

The Interaction Between Anonymity of Virtual Identities and Evaluation Topics: Negative Impacts on Teens' Mental Health

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Abstract. As online anonymity grew, people felt unrestrained in making negative statements and an increasing number of teenagers suffered as a result, so the chief aim of this piece was to make clear the impact of the interplay between online anonymity and diverse evaluation themes on the mental well-being of adolescents; in light of the contributions across various fields within the literature, it carried out a more all-encompassing study by taking into account anonymity and different evaluation topics, such as those related to appearance and performance, concentrating on their interactions, and this article featured a quantitative study involving 138 social media users aged 13 to 18 in China where a set of questions was posed using the Likert scale and the hypotheses put forward were tested via ANOVA; the research findings showed that regarding appearance-related criticisms, feedback from known sources led to considerably more severe psychological damage compared to anonymous ones while no such distinction was noticed for academic feedback, but baseline anxiety turned out to be a powerful predictor of perceived harm, explaining a great deal of the variance in the outcomes and moreover, gender moderated the effect of anonymity, with female adolescents being more negatively influenced by anonymous evaluations; these results emphasized the context-dependent characteristic of online feedback and underlined the crucial parts that pre-existing anxiety and gender play in forming adolescents' reactions to digital communication and this article offered empirical evidence and solid statistical analysis to illustrate the interaction between anonymity and review topics on adolescent mental health, which assisted in broadening the comprehensiveness of the literature up to that point.

Keywords: anonymity, evaluation topics, interaction, teenagers, mental health

1. Introduction

Adolescents subjected to online cyberbullying face a heightened risk of developing psychological problems like depression, anxiety, and reduced self-esteem [1], and long-term exposure to online bullying could worsen these issues and might even result in extreme consequences such as suicide [2], so Nixon [3] stressed that online bullying posed a great threat to the well-being of adolescents as victims reported more severe depressive symptoms, anxiety, loneliness, self-harm, and suicidal tendencies, also the subject of criticism influenced its impact, for example, negative remarks about appearance harmed self-esteem and body image to a large extent and nearly half of the teenagers

said they had been exposed to online bullying related to their physical appearance [4], while on the other hand, feedback regarding academic performance affected adolescents in different ways as negative academic assessments weakened self - efficacy and increased academic anxiety [5], but constructive, process - oriented feedback strengthened confidence in learning abilities [6].

Anonymity and the online de - inhibition phenomenon are crucial elements that could exacerbate such damage, and the lack of face - to - face encounters and diminished responsibility in online environments can result in de - inhibited behaviors [3], for instance, qualitative interviews conducted by Reason et al. [7] disclosed that anonymous wrongdoers frequently behave more audaciously and harshly while victims endure more intense disgrace and powerlessness, moreover, anonymous platforms have higher incidence rates of aggressive conduct which implies that concealed identities make it easier for people to engage in more adverse evaluations [8], and research also showed that even though teenagers might display less instant anger when facing anonymous criticism, they often suffer from extended self - doubt, and the anonymity of those who evaluate decreases the sense of responsibility, causing young people to consider the criticisms as manifestations of their true shortcomings instead of regarding them as malicious intentions, thereby deepening the influence of external judgment [9].

Thus, diverse forms of social media content - like comments regarding appearance or academic achievement - might influence adolescents in distinct ways and moreover, the anonymity of the source could further modulate these influences, but most extant studies concentrate on these elements separately, which underlines the necessity to look into how source invisibility and content theme work together to form psychological results and this research aimed to probe into this interaction empirically.

2. Methods

2.1. Participants and procedure

To explore how anonymity interacts with evaluation topics regarding adolescent mental well - being, a scenario - based questionnaire employing a Likert scale was carried out among adolescents aged 13 to 18 from China with prior parental consent, and before the questionnaire was administered, this study measured their baseline anxiety levels; during the questionnaire, participants were shown a short vignette or a simulated social media situation where they got a negative evaluation and the scenario text altered the source and content according to the assigned condition, for instance, "You post a photo/grade online and get a negative comment. It is from [an anonymous user versus your best friend] and the comment criticizes your [appearance versus academic achievement], stating it's 'not up to standard'," and after reading the scenario, participants pictured themselves in that situation and then responded to a set of questions.

2.2. Study design and measures

A 2×2 between - subjects factorial design founded on questionnaire scenarios was utilized and participants were randomly allocated to one out of four conditions so as to preclude carryover effects among conditions; after the scenario, the measures comprised the State - Trait Anxiety Scale for Children and Adolescents (SASC - A) and the State Self - Esteem Scale (SSES), both of which are 5 - point Likert - type scales, together with items evaluating perceived harm and trustworthiness and these measures evaluated the participants' instant anxiety, alterations in self - worth, and the mediating processes between modifications in anxiety and self - esteem.

2.3. Data analysis

Before conducting the analysis, we removed participants who couldn't connect at all to the scenario or were regarded as "uncertain," which left us with 138 valid questionnaires ($N = 138$) and their distribution among the conditions was as follows: 28 in anonymous $\times$ appearance, 32 in anonymous $\times$ learning, 58 in known $\times$ appearance, and 20 in known $\times$ learning; Figure 1 below would show the sample size distribution of each group, offering a clear view of the experimental data; the scales had excellent reliability as the Trait Anxiety Scale for Children (TASC; baseline anxiety) had a Cronbach's α of 0.913 and the emotional response scale also had a Cronbach's α of 0.93.

For the ANOVA analysis, we verified the homogeneity of variance ($W = 0.50$, $p = 0.685 > 0.05$) and normal distribution assumptions (all cell sizes $n \geq 20$). Descriptive statistics (mean $\pm$ SD) for perceived harm across conditions were as follows: Appearance $\times$ Anonymous: 2.43 ± 1.29 ; Appearance $\times$ Known: 3.57 ± 1.42 ; Performance $\times$ Anonymous: 2.56 ± 1.29 ; Performance $\times$ Known: 2.45 ± 1.19 by Figure 2.

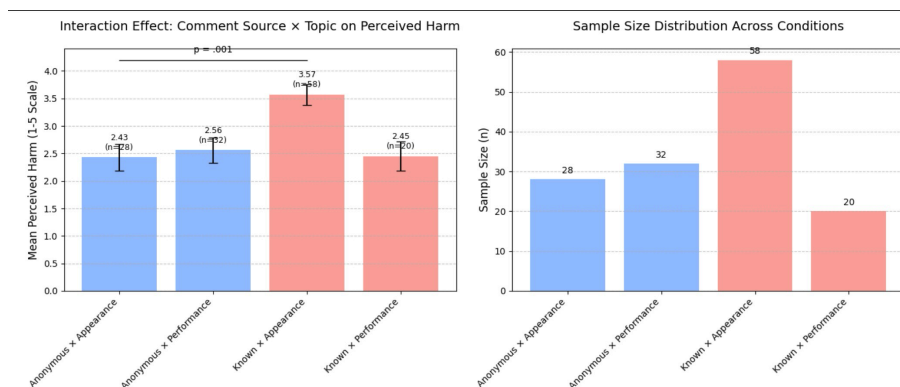


Figure 1. Sample size distribution across conditions

Note: Error bars stand for standard error (SE), there were 28 participants in Anonymous $\times$ Appearance, 32 in Anonymous $\times$ Performance, 58 in Known $\times$ Appearance and 20 in Known $\times$ Performance and perceived harm was measured from 1 to 5 (1 meaning least harmful and 5 meaning most harmful).

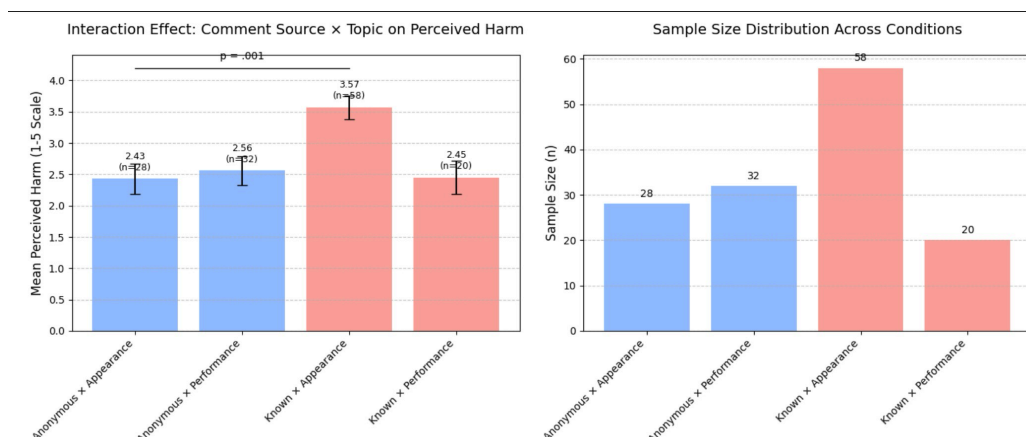


Figure 2. Interaction effect: comment source x topic on perceived harm

Note: Left panel: The error bars stand for the interquartile range (IQR), showing the spread of the scores regarding how harmful something was perceived to be and there was a highly significant p value of less than .001 which meant that there was a substantial interaction between where the review came from (anonymous compared to known) and what was being evaluated (appearance versus performance) when it came to the perception of harm as determined by a two - tailed test.

2.4. Discussion

The ANOVA results revealed significant main effects of anonymity, $F(1, 134) = 7.33, p = .008, \eta^2 = .052$, with higher perceived harm in non-anonymous conditions ($M = 3.01, SD = 1.41$) compared to anonymous conditions ($M = 2.50, SD = 1.29$), and of topic, $F(1, 134) = 4.05, p = .046, \eta^2 = .029$, with greater harm reported for appearance evaluations ($M = 3.00, SD = 1.41$) than for learning ability evaluations ($M = 2.51, SD = 1.24$). These main effects were qualified by a significant interaction, $F(1, 134) = 6.59, p = .011, \eta^2 = .047$. Simple effect analysis showed that under appearance evaluation, identified-acquaintance comments led to significantly greater harm than anonymous comments, $F(1, 84) = 12.97, p = .001$, whereas the anonymity effect was nonsignificant for learning ability evaluations, $F(1, 50) = 0.10, p = .755$.

Furthermore, we divided the participants into "low - anxiety" and "high - anxiety" groups based on the median of their initial TASC anxiety scores so as to add to the descriptions and take them into account in the subsequent analyses; when we controlled for the baseline anxiety (TASC) by means of an ANCOVA, the principal effects of anonymity, topic, and their combination were no longer statistically significant (all p 's $> .34$), but TASC was a strong predictor of perceived harm, $F(1, 133) = 106.78, p < .001, \eta^2 = .445$, and a gender moderation analysis also showed that there was a notable Anonymity $\times$ Gender interaction, $F = 5.60, p = .019$, which meant that the effects of anonymity were stronger among female participants.

3. Limitations and future studies

The experimental samples consisted solely of participants from China, which brought about geographical restrictions and moreover, the period between the pre - test and post - test of the questionnaire was overly brief, leading to a rather weak connection with the factors being measured, so future research ought to include more varied samples and adopt longitudinal designs to better grasp long - term effects.

4. Conclusion

This research disclosed the distinct psychological influence that technology - mediated feedback has on teenagers and by experimentally comparing the origins of virtual and real - life feedback as well as altering the content of these evaluations, initial evidence indicated that negative criticism related to appearance conveyed via familiar online identities was more harmful to teenagers' mental well - being especially among girls and this result enhanced our comprehension of how different feedback types and sources interact regarding teenagers' mental health and also informed parents, teachers, and platform designers about the heightened susceptibility that teenagers have in virtual settings and the outcomes could guide the development of improved online moderation and digital literacy programs and prompt friends and family members to adopt supportive ways of communicating when giving feedback to teenagers and ultimately grasping these dynamics was essential for assisting teenagers in dealing with digital social feedback more resiliently.

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