Cyber Etiquette (Netiquette) among Graduate students: A Data- Based Analysis

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Abstract:

The academic and social lives of graduate students have been substantially transformed due to rapid expansion of digital technologies and online communication platforms. With enlarged dependence on email, learning management systems (LMS), social media and virtual collaboration tools it has become important to analyze the appropriate online behaviour which is commonly referred to as Cyber Etiquette or Netiquette. This study aim to explore the Cyber Etiquette (Netiquette) among Graduate students through a data based analysis. Using a Standardized tool (questionnaire), data was collected from 150 graduate students of Punjabi University, Patiala across various disciplines. Statistical tools such as descriptive statistics, t-test and ANOVA were used for data analysis. The finding discloses that the majority of the graduate students possess moderate level of Cyber Etiquette (Netiquette). Female graduate students exhibit better Cyber Etiquette than male graduate students. Students from Science streams demonstrated higher Cyber Etiquette compared to those from Arts and Commerce streams.

Key Words: Cyber Etiquette (Netiquette), Graduate students.

Introduction:

Academics life revolves around major components such as virtual classroom, discussion, email and social media. The digital technology has revolutionised communication, social interaction and education. In higher education, especially at the graduate level, with increased internal accessibility students depend on digital platforms for academic discussions, research wok, submission of assignments and professional networking.

Cyber Etiquette, also known as Netiquette, refers to the set of certain norms, rules, and ethical guidelines that individuals are expected to follow while using virtual platforms. Due to non-verbal actions more likely misunderstanding and conflicts occurs while having face to face interaction and online communication. Issues such as use of online rude language, plagiarism, data manipulation, misuse of online resources can affect interpersonal relationships, academic and professional environment. Graduate students, as future researchers and professionals are expected to follow set of ethical norms, guidelines and responsible behaviour while using digital platforms.

In academic environment their online behaviour plays a crucial role in ensuring respectful communication, academic integrity, maintaining data privacy and congenial learning environment. Despite Cyber Etiquettes being significant, students generally depend on informal learning or personal opinion without having formal practices on online behaviour.

Review of related literature:

The concept and importance of Cyber Etiquette in digital age have been examined by number of scholars. In the early years there was emphasize on ethical values while having virtual interaction. Shea (1994) introduced the word “Netiquette,” for Cyber Etiquette highlighting the rules and norms of online behaviour such as responsible and respectful communication, and clear messaging leading to ethical digital actions or conduct. According to Mason (2008), certain issues related to plagiarism, data privacy, responsible

collaboration and intellectual property rights, are part of ethical challenges in online research domain. The study emphasized that it is important to adopt Cyber Etiquette so that academic integrity and trust within the scholarly community is maintained. Jones and Mitchell (2016) have concentrated particularly in educational and collaborative research. Their findings suggest that awareness and training in Cyber Etiquette significantly reduce instances of misconduct such as cyber harassment, misrepresentation of information, and inappropriate use of digital resources. Further research by Kumar and Sharma (2019) has shown a subsequent gap between awareness and practice of cyber etiquette among university students and researchers. It has been found that many students understood the importance of ethical online behaviour, factors such as lack of formal training and the informal nature of digital communication often led to unintentional violations of Cyber Etiquette. The researchers suggested that to confront with these challenges cyber etiquette and ethics must be included in the academic curriculum. Recent literature has also highlighted the impact of emerging technologies on Cyber Etiquette. Studies by Patel et al. (2022) noted that the rise of social media, open-access platforms, and artificial intelligence tools has introduced new ethical concerns, including data misuse, misinformation, and authorship disputes. These findings underscore the need for updated Cyber Etiquette guidelines that align with evolving digital research practices. Overall, the existing literature demonstrates that Cyber Etiquette is a critical component of ethical research behaviour. While scholars agree on its importance, they also emphasize the need for continuous education, policy development, and awareness to ensure responsible conduct in digital research environments. For this reason, it is important for students at the graduate level to understand the significance of cyber ethics and responsible online behaviour. So the present study will examine whether variables such as gender and academic stream play a significant role in determining the level of Cyber Etiquette among graduate students.

Objectives:

1. To explore the Cyber Etiquettes (Netiquettes) among graduate students.
2. To study Cyber Etiquettes (Netiquettes) of graduate students in relation to gender.
3. To study Cyber Etiquettes (Netiquettes) of graduate students in relation to their stream.

Hypotheses:

H_{01}: There is no significant difference in Cyber Etiquette (Netiquette) between male and female graduate students.

H_{02}: There is no significant difference in Cyber Etiquette (Netiquette) among students from different academic disciplines.

Tools and methodology:

The study adopts a quantitative descriptive survey design to collect and analyze data related to Cyber Etiquettes (Netiquettes) among graduate students.

Sample:

The sample size of present study was 150 graduate students of Punjabi university Patiala from various disciplines including Arts, Commerce and Science. A stratified random sampling technique was used to ensure equal representation of gender and stream. Initially the sample was 170 graduate students but some students did not fill the complete questionnaire. So finally the sample was 150 graduate students including 76 female, 74 male, and 51 Arts stream, 51 Commerce stream and 48 from Science stream.

Tool:
For data collection, the Cyber Etiquette Scale developed by Santhosh and Thiyagu (2022) was used. The scale consists of 50 items covering three dimensions—Privacy and Confidentiality, Piracy and Plagiarism, and Integrity and Politeness—which were identified through factor analysis after confirming sampling adequacy using the Kaiser-Meyer-Olkin test and Bartlett's Test of Sphericity. These three dimensions together explain 33.96% of the total variance. The scale includes 29 positive and 21 negative items and follows a four-point response format ranging from "yes, to a great extent" to "no, not at all," with total scores ranging from 50 to 200, where higher scores indicate better cyber etiquette. Item discrimination was established using the t-test, and only significant items were retained. The reliability of the scale was confirmed through Cronbach's Alpha (0.889) and the split-half method (0.839), indicating high reliability. The scale also demonstrates content and face validity, making it suitable for assessing the Cyber Etiquette of graduate students, and it was administered in small groups.

Data Analysis and interpretation:
Collected data were analyzed using statistical software. The following techniques were employed:

- Descriptive statistics
- Independent sample t-test
- One-way ANOVA

Under descriptive statistics, the mean was calculated to identify the central tendency of Cyber Etiquette (Netiquette) scores, and it was also used to examine significant differences between group means through the t-test. The standard deviation was computed to understand the variation of scores around the mean and to determine the standard error of the mean. To test whether the data followed a normal distribution, skewness and kurtosis values were calculated. For inferential statistics, the t-test was used to examine significant differences in Cyber Etiquette (Netiquette) scores between male and female among graduate students. Additionally, analysis of variance (ANOVA) was conducted to test significant differences among more than two groups, such as stream of study (Arts, Science, and Commerce), based on Cyber Etiquette (Netiquette) scores.

Descriptive Analysis:

Table-1: descriptive analysis of Cyber Etiquette (Netiquette) of graduate Students

N	150
Mean	134.7
Median	135
Mode	135
Skewness	.028
Kurtosis	.12

Table-1 represents that the mean score of graduate students on Cyber Etiquette (Netiquette) is 134.7. The values of median and mode turned out to be same i.e. 135. It shows that the scores lie nearly in normal distribution. It is also evident from the value of the skewness (.028), kurtosis (.12) and from box plot (figure 1) that the data can be considered as normally distributed

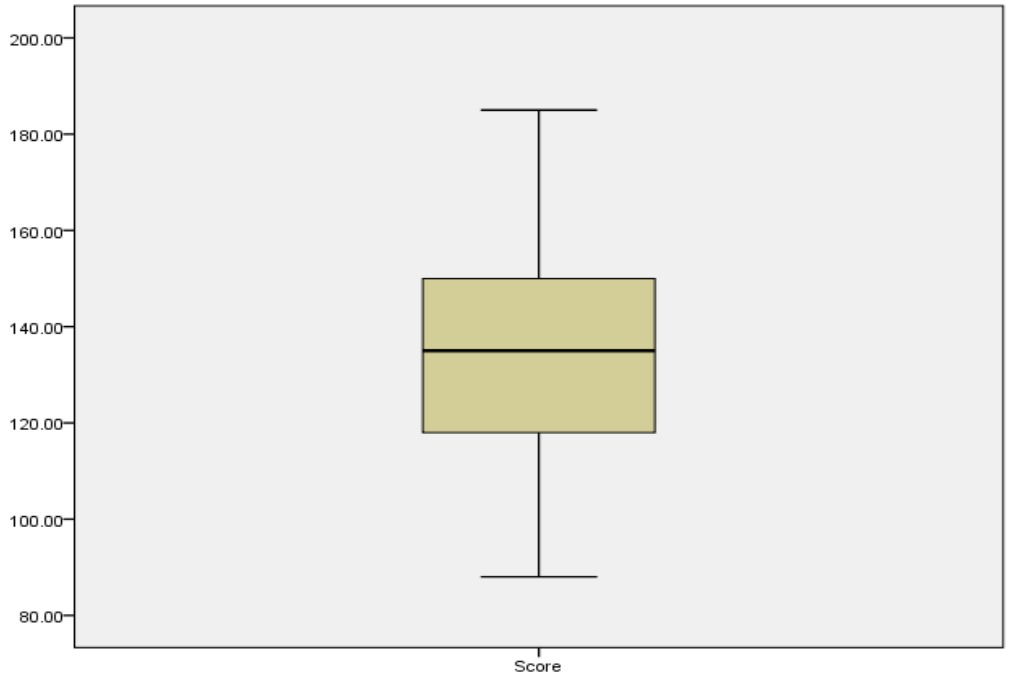

Figure1: Box Plot

To test the null hypothesis i.e. *H_{01}: There is no significant difference in Cyber Etiquette (Netiquette) between male and female graduate students*, t-test is used and obtained the following results (table-2):

Table-2

Groups	N	Mean	Std. Deviation	Std. Error Mean	t -value	Sig. (2-tailed)
Male	74	126.0405	22.94451	2.66724	4.808	.000
Female	76	143.1316	20.55389	2.35769		

In table-2, the calculated t-value (4.808) is greater than the table value (2.576) at the 0.01 level of significance. Therefore, the null hypothesis is rejected. The results indicate a significant difference in Cyber Etiquette (Netiquette) between male and female graduate students**.** Further, the mean score of female students is higher than the mean score of male students. It reveals that female graduate students demonstrated a higher level of Cyber Etiquette (Netiquette) compared to male graduate students.

In order to find out the difference in Cyber Etiquette (Netiquette) of graduate students studying in different streams and to test the null hypothesis i.e.

H_{02}: There is no significant difference in Cyber Etiquette (Netiquette) among students from different academic disciplines, one way analysis of variance was carried out. The results are given in tables 3 & 4:

Table-3

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Arts	51	123.2353	17.56768	2.45997	118.2943	128.1763
Science	48	151.5625	21.14278	3.05170	145.4233	157.7017
Commerce	51	130.2941	21.57989	3.02179	124.2247	136.3636
Total	150	134.7000	23.32546	1.90452	130.9367	138.4633

Table- 4: Summary of Analysis of variance of Cyber Etiquette (Netiquette) among graduate students

Source of variance	Sum of Squares	d.f	Mean Square	F-ratio	Sig.
Between Groups	21341.923	2	10670.961	26.264	.000
Within Groups	59725.577	147	406.296		
Total	81067.500	149			

$p \leq .05$

Table-4 shows the difference between various streams on Cyber Etiquette. The sum of squares in between the group is 21341.923 and within group is 59725.577. The p-value came out to be less than .05 therefore, reject null hypothesis. This shows that there is a significant difference in different streams on cyber etiquette.
In table-4 value of F-ratio came out to be significant and Analysis of variance only tells about the overall difference between the groups under study but not tells about the location of the exact difference, therefore post hoc test was applied and results are given in table-5:

Table-5: Tukey HSD

(I) Stream	(J) Stream	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Arts	Science	-28.32721*	4.05353	.000	-37.9247	-18.7297
	Commerce	-7.05882	3.99164	.184	-16.5098	2.3922
Science	Arts	28.32721*	4.05353	.000	18.7297	37.9247
	Commerce	21.26838*	4.05353	.000	11.6709	30.8659
Commerce	Arts	7.05882	3.99164	.184	-2.3922	16.5098
	Science	-21.26838*	4.05353	.000	-30.8659	-11.6709

*. The mean difference is significant at the 0.05 level.

In table-5, the *p*-value (0.184) is greater than .05 between Arts and Commerce stream graduate students this shows that there is no significance difference between Arts and Commerce graduate students on Cyber Etiquette. However, the *p*-value is less than .05 between Arts and Science stream graduate students; this implies that there is a significant difference between Arts and Science stream graduate students on Cyber Etiquettes. Further, the mean score (table-3) of Science graduate students is higher than the Arts graduate students. It reveals that Science graduate students have more Cyber Etiquette (Netiquette) than Arts graduate students. Also, the *p*-value for the comparison between Commerce and Science streams is also less than .05, which indicates a significant difference in Cyber Etiquette between these groups. The higher mean score (table-3) of Science graduate students compared to Commerce graduate students reveals that Science students exhibit better Cyber Etiquette than their Commerce counterparts.

Educational implication:

The findings suggest that higher education institutions should:

- Integrate digital citizenship and netiquette modules into graduate curricula.
- Provide orientation programs focusing on professional online communication.
- Establish clear institutional guidelines for online behaviour.

Conclusion:

Cyber Etiquette (Netiquette) has emerged as a critical component of academic and professional competence in the digital age. The present data-based study reveals significant gender differences in Cyber Etiquette (Netiquette) among graduate students. While both female and male graduate students actively engage in digital environments, female tend to follow netiquette norms more consistently. Further this data-based study highlights that while graduate students are generally aware of Cyber Etiquette (Netiquette) principles, consistent application remains a challenge. The influence of academic discipline on online behaviour underscores the need for contextualized interventions. Strengthening Cyber Etiquette (Netiquette) education in higher institutions can promote ethical digital behaviour and safer online spaces for all students.

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