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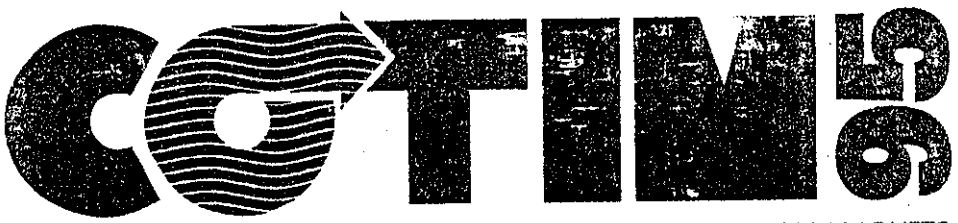


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SUBSCRIBERS' BEHAVIORS IN ELECTRONIC DISCUSSION GROUPS: A COMPARISON BETWEEN ACADEMICS AND PRACTITIONERS

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ABSTRACT

This paper examines subscribers' behaviors in electronic discussion groups and compares the behavior of academic and practitioner subscribers. Data were collected from electronic mail surveys of the subscribers of four electronic discussion groups. Results of this study show that practitioners are much more likely to participate than academics as discussion leaders, respondents, and information-seekers. Academic subscribers are much more likely to act as quiet observers who only read others' messages and never posted one themselves.

INTRODUCTION

In this information age, navigating the information superhighway is the gateway to success. By now, the Internet, the network of computer networks, is easily accessible to faculty and students in many higher education institutions (Allen 1994; Herling 1994), and to more than six million other individual subscribers of on-line services such as Prodigy and American Online in the United States (Shannon 1995). Many electronic discussion groups have been created by academics and industry professionals to capitalize on the Internet's high speed information retrieval and transmission power (Berge 1994; Rheingold 1993; Rojo 1995).

This paper examines subscribers' behaviors in electronic discussion groups and compares

the behavior of academic and practitioner subscribers. As electronic discussion groups are still innovations to both academics and practitioners (Berge 1994; Herling 1994), a study on the behavior of these two major types of subscribers can reveal the problems and opportunities of electronic discussion groups and serve as a basis to improve their operations. Moreover, there are few empirical studies examining subscribers' differences in their behaviors in electronic discussion groups. This study can fill this void by explaining the behavior of subscribers using opinion leadership and communication strategies theories.

This study attempts to answer two research questions:

1. What are the predictors for participation and non-participation of subscribers in electronic discussion groups?
2. Do academic and practitioner subscribers behave differently in electronic discussion groups?

PARTICIPATION AND NON-PARTICIPATION IN ELECTRONIC DISCUSSION GROUPS

Electronic discussion groups are formed by persons to exchange ideas on a certain subject area by means of an electronic mailing list or a computer bulletin board (Berge 1994). When a group transmits a message to every individual subscriber's personal electronic mail-box via a listserver program with a database of subscribers, it is

called a listserver mailing list. There are three types of listserver mailing lists (Hardie and Neon 1994):

- 1) Moderated mailing lists are mailing lists that the list owner, the person who operates the list, selects messages to be distributed to the subscribers of the list.
- 2) Digest lists are lists that the list owner compiles the messages with a table of content and sends to the subscribers on a periodical basis.
- 3) Unmoderated lists are mailing lists that every subscriber can post messages to the subscribers of the entire list. Usually, unmoderated lists have the highest traffic because every subscriber is free to post a message at any time he or she wants.

Maintaining the quality of messages in unmoderated lists without restraining the subscribers is highly dependent on the self-discipline of the subscribers. In a sense, the electronic discussion group is another mass medium that transmits messages to a large number of subscribers at the same time. The sender does not need to know the addresses of individual subscribers to send a message (Radicati 1992). This study will focus on discussion groups using unmoderated listserver mailing lists because their messages are automatically sent to the electronic mailboxes to the subscribers. The messages can be both unsolicited and solicited.

Past research on electronic mails focused mostly on organizational settings in which the subjects have a commitment requirement to the organization (e.g., Garton and Wellman 1995; Rice et al. 1990; Schmitz and Fulk 1991; Steinfield 1986). Despite the work task requirements, researchers have found that there are important socioemotional values in using electronic mails to communicate, or to establish and maintain personal relationships, such as matching with the general popularity and

peers' usage of electronic mails (Rice et al. 1990; Soe and Markus 1993; Steinfield 1986). Many have discussed the benefits of using electronic mails, such as achieving a more equal status in discussion without the physical presence of communicator, and free from geographic and knowledge constraints (Garton and Wellman 1995; Rheingold 1993; Rice 1989; Winett 1986). However, whether or not these advantages can be applied to electronic discussion groups in which subscription is voluntary, subscribers may be professionally-linked, and messages are public in nature have not been explored.

Subscribers' contribution of messages is the life-blood of electronic discussion groups because there will be no content if no one posts messages to the group (Ogan 1993; Rojo 1995). As the success of an electronic discussion group is dependent on the contribution of its subscribers, it is important to understand the dynamics of participation and non-participation. Two streams of literature can explain the willingness to contribute messages in discussion groups. One is the uses and gratifications approach which explains the participation in discussion groups by the gratifications of discussing with other people. The other is the opinion leadership approach which identifies opinion leaders by their demographic and psychographic characteristics.

The uses and gratifications approach

One of the few studies examining the participation in electronic discussion groups is Garramone and her associates' (1989) study of political bulletin board users. Their telephone survey of the users found that the major function of the board was surveillance: to know more about the latest political issues and other opinion's on those issues, and to develop a social network for the user. Curiosity was also a commonly mentioned motivation. A recent study on

participation in scholarly electronic discussion groups also obtained similar results (Rojo 1995). Ogan (1993) examined the subscribers' contribution in a Turkish listserv mailing list and concluded that social play is the most frequently satisfied personal goal of subscribers. All these studies, however, only examined those who have participated in the group, or the so-called "critical mass." The silent mass have not been studied.

The opinion leadership approach

Although opinion leadership is a concept that has been introduced since the 1940s, it is only until recently that why some people would like to be leaders influencing other people have been studied. Weimann's (1994) review of the opinion leadership literature in the past five decades reveals a descriptive orientation in the literature: the identification of the demographic and psychographic characteristics of the opinion leaders and the description of the flow of information among the mass media, the opinion leaders, and the opinion followers. Opinion leaders are found to receive and transmit mass media agenda actively, follow them closely and diffuse them to the other people through their personal communications. Moreover, Weimann (1994) suggested that these "influentials" "set the standards in their community" (Weimann 1994, p. 225). They are most probably in their 30s, with high social position, and consume a lot of print media with special interests in political news and business news. They like to have a lot of friends and have very broad social networks. They have a optimistic life-goal and like to share ideas with other people. In the academy, opinion leaders are the productive scholars who have strong networks and are associated with influential innovation (Sperber 1990).

Extant theoretical explanations of the

unwillingness to contribute messages in public are pretty much based on an inferiority paradigm which assumes that the silent mass refrain from participation in public communication activities because of their strong sense of inferiority. This sense of inferiority has been explained in public opinion and communication apprehension literature. On an aggregate level, the public opinion literature focuses on why the majority of the public is silent; on an individual level, the communication apprehension literature investigates why individuals avoid communication in individual-group interactions.

The spiral of silence

The spiral of silence theory, developed by the German scholar, Elizabeth Noelle-Norman, offers an explanation of why people do not participate in public discussion. This theory is based on individuals' perceived need to conform to the majority opinion reflected in the mass media because they do not want to be isolated by the majority (Noelle-Norman 1989). If individuals perceive that their opinion is not the most popular view at the time, they will keep quiet. Their perception of the majority opinion is often wrong, but they will continue this spiral process of suppressing their own opinion so that the media's opinion dominates and takes the rule. The theory received mixed empirical support from other researchers. Some opponents to the theory, such as Price and Scott (1990), argue that many of the assumptions of the theory are not valid. For example, the theory assumes that people will survey the mass media's opinion before making a decision to express their opinion, but in fact, very few people do so. Studies on political outspokenness (Larsosa 1991), self-serving perceptual biases of individuals (Kennamer 1990), and alternative media (Gonzalez 1992) also challenged the theory. They found that if individuals have firm conviction about the accuracy of their opinion, they will speak against the

prevalent majority. Given these inconclusive findings on an aggregate level in explaining self-suppression of opinion expression, the communication apprehension on an individual level may be able to shed light on why people refrain from contributing messages in public domains such as electronic discussion groups.

Communication apprehension

Communication apprehension (CA) is "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons" (McCroskey 1984). Miller (1984) suggests that the avoidance of communication is a complex process consisting of the negative feelings about communicating, the autonomic arousal in participation, the negative assessment of the situation, and the final overt avoidance behavior. Both Richmond (1984) and Buss (1984) contend that persons with high CA will not be useful members in discussion groups because they are unwilling to participate, and feel uncomfortable in a give-and-take interaction. Berger and Kellerman (1994) also point out a strong advantage of being a quiet observer as a communication strategy — a quiet observer does not need to worry about self-presentation or the perception of other, thus saving cognitive resources to monitor his or her own action output. McCroskey (1984) concludes that communication apprehension is caused by nine factors:

- 1) novelty of the situation and communication partners
- 2) formality of the communication,
- 3) subordinate status of the individual,
- 4) conspicuousness of the communication,
- 5) degree of attention from other,
- 6) dissimilarity of the situation,
- 7) unfamiliarity of the situation,

- 8) probability of being evaluated, and
- 9) prior history such as past failure.

Electronic discussion groups seem to possess all of these factors that conduce communication apprehension. To subscribers who are not cyberspace surfers that frequently tap resources on the Internet, electronic discussion groups are new media that they do not know how to respond. Although electronic mails are much less formal than writing academic articles or letters, they are still written communications which require the translation of ideas into the written language. The subscribers of an discussion group may know one another because of similar professional interest. Young faculty and graduate students may feel subordinate to the senior faculty members. The public nature of the discussion group put individuals into a conspicuous situation when they post messages to the group and they are likely to be given attention by the subscribers to the group. Although the topics being discussed may be of similar interest to the subscribers, there may also be situations that the topics are totally irrelevant to the subscribers. To new subscribers of a group, they are unfamiliar with the environment. It is wise for them to look and see to familiarize themselves with the norm of the group. Since many of the subscribers are professionally-linked and supposedly knowledgeable about the field, the chance of being evaluated by other subscribers is high. If the subscribers have subscribed to other electronic discussions and have unpleasant experience after contributing the messages, such as being "flamed" (criticized by name) by other subscribers, they may refrain from participation.

One non-inferiority approach to the problem of passivity in discussion groups is the public goods theory which posits that subscribers do not participate because there is no reward for contributing messages to the group (Rojo 1995). Subscribers only

want to enjoy what other subscribers offer in the group without spending any effort of contributing messages. This theory is based on the assumption that men are selfish and rational. Subscribers will be willing to contribute messages only when the communication bring them mutual and symmetric benefits.

Although perceived negative consequences and subscribers' "free-ride" mentality may explain why subscribers do not contribute messages, there may be other reasons that may inhibit the active participation of subscribers. In this study, four non-inferiority and non-selfish reasons, such as time constraints, perceived threat of message overload (clutter), interest in the topics, and quality of the messages, were also included to explain non-participation.

Difference between academics and practitioners

Academics and practitioners have long been viewed as members of two distinct subcultures (Barley et al. 1988). The former believe in ideal and theory, while the latter deal with reality and practice. Research that tried to compare academics with practitioners found that they exhibited significant difference in their views on their respective discipline. For example, on management knowledge, Dossabhoj (1994) found that academics and practitioners have incompatible management models. On land use planning, academics held much higher ethical standards than practitioners (Matthews 1993). On editing, academics emphasizes "intentional diagnoses", but practitioners believe in "rule-based" editing (Haugen 1991). Such difference between academics and practitioners may be caused by the difference in their training and the subsequent self-expectation and world vision. It may also result in different behaviors in electronic discussion groups.

Integrating the findings of the uses and gratifications of discussion groups, opinion leadership behavior, the spiral of silence, and communication apprehension, and the

"free-ride" theory, it is reasonable to expect that positive evaluation of a electronic discussion group will lead to more participation. Demographic factors such as younger age and males may have a higher tendency to participate (Ogan 1993; Steinfield 1986). Convenient access to the Internet may also facilitate participation by reducing the time restriction and technical barrier to posting messages on the Internet for the subscriber (Steinfield 1986). Experience in using e-mail such as e-mail usage frequency and subscription tenure in the discussion group may also be positively correlated with participation (Steinfield 1986).

METHOD

Electronic mail surveys were sent to subscribers of four electronic discussion groups in three mailings to obtain information about the active participants and the quiet observers in February, 1995. Respondents could choose to reply by ordinary mails or electronic mail messages. The electronic discussion groups being chosen were ADFORUM and CONTENT, which were dominated by academic subscribers; GINLIST and MAKRET-L, which were dominated by practitioner subscribers. They are all unmoderated groups which the list owners do not censor the content of the message. At the time of the study, MARKET-L has the largest subscriber base (923 unconcealed non-duplicate subscribers) and ADFORUM has the smallest subscriber base (132 unconcealed non-duplicate subscribers).

Measurement

Seven factors that might influence the participation of the electronic group subscribers were identified: 1) age, 2) evaluation on the discussion group, 3) sex, 4) access to the Internet at home, 5) frequency of e-mail usage, and 6) subscription tenure, 7) occupation (academics vs. practitioners). Information

on these factors was obtained through the items in the survey questionnaire. Evaluation on the discussion group was measured by eight items in which half were positive and half were negative to avoid acquiescence bias. Access to the Internet at home was indicated by ownership of a computer with modem at home. Subscription tenure was indicated by the length of the time the subscriber has subscribed to the group. Participation in the group was indicated by a list of five behavioral statements on a five-point Likert scale of strongly disagree to strongly agree. The items included four participatory behaviors that subscribers posted messages to the group: 1) discussion leader, 2) respondent, 3) broadcaster, and 4) information-seeker, and one non-participatory behavior: the quiet observer who only read messages but never posted messages to the group.

Subscribers' behaviors in electronic discussion groups

A total of 117 responses were received after the two-week survey period. Similar to previous electronic mail surveys, the response rate to the survey is low compared to the response rates of traditional mail questionnaires (Allen 1994; Sculdt and Totten 1994). Slightly more than one-half of the respondents (54%) replied within the first week of the mailing. Since the response rate is low, this study should only be viewed as a pilot study on the behavior of subscribers in electronic discussion groups. The results should be treated as tentative, rather than conclusive.

A slightly high proportion of the respondents (63%) are academics, consisting of 53 faculty and 20 student subscribers. The largest group is the 31-40 age group (42%), followed by the 41-50 age group (31%). Most of the respondents (78%) have subscribed to the discussion group for more

than two months at the time of study. Respondents also have much better computer access than the national average. Around 77% of the respondents have a computer with modem at home to connect to the Internet, which is much higher than the national average of 26% (Cable News Network 1995). A vast majority (83%) of the respondents are frequent e-mail users who read e-mails at least once everyday. Almost one half of them opened all the messages posted in the respective electronic group under study.

Many respondents are cyberspace surfers. Almost three quarters of the respondents subscribed to other discussion groups or computer bulletin boards. Among them, more than half subscribed to more than three lists. The turnover of these other mailing lists is high as only 49% of the respondents who subscribed to other lists continued subscribing to them at the time of study. A quarter of the respondents discontinued their subscription to all other mailing lists.

In general, respondents have a quite positive evaluation on their electronic discussion groups under study as shown in their responses to the list of the eight items in Table 1. The mean scores of the positive items are much higher than the mean scores of the negative items. Among the four groups, ADFORUM respondents gave the highest score to the group as a "good place to exchange ideas" (mean score=4.18). MKT-L subscribers were perceived as the most "open to different viewpoints" by the respondents (mean score=3.91). The major negative evaluation on all the four groups is the netiquette of the subscribers.

An additional question was posed to the respondents on whether or not they want more electronic discussion groups in the same subject area. Contrary to their earlier positive evaluation, only one-third of the respondent (36%) answered that they did not

want any more groups on the same subject area. Some (6.8%) said it depends on what type of discussion group it would be such as focusing on a specialty field in that area. More than one half of the respondents would like to see more groups on the same subject area be created because it will create more diversity. This reflects a diverse need of the users of the information superhighway: Some people want more information by more diversity, but some people just want better information from a single authoritative source.

To identify factors that predict the participation of the respondents, multiple regression analysis was performed. Except occupation, none of the other six factors: age, access to the Internet at home, evaluation of the group, sex, frequency of using e-mails, and subscription tenure, are significant predictors of any of the participatory behaviors. Nevertheless, subscribers' passive behaviors can be partly explained by subscription tenure and occupation (adjusted $R^2=.20$), as shown in Table 2. New subscribers and academic subscribers are more likely to act as quiet observers than their long tenure and practitioner counterparts.

Several t-tests were conducted to compare academic subscribers with practitioner subscribers. Table 3 shows that academic subscribers and practitioner subscribers display statistically significant differences in their mean scores in four out of the five types of participatory and non-participatory behaviors. Namely, practitioners are much more likely to participate than academic subscribers as discussion leaders ($t=-2.36$, $df=109$, $p=.02$), respondents ($t=-3.28$, $df=109$, $p=0.001$), and information-seekers ($t=-2.78$, $df=109$, $p=.006$). They are less likely than academic subscribers to act as quiet observers who only read other's messages and never posted one themselves ($t=4.96$, $df=109$, $p<.0001$).

The 60 quiet observers, who had never posted messages, were probed for their reasons of non-participation. Neither communication apprehension nor spiral of silence theories can sufficiently explain the reasons for their non-participation. As shown in Table 4, the most frequently reported reason for not contributing messages is the lack of time for academic subscribers ($N=28$). Another common reason cited by academic subscribers is that they do not have enough knowledge in the topics being discussed ($N=23$). The perceived high level of clutter in discussion groups is also an important reason ($N=13$). Only one of the three most frequently cited reasons can be put under the inferiority paradigm. In contrast, very few practitioner respondents of this study are quiet observers. Non-inferiority reasons accounted for 15 out of 30 times in mention frequency from the quiet practitioner observers.

Among the reasons that conform to the inferiority paradigm, new subscribers' fear to post messages is the most frequently mentioned by practitioner subscribers, but it is only the third least mentioned reason by academic subscribers. The theory that unfamiliarity causes communication apprehension seems to apply mainly to practitioner subscribers. The less frequently cited reasons such as the unwillingness to express opinion in the public ($N=11$) complies with the apprehension caused by the conspicuousness of the communication; the fear that their opinion would not be accepted by other subscribers ($N=7$) conforms to the spiral of silence theory.

DISCUSSION

Despite the respondents' general positive evaluation of their respective discussion groups, the analysis of the quiet observers who have never contributed messages to their group shows the existence of two cultures in electronic discussion groups. The academic culture, which concerns about

qualifications, accuracy, self-esteem, independent work, together with the heavy teaching and research loads of academics, foster the passivity of the academic subscribers. The practitioner culture, characterized by aggressiveness and the quest for information, try to make use of the groups to express themselves or ask for assistance from other subscribers.

Many academic respondents have never contributed messages to the group. Some of them do not see a need to post messages as indicated in their unwillingness to spend the time to post messages. The perceived need for seniority qualification may inhibit the contribution of messages by young faculty members and graduate students. The threat of being rejected by the other members of the group can easily create apprehension for the subscribers to post messages. The strong feeling of many quiet academic subscribers that they are not qualified to post messages, or not having enough knowledge to contribute, complies with the theory that perceived negative consequences cause communication apprehension. This reveals the cautious character of many academics and their fear of making mistakes or showing ignorance in public. Nevertheless, the inferiority paradigm suggested in communication apprehension and spiral of silence literature only received limited support in this study because inferiority reasons are not the most frequently cited reason for not contributing to messages. Subscribers' non-participation in electronic discussion groups seems to be caused by a coalescence of despise, indifference, free-ride inclination, and a sense of inferiority.

Although it might be argued that the lack of time may be an excuse rather than the real reason for not contributing messages to a group, using this excuse reveals the fact that contributing messages to their electronic discussion group is a low priority to these

quiet observers. Another interpretation of the popularity of the time constraint reason is that the quiet observers may perceive posting messages as a time-consuming and a high pressure task. They need careful thinking and writing before posting messages. More detail probing is needed in future research on the time constraint factor.

CONCLUSION

Electronic discussion groups can offer a new avenue for studying group dynamics as messages are automatically recorded (Winett 1986). Nonetheless, one should also be aware of the limitation of electronic discussion groups as interactive communication settings. For example, it is hard to read long messages on a computer screen. The high turnover of subscription to electronic discussion groups indicates the transient nature of the subscription. Many subscribers are just fishing for information from different groups or subscribe to a group simply out of curiosity. Moreover, the absence of non-verbal cues can easily create misunderstanding in computer-mediated communications (Rheingold 1993).

Although this study has focused on only four electronic discussion groups, the findings of the study on the participation behavior of the subscribers may be applied to other studies on electronic discussion groups. In particular, they may exhibit similar problems that these groups encountered, such as having a large number of quiet observers who only want to take, but not give, in the group. The seniority system of the academy is mirrored in the electronic discussion groups that are dominated by academics. A drawback of this study is that it has not examined the psychological characteristics of the active participants. Future studies have to incorporate the psychological predictors of the active participants or opinion leaders in discussion groups.

The difference in participation between academic and practitioner subscribers can pose far-reaching implications on the potential development of electronic discussion groups. This study shows that positive evaluation on a group does not facilitate participation. The support of other subscribers and the creation of the need to participate may be the keys to encourage participation. How to encourage academic subscribers to contribute information and be more involved in electronic discussion groups is a big challenge to list owners. The usage of hosts, who are designated to take care of new subscribers and initiate discussions, may be a remedy to the non-participation in electronic discussion groups (Rheingold 1993). Electronic discussion groups can be both a liberating force and a reinforcement of existing hierarchy. It all depends on whether subscribers and list owners are willing to take the effort of writing for the group and the cultivation of a sense of commitment to the group (Kling 1995). As Ogan (1993) remarked, active participants can fully utilize the potential of electronic discussion groups to create an "invisible college" or "coffeehouse" where they develop a sense of belonging and commitment, and share ideas with one another. To quiet observers, electronic discussion groups are simply free newsletters that they browse at leisure and throw away at any time they want.

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TABLE 2
MULTIPLE REGRESSION ON NON-PARTICIPATION

	Standardized coefficients
Positive evaluation	-.116
Sex	-.046
Access to the Internet at home	-.07
Frequency of e-mail usage	.03
Subscription tenure	-.22*
Age	-.15
Occupation (academics vs. practitioners)	-.463*

Adjusted R ²	.20
F ratio	4.45
Significance	0.0003

NOTE: Asterisks indicate p<.05.

TABLE 1

RESPONDENTS' EVALUATION OF THE FOUR DISCUSSION GROUPS

Positive evaluation items	Mean score			
	ADFORUM	CONTENT	GINELIST	MKT-L
Members are open to different viewpoints	3.77	3.58	3.39	3.91
A good place to exchange ideas	4.18	3.52	2.73	4.0
Represent a diverse viewpoint	3.15	3.0	3.14	3.32
Messages posted in the group often give good ideas that I could not find elsewhere	3.53	3.6	2.5	3.59
Negative evaluation items				
The group has been abused by some subscribers to promote themselves	2.79	1.8	3.93	3.35
Some of the members lack netiquette, i.e., misplace private messages in the public forum, fail to respect other's opinion, etc.	3.21	2.12	3.71	3.27
The group is dominated by some student subscribers	2.25	1.72	1.92	1.85
The group is dominated by some full-time faculty members	3.0	1.84	2.15	1.94

NOTE: The mean score is calculated based on a five-point Likert scale of strongly disagree (1) to strongly agree (5) to each item.

TABLE 4

REASONS FOR NOT CONTRIBUTING MESSAGES

	Frequency of Mention		Total
	Academics	Practitioners	
<u>Non-inferiority Reasons</u>			
1. No time to post messages	28	4	32
2. Not interested in the topics	17	4	21
3. Not want to add more clutter	13	3	16
4. Low quality of messages	8	4	12
<u>Inferiority Reasons</u>			
5. Too new to the group to contribute	7	7	14
6. Not enough knowledge to contribute	23	4	27
7. Not want to express opinion in public	10	1	11
8. Not qualified	12	1	13
9. Afraid other subscribers may not accept my opinion	5	2	7
	N=47	N=13	N=60

NOTE. --- multiple response items

TABLE 3

RESPONDENTS' REPORTED BEHAVIOR IN ELECTRONIC DISCUSSION GROUPS

	Mean score		t	df	p
	Academics	Practitioners			
Discussion leader (I often initiate conversations or discussion topics)	1.7	2.28	2.36	109	.02
Respondent (I often respond to enquiries and topics being initiated by others)	2.34	3.21	3.28	109	.001
Broadcaster (I often use the board to make announcements)	1.63	1.46	.75	109	.458
Information-seeker (I often use the board to solicit useful information or advice for my own need)	2.32	3.14	2.78	109	.006
Quiet observer (I often only read what other said in xxx, and never post messages in xxx).	3.97	2.52	4.96	109	.0001

NOTE. --- Mean score is calculated based on reversing a five-point likert scale of strongly agree (1) to strongly disagree (5).