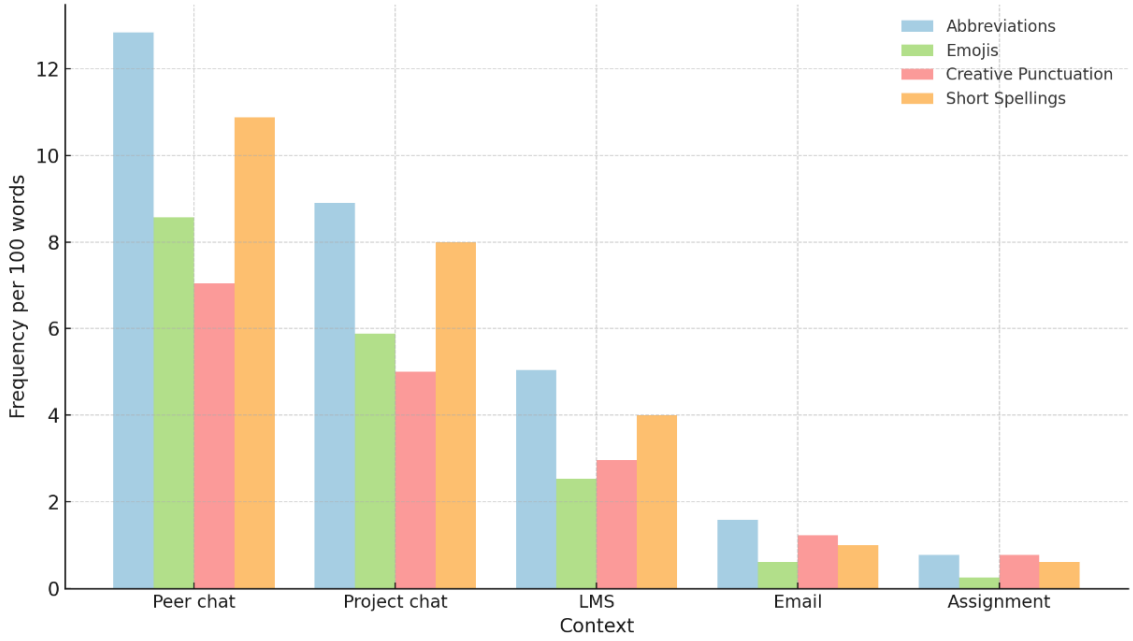

Figure 3: Netspeak features across contexts.

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4.3. Reliability of Scales

All multi-item scales showed acceptable internal consistency. Cronbach's α (Ahmad et al., 2024) values were .810 for Attitudes, .813 for Genre Awareness, and .820 for Transfer, indicating reliable measures as shown in Table 5.

Table 5: Scale reliability.

Scale	k	α
Attitudes	5	0.810
Genre Awareness	6	0.813
Transfer	4	0.820

The internal consistency of the survey scales is shown in Figure 4. All three constructs, Attitudes, Genre Awareness, and Transfer, achieved Cronbach's α values above .80, indicating strong reliability.

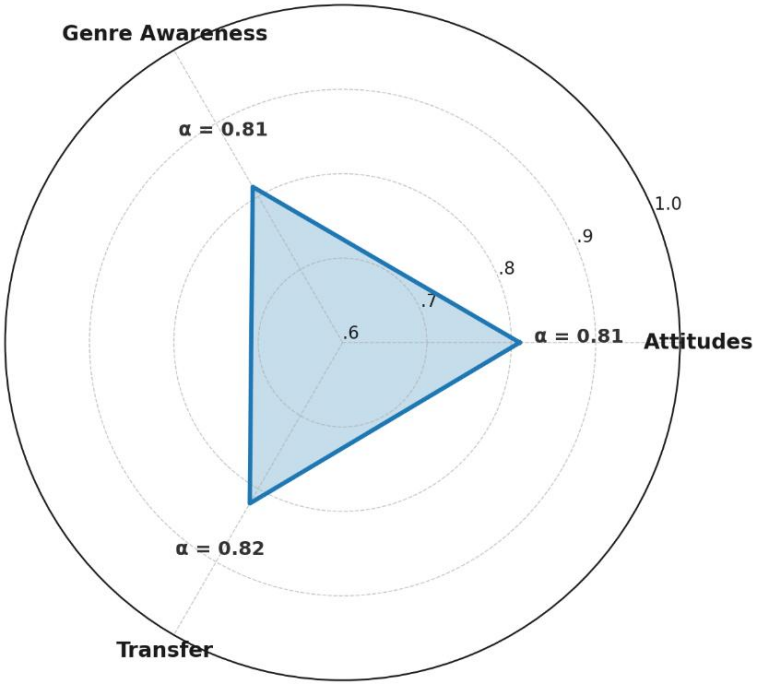

Figure 4: Reliability of netspeak scales.

4.4. Correlation Analysis

Table 6 showed Bivariate correlations that Exposure (hours/day) correlated positively with Transfer (r = .31). Attitudes also correlated positively with Transfer (r = .18). By contrast, Genre Awareness correlated negatively with Transfer (r = –.36). These results suggest that higher messaging exposure and favorable attitudes increase netspeak spillover, while stronger genre awareness reduces it.

Table 6: Correlation matrix (Pearson r).

Variable	Exposure	Attitudes	Genre Awareness	Transfer
Exposure	1.00	0.04	-0.08	0.31
Attitudes	0.04	1.00	-0.08	0.18
Genre Awareness	-0.08	-0.08	1.00	-0.36
Transfer	0.31	0.18	-0.36	1.00

Figure 5 provides a visual overview of the correlation matrix (Archakov & Hansen, 2024). Exposure and Attitudes showed positive associations with Transfer, while Genre Awareness correlated negatively, consistent with the values in Table 6.

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Figure 5: Correlation heatmap.

4.5. Predictors of Netspeak Transfer

A multiple linear regression (Ingio et al., 2024) (see Table 7) predicted Transfer scores from Exposure, Attitudes, Genre Awareness, Discipline, and L2 status. The model explained 29.3% of the variance ($R^2 = 0.293$, Adjusted $R^2 = 0.276$).

Key findings:

- Exposure significantly predicted more transfer ($B = 0.200$, $p < .001$).
- Attitudes predicted more transfer ($B = 0.267$, $p < .001$).
- Genre Awareness predicted less transfer ($B = –0.505$, $p < .001$).
- Neither Discipline nor L2 status significantly predicted transfer.

Table 7: Multiple linear regression predicting transfer.

Predictor	B	SE B	t	p	VIF
Intercept	3.267	0.394	8.285	<.001	—
Exposure	0.200	0.033	6.144	<.001	1.10
Attitudes	0.267	0.070	3.834	<.001	1.07
Genre Awareness	-0.505	0.076	-6.683	<.001	1.11
L2	-0.106	0.093	-1.131	.259	1.12
Discipline: STEM	0.035	0.111	0.320	.750	1.22
Discipline: Social Sci.	-0.235	0.123	-1.904	.058	1.25

The regression results are visualized in Figure 6, where Exposure and Attitudes significantly predicted netspeak transfer, while Genre Awareness exerted a substantial adverse effect. This supplements the regression statistics reported in Table 7.

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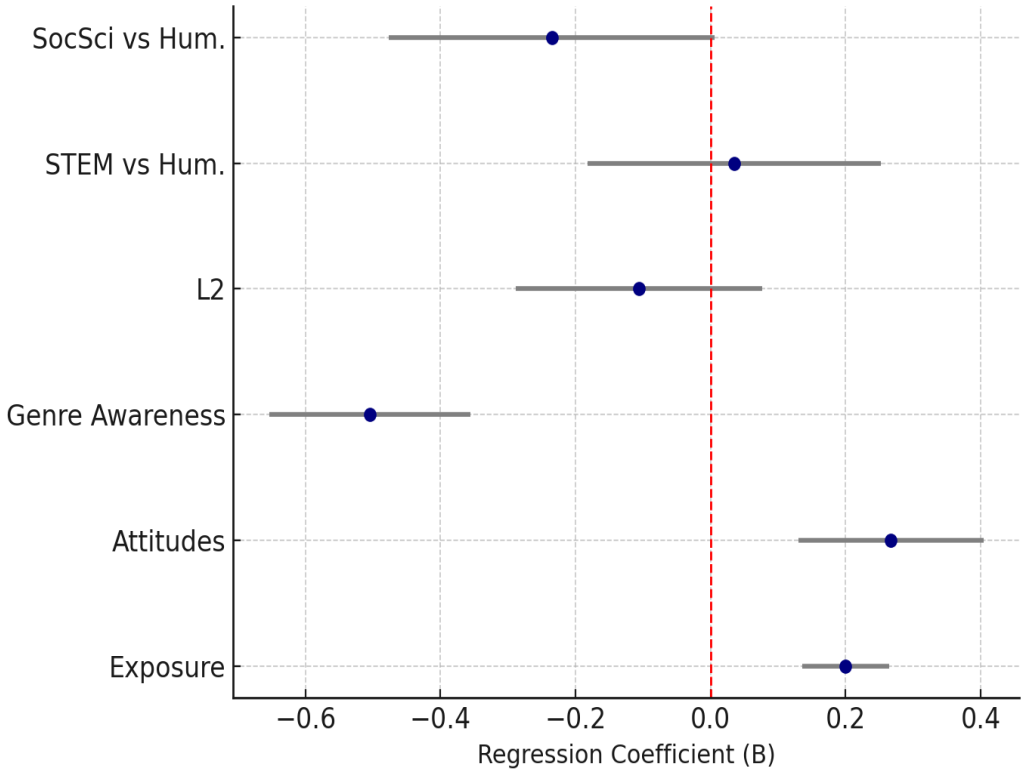

Figure 6: Regression coefficient plot.

4.6. Group Comparisons

A Welch's t-test comparing Transfer scores of STEM vs. Humanities students showed no significant difference ($t = 0.61$, $p = .545$), suggesting broadly similar transfer patterns across these disciplines.

4.7. Perceived Appropriateness

Ordinal logistic regression (Dires et al., 2025) was used to examine predictors of Appropriateness ratings. As shown in Table 8, Exposure (OR = 1.42, $p = .003$) and Attitudes (OR = 2.26, $p < .001$) increased the odds of rating netspeak as appropriate, while Genre Awareness reduced the odds (OR = 0.29, $p < .001$). L2 students were likelier to perceive netspeak as appropriate (OR = 1.84, $p = .010$). Disciplinary differences were mixed: Social Sciences students rated netspeak less relevant than Humanities students (OR = 0.43, $p = .009$), while STEM did not differ significantly.

Table 8: Ordinal logistic regression predicting appropriateness.

Predictor	OR	95% CI OR	p
Exposure	1.42	[1.13, 1.79]	.003
Attitudes	2.26	[1.59, 3.24]	<.001
Genre Awareness	0.29	[0.19, 0.44]	<.001
L2	1.84	[1.15, 2.94]	.010
STEM vs Hum.	0.63	[0.37, 1.09]	.097
SocSci vs Hum.	0.43	[0.23, 0.81]	.009

The ordinal logistic regression results are shown in Figure 7. Odds ratios greater than 1 for Exposure, Attitudes, and L2 status suggest a higher likelihood of rating netspeak as appropriate, whereas Genre Awareness lowered perceived appropriateness.

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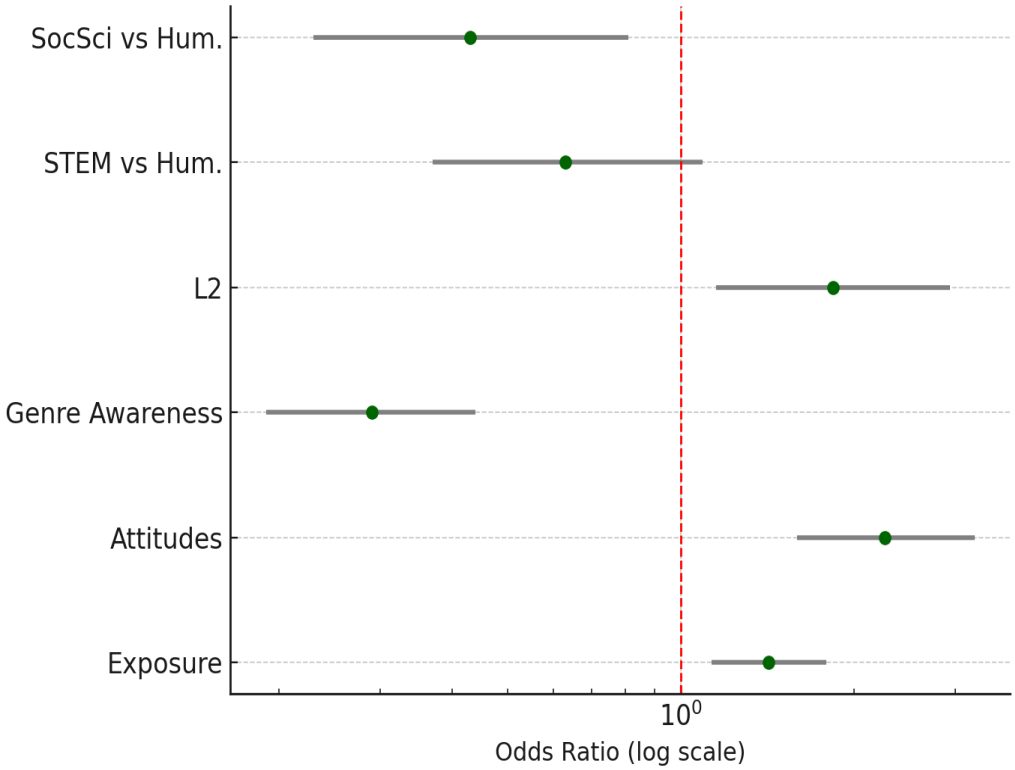

Figure 7: Odds ratio Forest plot.

4.8. Coding Reliability

Inter-rater reliability for coding writing tasks was substantial (Ju et al., 2025). On a 20% subset of formal assignments, observed agreement was $p_o = 0.86$, expected chance agreement was $p_e = 0.48$, yielding Cohen's $\kappa = 0.73$. This outcome indicates the consistent application of the coding scheme across raters, as shown in Table 9.

Table 9: Inter-rater reliability.

Feature	p_o (Observed)	p_e (Chance)	κ
Abbrev. in formal assignment	0.860	0.482	0.730

As demonstrated in Figure 8, observed coder agreement ($p_o = .86$) exceeded chance agreement ($p_e = .48$), yielding Cohen's $\kappa = .73$. This visual evidence supports the substantial inter-rater reliability.

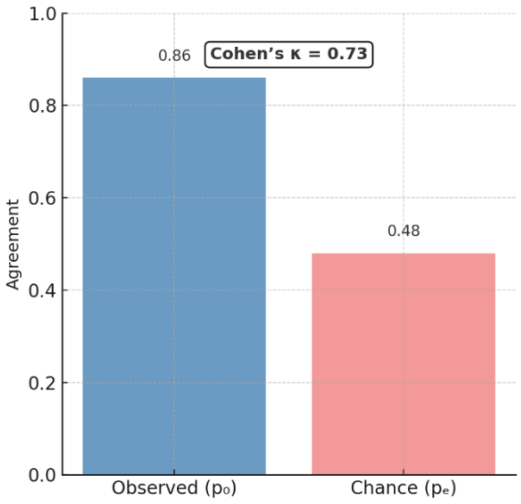

Figure 8: Inter-rater reliability.

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4.9. Qualitative Findings

To complement the quantitative results and deepen the understanding of students' netspeak practices, semi-structured interviews were conducted with a purposive subsample of participants (n = 24). Thematic analysis was employed to identify recurring patterns in students' perceptions, motivations, and self-regulation strategies related to the use of netspeak across academic and informal contexts. Three interrelated themes emerged.

Theme 1: Contextual Awareness and Audience Sensitivity

Participants consistently demonstrated a strong awareness of audience and communicative context when deciding whether to use netspeak. Students distinguished clearly between peer-oriented spaces and academic or authority-facing contexts, emphasizing intentional register control rather than habitual misuse of language.

One participant explained: *"With friends, I do not think twice. I use shortcuts and emojis because they help me communicate more effectively. But when it's an assignment or an email to a teacher, I automatically switch. It feels inappropriate otherwise."* (Participant 7, Humanities)

Another student noted: *"Even on LMS discussions, I'm careful. It's not fully formal, but it's still academic, so I limit emojis and slang." (Participant 12, STEM)*

This theme aligns with the quantitative finding that netspeak frequency sharply declined in formal tasks, supporting the negative association between genre awareness and netspeak transfer identified in the regression analysis.

Theme 2: Netspeak as Tone Management and Social Efficiency

Rather than viewing netspeak as linguistic laziness, participants framed it as a pragmatic resource for managing tone, emotion, and interpersonal efficiency, particularly in informal and semi-formal digital spaces.

As one participant described: *"Sometimes emojis are not about being informal, they're about avoiding misunderstanding. Without them, messages can sound rude."* (Participant 3, Social Sciences)

Another student commented: *"Short forms save time, especially in group chats. Everyone expects it, so it feels normal, not careless."* (Participant 19, Humanities)

These perceptions help explain why positive attitudes toward netspeak significantly predicted both transfer and higher ratings of appropriateness in the quantitative analyses. Students who viewed netspeak as functionally applicable were more tolerant of its presence in academic-adjacent contexts.

Theme 3: Unintentional Transfer Under Time Pressure

Despite having strong contextual awareness, several participants acknowledged the occasional unintentional transfer of netspeak features into formal writing, particularly under cognitive and temporal constraints.

One interviewee reflected: *"When I'm rushing or tired, I sometimes type 'u' or forget capitalization, especially if I've been chatting just before writing."* (Participant 15, STEM)

Another added: *"It's not that I think it's okay. It just slips sometimes when deadlines are close."* (Participant 21, Social Sciences)

This theme provides qualitative insight into why platform exposure emerged as a significant predictor of netspeak transfer in the regression model. Frequent switching between informal messaging and academic writing increases the likelihood of brief boundary slippage, even among students with high genre awareness.

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4.9.1. Integration of Quantitative and Qualitative Findings

Together, the qualitative findings provide context and explanation for the quantitative patterns observed in the study. While statistical analyses demonstrated strong contextual modulation and identified predictors of netspeak transfer, interview data revealed the mechanisms underlying these relationships: conscious register switching, pragmatic use of netspeak for tone management, and occasional unintentional transfer under pressure. This integration supports the interpretation of netspeak as a regulated communicative resource, not a deficiency in academic literacy.

5. DISCUSSION

This study examined the use of netspeak by Generation Z university students across informal, semi-formal, and formal academic contexts, as well as the factors predicting its transfer into academic writing. By integrating survey data, elicited writing tasks, and interview findings, the study provides a nuanced account of netspeak as a context-sensitive communicative resource rather than a threat to academic literacy.

5.1. Contextual Modulation and Register Awareness

A central finding of the study is the sharp decline of netspeak features from informal peer communication to formal academic writing. Quantitative analyses revealed that abbreviations, emojis, and creative punctuation were frequently used in peer chats but were nearly absent in formal assignments. Qualitative interview data further revealed that this pattern reflects deliberate register management, with students actively adjusting language use based on audience, purpose, and institutional expectations.

These findings align with sociolinguistic theories of register variation and code-switching, which emphasize speakers' ability to adapt linguistic resources to situational demands. Rather than supporting deficit-oriented claims that digital communication erodes academic writing skills, the results indicate that Generation Z students possess substantial metalinguistic awareness. Similar patterns of contextual adaptability have been reported in prior studies of digital discourse in higher education, reinforcing the view that netspeak operates as a regulated register rather than uncontrolled interference.

5.2. Predictors of Netspeak Transfer into Academic Writing

Regression analyses demonstrated that platform exposure and positive attitudes toward netspeak significantly predicted greater transfer into formal writing, whereas genre awareness exerted a substantial adverse effect. These relationships were further illuminated by interview data, which suggested that frequent engagement with messaging platforms increases the cognitive accessibility of netspeak features, occasionally leading to unintentional transfer, particularly under conditions of time pressure and multitasking.

At the same time, students with strong genre awareness consistently described conscious efforts to suppress netspeak in academic contexts. This finding extends existing research on code-switching by highlighting genre awareness as a key regulatory mechanism in digital academic writing. The results suggest that transfer is not primarily a matter of linguistic incompetence, but rather a function of exposure, attitudes, and situational constraints.

5.3. Perceptions of Appropriateness and Disciplinary Variation

The ordinal logistic regression revealed that perceptions of netspeak appropriateness varied systematically by exposure, attitudes, language background, and discipline. Students with higher exposure and more favorable attitudes were more likely to view netspeak as acceptable in academic-adjacent contexts, while those with higher genre awareness were more restrictive.

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The finding that L2 English users were more accepting of netspeak may reflect differing norms of digital communication and reduced stigma attached to non-standard forms.

Disciplinary differences were modest but meaningful: Social Sciences students were less likely than Humanities students to view netspeak as appropriate. This pattern may reflect stronger normative expectations regarding formality and professional tone within certain academic cultures. Importantly, however, disciplinary background did not significantly predict actual transfer into formal writing, suggesting that perceptions and practices are not always aligned.

5.4. Integrating Quantitative and Qualitative Evidence

The mixed-methods design enabled a deeper understanding of netspeak use by linking statistical patterns with students lived experiences. While quantitative results demonstrated strong contextual modulation and identified predictors of transfer, qualitative findings explained how and why these patterns occur. Students described netspeak as a pragmatic tool for efficiency and tone management, alongside a strong sense of responsibility to conform to academic norms. Occasional boundary slippage was framed as accidental rather than intentional, reinforcing the interpretation of netspeak as a controlled resource.

5.5. Theoretical and Pedagogical Implications

Theoretically, this study contributes to digital sociolinguistics by demonstrating that netspeak functions as a situational register governed by genre awareness, extending code-switching theory into digitally mediated academic contexts. The findings challenge binary distinctions between “formal” and “informal” language by showing how students dynamically navigate overlapping communicative spaces.

Pedagogically, the results suggest that instructional efforts should move beyond prohibitive approaches to netspeak. Instead of treating informal digital language as a problem to be eliminated, educators may benefit from explicitly teaching genre awareness, audience sensitivity, and code-switching strategies. Such an approach acknowledges students’ existing digital competencies while supporting their development of academic and professional communication skills.

6. CONCLUSION

This exploratory study examined the use of netspeak among Generation Z university students through surveys, writing tasks, and interviews. The findings show that netspeak is not used indiscriminately, but rather varies sharply by context: students frequently employ abbreviations and emojis in peer chats, yet rarely in formal assignments. Regression analysis confirmed that greater exposure to messaging platforms and positive attitudes toward netspeak increased the likelihood of transfer into formal writing, while genre awareness strongly reduced it. Appropriateness judgments were also shaped by exposure, attitudes, language background, and discipline, with L2 students and Humanities majors more accepting than their peers. Coding reliability tests further validated the study’s analytical framework. Rather than viewing netspeak as a linguistic threat, these results highlight Generation Z’s adaptability and ability to strategically switch registers. The challenge lies not in limiting netspeak itself but in strengthening students’ metalinguistic awareness to manage boundaries between informal and academic communication. While the study was limited to a single institution, it offers a replicable model for future cross-institutional and longitudinal research. More broadly, the findings contribute to ongoing debates on digital literacy, showing how netspeak can be reframed as a resource for expressive flexibility in higher education worldwide.

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6.1. Significance of this Study

This study offers several significant contributions. It applied a mixed-methods exploratory sequential design, combining survey data from 250 students with elicited writing tasks and interviews, thus providing both quantitative breadth and qualitative depth. The sample achieved balanced representation across STEM, Social Sciences, and Humanities, including L1 and L2 English speakers, enhancing internal validity. A validated coding scheme for netspeak features was employed, achieving substantial inter-rater reliability ($\kappa = 0.73$), strengthening confidence in the findings. Integrating statistical models (regression and ordinal logistic regression) with thematic insights also provided a nuanced understanding of predictors, perceptions, and contextual modulation of netspeak.

6.2. Limitations

Several limitations should be acknowledged. First, the study was conducted at a single public university, which limits statistical generalizability. Although students from multiple disciplines and language backgrounds were included, institutional norms may have influenced participants' practices and perceptions. Second, although the study employed a mixed-methods design, the qualitative component involved a relatively small interview subsample, which provided explanatory depth but may not have captured the full range of student experiences. Third, some findings relied on self-reported data, which may be subject to social desirability bias; however, this was partially mitigated through elicited writing tasks and independent coding of actual language use. Fourth, the cross-sectional design limits causal inference, and future longitudinal and experimental research could better examine developmental changes and instructional effects. Finally, the analysis focused on selected textual netspeak features and did not include multimodal elements such as GIFs and voice notes, which warrant attention in future research.

6.3. Future Research Directions

Future research should replicate this study across multiple institutions and cultural contexts to examine the generalizability of the findings. Longitudinal and experimental designs help clarify how genre awareness and code-switching skills develop over time and whether targeted instructional interventions can reduce unintentional transfer of netspeak. Further studies could also incorporate naturally occurring academic texts and multimodal digital practices, such as GIFs and voice notes, to capture a broader range of contemporary academic communication.

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Competing Interests

The authors declare no competing interests.

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Data Availability

The data used in this study were collected through questionnaires and interviews and are available from the corresponding author on reasonable request.

Contributions

N.M.: Conceptualization, methodology, writing—original draft preparation, formal analysis; M.A.L.: Supervision, investigation, resources; S.A.: project administration, Writing—review and editing; A. A.: Software, validation, formal analysis, data curation. All authors have read and agreed to the published version of the manuscript.

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