Flaming among first-time group support system users

Milam Aiken\textsuperscript{a,*}, Bennie Waller\textsuperscript{b,1}

\textsuperscript{a}School of Business Administration, University of Mississippi, University, MS 38677, USA
\textsuperscript{b}School of Business, Francis Marion University, P.O. Box 100547, Florence, SC 29501-0547, USA

Received 24 March 1999; accepted 1 August 1999

Abstract

Numerous benefits, including increases in efficiency, effectiveness, and participant satisfaction, have been noted in the literature when electronic meetings are used in place of traditional, oral meetings. However, several costs, or process losses, have also been observed, including an increase in ‘flaming’ characterized by insults or even obscenities. This paper describes how flaming may be correlated with numerous task and group member characteristics. Results of a case study show that a large number of flames are unrelated to the topic and that a small minority of those writing comments are responsible for the majority of flames. No variables were found to be significant predictors, but its incidence was exclusively among males.

\#2000 Elsevier Science B.V. All rights reserved.

Keywords: Electronic meetings; Group support systems; Brainstorming; Disinhibition; Flaming

1. Introduction

Managers spend a large percentage of their time in meetings, but traditional, oral meetings are often inefficient and ineffective. According to a study at the University of Southern California in Los Angeles, the average meeting has no written agenda, and the purpose of the meeting is accomplished only 50\% of the time [13]. Further, 25\% of the participants feel they waste time on irrelevant issues, 33\% of the participants feel pressured to advocate opinions publicly though they privately disagree with them, and 33\% of the participants feel they have minimal influence on the meeting.

Group support systems (GSSs) were developed to improve meetings. Using this technology, group members are able to participate more and state their opinions anonymously while all of the discussion may be recorded automatically on a computer disk for printout and possible distribution after the meeting [5].

There are some disadvantages of using the technology, however. In most electronic meetings, participants share comments anonymously or with a pen name. While this promotes more candid comments, it also may increase flaming, i.e. comments intended to offend others [15]. While somewhat subjective, at the extreme flaming includes obscenities and other inappropriate comments, and may lead to avoidance of the technology [16].

While some researchers have proposed possible causes of flaming in the GSS environment and a few studies have looked at the incidence of flaming...
on a group basis, none that we have found have tracked flaming on an individual basis, possibly due to limitations of the software. The purpose of this effort was to examine several user characteristics as they relate to the number of relevant, irrelevant, and flaming comments generated by each participant.

2. Background

There appears to be little consensus on an exact definition of flaming [10]. Obscenities and insults are easily recognized as instances of it, but a large degree of subjectivity is needed to distinguish impassioned criticism from insult. At one extreme, a study included any comments with exclamation points as instances of flaming [19], but most researchers define flaming as hostile comments directed at a person rather than an idea.

Experience with over 1000 participants in 70 meetings has shown that first-time users become disinhibited through the use of an anonymity feature in the software, and there is frequently laughter about jokes that all participants view at the same time [6]. Many first-time GSS participants have never been able to express their ideas with complete anonymity while simultaneously viewing others’ comments and wish to try out the feature with wild, if not socially-unacceptable views. Continued use of such systems may reduce the incidence of this type of flaming, however, as the novelty wears off.

Several studies have found more flaming in anonymous electronic meetings than in traditional meetings. For example, one study using students who did not know each other for hypothetical tasks found a large amount of flaming when social control breaks down [11]. Other studies, however, have found little or no increases in flaming [14,18]. For example, one used managers and professionals who were about 43 years old and employed in a conservative corporation; they found little disinhibited behavior. This may be because the members were part of a social organization having ongoing expectations of common group identity and shared activities to accomplish [9]. Similarly, a study of mature bank employees generating a strategic plan using a GSS found no incidences of flaming [1].

Social norms and culture may play a large role. For example, groups from Asia are often more restrained and consensus-seeking and rarely generate inflammatory comments, even in anonymous electronic meetings [3,4]. In addition, the incidence of flaming and irrelevant comments may be reduced significantly by strong admonishments from the group facilitator to refrain from such conduct [17]. Although a few theories have been proposed, no studies have found significant predictors of why flaming comments are made by specific individuals.

3. Case study

To examine why flaming occurs in an anonymous, electronic meeting, a case study was conducted.

3.1. Subjects

Two groups of 45 undergraduate Business students discussed two topics using a GSS as part of a required assignment in their electronic classroom at their regularly scheduled meeting time. The groups were fairly homogeneous in age, education, typing speed, and computer experience. Approximately 40% of each group were female.

3.2. Task

After a brief explanation of how to use the software, the subjects spent 10 minutes generating comments on two topics:

1. ‘Should the President of the United States be removed from office? Why or why not?’
2. ‘How can we solve the parking problem on the campus?’

Topic 1 was chosen because of the level of controversy surrounding the issue at the time of the assignment, the subjects were likely to have knowledge of it, and we felt a controversial topic could result in more flaming. Topic 2 was chosen because it was believed to be less controversial, and it has been used in prior experiments, e.g. [8].

From experience, we have found that 10 minutes is adequate time to capture most of a meeting’s participants’ views. The first group discussed the parking problem first while the second group discussed the presidential removal problem first.
3.3. Procedure

Following each idea generation task, participants completed an online questionnaire using a seven-point Likert scale with 1 equivalent to not controversial, no knowledge, etc. and 7 equivalent to extremely controversial and a great deal of knowledge:

1. How controversial is this topic?
2. How much do you know about this topic?
3. How familiar are you with electronic communication?
4. How important is this topic?
5. How satisfied are you with the meeting process?

In addition, we recorded the sex of each individual and the number of the computer that the participant was using.

3.4. Dependent variable measures

The number of relevant, irrelevant, and flaming comments were measured through a content coding of transcripts for each participant. The electronic meeting software automatically recorded comments from each group member in separate files and used the same identifier (the computer number) for each member’s questionnaire answers. Coding was conducted by two independent observers.

Relevant comments were deemed to be those ideas related to the topic and not inflammatory (e.g., ‘Build a parking garage’). Flaming comments were judged to be those which might offend somebody in the group. These comments included those which insulted another person in the group by name (e.g., ‘Teach_how to drive’), obscenities, and sexual references. Many of these flames were also irrelevant, but were not counted as such. Irrelevant comments were counted as those not related to the topic and not inflammatory (e.g., ‘When can we get out of here?’). Two independent coders evaluated transcripts of the meetings and agreed on 98% of their selections, indicating adequate inter-rater reliability.

4. Results

4.1. Independent variables

The results of the questionnaires and the number of comments generated for both groups are shown in Table 1. As we suspected in designing the tasks, subjects believed that the removal of the president was more controversial ($F = 4.69, p = 0.032$). Parking was believed to be more important, but not significantly so ($F = 1.25, p = 0.265$). The subjects’ knowledge of both problems was approximately the same ($F = 0.17, p = 0.68$), and their satisfaction with the meeting process discussing each topic was not significantly different ($F = 1.02, p = 0.314$). The question regarding their electronic communication experience was repeated in the questionnaires. Although, the mean was slightly different, it was not significant ($F = 0.45, p = 0.504$). The results of the questionnaires and the number of comments generated for group 1 and group 2 are shown in Tables 2 and 3.

4.2. Comment analysis

Table 4 shows the number of relevant, irrelevant, and flaming comments for each group by topic. A
large amount of ‘free-riding’ was exhibited by the subjects. Although they were encouraged to write comments, only 25 of the 45 in the first group wrote about the parking problem and only 20 wrote about the president. In the second group, only 22 of 45 wrote about the president and only 21 about parking. A large portion of the groups wanted to just read others’ comments.

Flaming comments were written by a small minority of the participants. In the first group, flames were written by five participants (20% of the total who wrote comments) when discussing parking and 10 participants (50% of the total who wrote comments) when discussing the second problem. All five of those who wrote flaming comments for parking also wrote flaming comments about the second issue. In the second group, flames were written by four participants (19% of the total who wrote comments) when discussing parking and 10 participants (27% of the total who wrote comments) when discussing the president. Two of the four who wrote flaming comments for the first topic also wrote flaming comments for the second topic. Of those who wrote flaming comments, one or two wrote a disproportionate share. For example, one participant in group 1 discussing the president wrote seven flames, three irrelevant comments, and no relevant comments. That is, one of 10 who wrote flames wrote 22% of the total. Finally, all of the participants who wrote flames were male. A similar result was found in a study of Japanese GSS participants in which females were more polite and readers of their anonymous comments could often distinguish those written by them [2].

Most of the flames were not relevant to the topic (60%), and many were insults to a particular person in the group directly by name (30%) or indirectly (14%), e.g. ‘The person who wrote comment number 45 is a _.’ There was no statistically significant difference between the number of irrelevant flames based upon which topic was chosen. Some of the flames were repeated, and many referred to or built upon other flames.

The topic order may have had an effect on the number of comments generated and the amount of flaming. The number of flaming and irrelevant comments increased when the first group switched from the parking problem to the president, while the number of relevant comments decreased. The number of flames and irrelevant comments increased when the second group switched from the president to the parking problem, but the number of relevant comments also increased. The subjects may have learned how to use the software more and its capabilities. In addition, flaming might have spawned more flaming in response.

The number of relevant comments about parking was significantly greater than the number about the president \( F = 12.65, p = 0.001 \) but the numbers of irrelevant and flaming comments were not significantly different \( F = 0.28, p = 0.599 \) and \( F = 2.15, p = 0.145 \), respectively.

### 4.3. Variable correlations

A Pearson correlation analysis was conducted on the data, and significant results (at \( \alpha = 0.05 \)) were found among several variables. Subjects with more knowledge about the topics perceived them as more controversial \( R^2 = 0.395, p = 0.0001 \) and more important \( R^2 = 0.309, p = 0.0002 \), had more electronic communication experience \( R^2 = 0.205, \)
$p = 0.0139$), were more satisfied with the meeting process ($R^2 = 0.244, p = 0.0032$), and generated more relevant comments ($R^2 = 0.186, p = 0.0255$). Those with more electronic communication experience also believed the topics were more important ($R^2 = 0.204, p = 0.014$), were more satisfied with the meeting process ($R^2 = 0.173, p = 0.0377$), generated more relevant comments ($R^2 = 0.266, p = 0.0064$), and generated more irrelevant comments ($R^2 = 0.164, p = 0.0492$). The perceived level of importance was also significantly correlated with the perceived level of controversy ($R^2 = 0.369, p = 0.0001$). The topic was significantly correlated with the level of controversy ($R^2 = 0.179, p = 0.032$) and the number of relevant comments ($R^2 = 0.369, p = 0.0001$). Several of these results are due to cross-correlation, however.

None of the variables were found to be significant predictors of flaming, although satisfaction with the meeting process ($F = 2.12, p = 0.055$) and importance of the topic ($F = 2.13, p = 0.054$) were close to our threshold level $z = 0.05$. There were two post-hoc predictors of flaming, however: the number of relevant comments ($F = 3.84, p = 0.001; R^2 = 0.062$) and the number of irrelevant comments ($F = 7.79, p = 0.001; R^2 = 0.356, p = 0.001$).

5. Discussion

Kitchens [12] proposed that flaming is a function of gender, age, race, alcohol consumption, locus of control, importance of the topic, satisfaction with the meeting, anonymity, purpose of the flame, presence of formal rules, and authority. We did not test all of these, but found that gender plays an important role: all of the flames were generated by males. We found no significant correlation between flaming and satisfaction with the meeting, however. Anecdotal evidence from conducting numerous GSS meetings also suggests that strong admonitions from the group leader or facilitator often suppress the incidence of flaming. In addition, group members must also be encouraged to write ideas to overcome free riding [7]. Thus, the group facilitator’s leadership has a strong role to play.

Most of the flames were not related to the topic, suggesting that the topic may not matter. Rather, flames are probably due to the characteristics (such as gender, level of maturity, hostility, etc.) of the individual writing them. Only a small minority of those writing comments generated flames.

Although there were several interesting correlations among the variables (e.g., those with more knowledge about the topic and those with more electronic communication experience were more satisfied with the meeting), we found no significant predictors of flaming. Those who flamed wrote more comments, on average, but they were generally irrelevant to the topic.

6. Conclusion

Group support systems may increase meeting efficiency, effectiveness, and satisfaction, but with anonymity come a few unwanted effects, such as flaming; i.e., comments written to offend others in the group. Warnings against such behavior may reduce their occurrence, but little is known about why they appear.

This study has investigated the affect of topic knowledge, importance, and level of controversy, along with familiarity with electronic communication, satisfaction with the meeting process, and gender on the incidence of flaming by individuals who have never used the system before. Only gender played a significant role.

References


Milam Aiken received a BS in Engineering and an MBA from the University of Oklahoma, a BA in Computer Science and a BS in Business from the State University of New York, and a PhD in Management Information Systems from the University of Arizona. He is an Associate Professor of Management Information Systems at the University of Mississippi.

Bennie Waller received a BS in Marketing from Longwood College, an MBA from the University of North Carolina-Wilmington, and a PhD in Finance from the University of Mississippi. He is an Assistant Professor at Francis Marion University.