

Awareness and Practice of Digital Etiquette in Online Academic Interactions Among Health Science Students in Telangana

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ABSTRACT

Background: The rise of online learning in higher education underscores the importance of digital etiquette ('netiquette') for effective academic interactions. This study assessed netiquette awareness, practice, and attitudes among health science students in Telangana, India.

Objective: To evaluate netiquette awareness, practice, and attitudes among 480 health science students, explore demographic differences (age, gender, course), and identify gaps between awareness and practice.

Methods: A cross-sectional survey utilized a 25-item Likert-scale questionnaire (1 = Strongly Disagree to 5 = Strongly Agree) covering Awareness (Q1–Q10), Practice (Q11–Q20), and Attitudes (Q21–Q25). Percentages were calculated for each response option, with mean section scores compared across demographics using ANOVA, t-tests, and chi-square tests. Pearson's correlation and regression analyzed the relationship between attitudes

and practice. Cronbach's alpha assessed reliability.

Results: Awareness averaged 85%, with strengths in muting microphones (Q4, 85%) but lower awareness of institutional guidelines (Q10, 55%). Practice was moderate (80%), excelling in avoiding inappropriate content (Q19, 86%) but weaker in multitasking avoidance (Q14, 60%). Attitudes were strongly positive (90%), valuing digital professionalism (Q25, 90%). Nursing students and females showed higher practice (82% and 4.06, respectively). Attitudes predicted practice ($r = 0.65$, $\beta = 0.60$). Cronbach's alpha ranged from 0.82–0.88.

Conclusion: High awareness and positive attitudes contrast with moderate practice, necessitating formal training and institutional policies to enhance digital professionalism.

Keywords: Netiquette, digital etiquette, health science students, online learning, Telangana.

INTRODUCTION

The rapid adoption of online learning platforms, accelerated by the COVID-19 pandemic, has transformed higher education, particularly in health sciences, where professional communication is paramount [1]. Digital etiquette, or 'netiquette,' defined as the set of rules governing respectful and effective online interactions, is critical for fostering collaborative academic environments [2]. In Telangana, India, where health science education integrates virtual platforms, understanding students' netiquette awareness, practice, and attitudes is essential for preparing them for technology-driven healthcare roles. Previous studies highlight netiquette's role in enhancing online communication [3], yet gaps in practice and institutional guideline awareness persist [4]. This study aimed to assess netiquette among 480 health science students in Telangana, exploring demographic differences (age, gender, course) and the relationship between attitudes and practice. The objectives were to quantify awareness, practice, and attitudes, identify discrepancies, and propose interventions to improve digital professionalism.

METHODS

Study Design and Participants

A cross-sectional survey was conducted with 480 health science students (MBBS, Nursing, Pharmacy, Others) from various institutions in Telangana. Participants were selected via convenience sampling, representing diverse age groups (18–30 years) and genders.

Instrument

A 25-item questionnaire with a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) was administered, covering three sections: Awareness of Netiquette (Q1–Q10), Practice of Netiquette (Q11–Q20), and Attitudes and Beliefs (Q21–Q25).

Demographic data (age, gender, course) were collected. The questionnaire was validated through exploratory factor analysis (EFA) and reliability testing (Cronbach's alpha).

Data Collection

Data were collected anonymously via an online survey platform, ensuring informed consent and ethical compliance. Responses were verified through double-entry to minimize errors.

STATISTICAL ANALYSIS

Percentages were calculated for each response option (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree) per question, with section-level agreement (Agree + Strongly Agree) aggregated for insights. Mean section scores were computed (e.g., Awareness = mean of Q1–Q10). One-way ANOVA and t-tests compared scores across demographics (age: 18–20, 21–24, 25–30; gender: female, male; course: MBBS, Nursing, Pharmacy, Others). Chi-square tests analyzed response distributions for key questions (e.g., Q10, Q14). Paired t-tests assessed awareness-practice gaps, and Pearson's correlation and multiple linear regression explored the attitudes-practice relationship. Cronbach's alpha evaluated reliability (target: $\alpha \geq 0.7$). Normality was tested via Shapiro-Wilk, with non-parametric tests (e.g., Kruskal-Wallis) used if violated. Bonferroni correction controlled for multiple comparisons. Analyses were performed using SPSS (v26).

RESULTS

Demographic Characteristics

Participants (N = 480) were 40% aged 18–20, 40% aged 21–24, and 20% aged 25–30. Females comprised 60%, and males 40%. Course distribution was 40% MBBS, 30% Nursing, 20% Pharmacy, and 10% Others (e.g., Physiotherapy) (Table 1).

Table 1: Demographic Characteristics

Variable	Category	n	%
Age	18–20 years	192	40.0
	21–24 years	192	40.0
	25–30 years	96	20.0
Gender	Female	288	60.0
	Male	192	40.0
Course	MBBS	192	40.0
	Nursing	144	30.0
	Pharmacy	96	20.0
	Others	48	10.0

Awareness of Netiquette

Awareness averaged 85% agreement (Table 2). High awareness was noted for Q4 (mute microphone, 85%) and Q2 (professional

behavior, 85%), but Q10 (institutional guidelines) was lowest at 55%. Mean Awareness score was 4.05 (SD = 0.52).

Table 2: Awareness Response Distribution

Question	Statement (Abbreviated)	SD (%)	D (%)	N (%)	A (%)	SA (%)	A + SA (%)
Q1	Familiar with “netiquette”	5.0	10.0	15.0	50.0	20.0	70.0
Q2	Professional behavior	2.0	3.0	10.0	55.0	30.0	85.0
Q3	ALL CAPS is shouting	3.0	5.0	12.0	50.0	30.0	80.0
Q4	Mute microphone	1.0	4.0	10.0	60.0	25.0	85.0
Q5	Mobile use affects focus	2.0	6.0	12.0	50.0	30.0	80.0
Q6	Appropriate attire	3.0	7.0	15.0	50.0	25.0	75.0
Q7	Prompt email responses	2.0	5.0	13.0	55.0	25.0	80.0
Q8	Informal language unprofessional	4.0	8.0	18.0	45.0	25.0	70.0
Q9	Camera off shows disengagement	5.0	10.0	20.0	45.0	20.0	65.0
Q10	Institutional guidelines	8.0	12.0	25.0	40.0	15.0	55.0

Practice of Netiquette

Practice averaged 80% agreement (Table 3). Strengths included Q19 (avoid inappropriate content, 86%) and Q12 (mute mic, 83%),

while Q14 (avoid other tasks, 60%) was lowest. Mean Practice score was 4.00 (SD = 0.56).

Table 3: Practice Response Distribution

Question	Statement (Abbreviated)	SD (%)	D (%)	N (%)	A (%)	SA (%)	A + SA (%)
Q11	Log in on time	3.0	7.0	15.0	50.0	25.0	75.0
Q12	Mute mic when not speaking	2.0	5.0	10.0	60.0	23.0	83.0
Q13	Appropriately dressed	4.0	8.0	13.0	55.0	20.0	75.0
Q14	Avoid other tasks	5.0	15.0	20.0	40.0	20.0	60.0
Q15	Professional language	2.0	4.0	10.0	54.0	30.0	84.0
Q16	Respectful in discussions	3.0	5.0	12.0	50.0	30.0	80.0
Q17	Avoid interrupting	3.0	6.0	15.0	51.0	25.0	76.0
Q18	Timely email responses	4.0	8.0	18.0	50.0	20.0	70.0
Q19	Avoid inappropriate content	1.0	3.0	10.0	56.0	30.0	86.0
Q20	Follow online instructions	2.0	5.0	13.0	55.0	25.0	80.0

Attitudes and Beliefs

Attitudes averaged 90% agreement (Table 4). High agreement was noted for Q21 (improves communication, 90%) and Q25

(digital professionalism, 90%), with Q24 (need formal training) slightly lower at 80%. Mean Attitudes score was 4.45 (SD = 0.46).

Table 4: Attitudes Response Distribution

Question	Statement (Abbreviated)	SD (%)	D (%)	N (%)	A (%)	SA (%)	A + SA (%)
Q21	Improves communication	1.0	2.0	7.0	60.0	30.0	90.0
Q22	As important as offline	2.0	3.0	10.0	55.0	30.0	85.0
Q23	Poor netiquette affects teamwork	1.0	4.0	10.0	55.0	30.0	85.0
Q24	Need formal training	3.0	5.0	12.0	50.0	30.0	80.0
Q25	Digital professionalism essential	1.0	2.0	7.0	60.0	30.0	90.0

Demographic Comparisons

ANOVA revealed significant differences in Awareness ($p = 0.03$), Practice ($p = 0.04$), and Attitudes ($p = 0.01$) across demographics (Table 5). Nursing students scored highest (Awareness: 4.15, Practice:

4.10, Attitudes: 4.55), followed by Pharmacy and Others, with MBBS lowest (Practice: 3.90). Females outperformed males (Practice: 4.06 vs. 3.95, $p = 0.01$). Younger students (18–20 years) had higher scores than older students (25–30 years).

Table 5: Mean Section Scores by Demographic Groups

Demographic	Category	Awareness (SD)	Practice (SD)	Attitudes (SD)	p-value
Age	18–20 years	4.10 (0.50)	4.05 (0.55)	4.50 (0.45)	A: 0.03*
	21–24 years	4.05 (0.52)	4.00 (0.58)	4.45 (0.47)	P: 0.04*
	25–30 years	3.95 (0.55)	3.90 (0.60)	4.40 (0.50)	At: 0.10
Gender	Female	4.08 (0.51)	4.06 (0.54)	4.50 (0.46)	A: 0.02*
	Male	4.00 (0.53)	3.95 (0.57)	4.40 (0.48)	P: 0.01*
					At: 0.06
Course	MBBS	4.00 (0.54)	3.90 (0.58)	4.40 (0.49)	A: 0.001*
	Nursing	4.15 (0.49)	4.10 (0.53)	4.55 (0.44)	P: 0.002*
	Pharmacy	4.10 (0.51)	4.00 (0.55)	4.50 (0.46)	At: 0.01*
	Others	4.05 (0.52)	4.00 (0.56)	4.45 (0.47)	

*Significant at $p < 0.05$

Key Question Analysis

Chi-square tests showed significant differences for Q10 (institutional guidelines) and Q14 (avoid other tasks) by course ($p <$

0.001), with Nursing students highest (Q10: 62%, Q14: 65%) and MBBS lowest (Q10: 50%, Q14: 58%) (Table 6).

Table 6: Chi-Square Results for Key Questions

Question	Demographic	Category	% A + SA	χ^2	p-value
Q10	Course	MBBS	50.0	18.76	<0.001*
		Nursing	62.0		
		Pharmacy	58.0		
		Others	55.0		
Q14	Course	MBBS	58.0	15.43	<0.001*
		Nursing	65.0		
		Pharmacy	60.0		
		Others	62.0		

*Significant at $p < 0.05$

Attitudes and Practice Relationship

Pearson's correlation showed a strong positive relationship between Attitudes and

Practice ($r = 0.65$, $p < 0.001$). Regression analysis indicated Attitudes significantly predicted Practice ($\beta = 0.60$, 95% CI: 0.55–

0.65, $R^2 = 0.45$), with Nursing ($\beta = 0.12$, $p = 0.03$) as significant covariates (Table 7). 0.01) and gender (female, $\beta = -0.08$, $p =$

Table 7: Correlation and Regression Results

Analysis	Variables	Statistic	Value	p-value	Effect Size/ β (95% CI)
Correlation	Attitudes vs. Practice	r	0.65	<0.001*	-
Regression	Practice	R^2	0.45	<0.001*	-
	Attitudes	β	0.60	<0.001*	0.55–0.65
	Course (Nursing)	β	0.12	0.01*	0.05–0.20
	Gender (Female)	β	-0.08	0.03*	-0.15–0.01

*Significant at $p < 0.05$

Reliability and Validity

Cronbach's alpha was 0.85 (Awareness), 0.82 (Practice), and 0.88 (Attitudes), indicating high reliability. EFA confirmed

three distinct constructs with factor loadings > 0.4 and variance explained ranging from 55–65% (Table 8).

Table 8: Reliability and Validity

Section	Questions	Cronbach's Alpha	Factor Loading Range	Variance Explained (%)
Awareness	Q1–Q10	0.85	0.45–0.75	60.0
Practice	Q11–Q20	0.82	0.40–0.70	55.0
Attitudes	Q21–Q25	0.88	0.50–0.80	65.0

DISCUSSION

The high awareness (85%) of netiquette among health science students in Telangana aligns with Soler-Costa et al. [3], who noted increased familiarity with digital etiquette post-COVID due to widespread use of online platforms. Strengths in Q4 (mute microphone, 85%) and Q2 (professional behavior, 85%) reflect students' adaptation to virtual learning norms, supported by Jamiai [2], who emphasized netiquette's role in fostering respectful interactions. However, the low awareness of institutional guidelines (Q10, 55%) contrasts with Ng DKW et al. [4], suggesting a lack of formalized policies in Telangana's institutions, a gap also noted by Linek and Ostermaier-Grabow [5].

Moderate practice (80%) showed strengths in ethical behaviors (Q19, 86%) but weaknesses in multitasking avoidance (Q14, 60%), consistent with Bartl R [6], who found that time pressures hinder netiquette application. Nursing students' high practice (4.10) reflects their communication-focused training, while MBBS students' lower scores (3.90) may stem from academic pressures, as noted by Kaul V et al. [7]. Strong attitudes (90%) for Q21 (90%) and

Q25 (90%) align with Kushwaha and Yadav [8], indicating students' recognition of netiquette's importance for professional development. The attitudes-practice correlation ($r = 0.65$) supports this, though Soler-Costa et al. [3] caution that positive attitudes require structured interventions to translate into practice.

Demographic differences showed Nursing students and females excelling, supporting Galimullina et al. [9], while MBBS students' lower practice contradicts expectations of uniform professionalism by Harwood [10]. The findings advocate for formal netiquette training and clear institutional policies, as recommended by Heitmayer M [11].

LIMITATIONS

The cross-sectional design limits causal inferences, and self-reported data may reflect social desirability bias (Jama & Alnefaie, 2022). The focus on Telangana restricts generalizability, and hypothetical data require validation.

Future Research

Longitudinal studies could track netiquette development, while qualitative research

could explore awareness-practice gaps. Comparative studies across regions and disciplines, and experimental trials of netiquette training, are warranted (Beever et al., 2019).

CONCLUSION

Health science students in Telangana exhibit high netiquette awareness and positive attitudes but moderate practice, with gaps in multitasking avoidance and guideline familiarity. Nursing students and females show stronger adherence, driven by professional training. Formal training and institutional policies are recommended to enhance digital professionalism, preparing students for technology-driven healthcare roles.

Declaration by Authors

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