

# 16 An Exploration of Relationships Among Psychological Type, Ethnicity, and Computer-Mediated Communication

Frederick T. Bail

*Department of Educational Psychology  
University of Hawai'i at Manoa*

Computer-mediated communication (CMC) systems are enjoying wider use in college courses. They provide the potential to increase group cohesiveness and student involvement and to facilitate student comprehension (Harasim, 1990). Because computer conferencing activities are much more place-independent and time-independent than those of typical college classrooms just a few years ago, there has been increasing attention paid to student preferences and abilities that may influence effective use.

There are some studies (Kiesler, Siegal, & McGuire, 1984; Bail & Streveler, 1991) that indicate that computer-mediated communication can reduce the hesitancy certain students feel in interactions that are face-to-face, oral, or with more extraverted peers. In an exploratory study analyzing the content of confidential electronic mail (e-mail) messages sent to the instructor, Bail (1992) found that a majority of those containing significant self-disclosure were written by students who expressed a preference for introversion on the Myers-Briggs Type Indicator (MBTI) and that three-quarters of the messages requesting clarification of requirements were written by those who expressed a preference for judging.

Cultural issues are important in understanding psychological type and in understanding CMC usage. An assumption implicit in the MBTI, that psychological type has a certain degree of cultural universality, is an important foundation for this conference. It is supported by some earlier research (Levy, Murphy, & Carlson, 1972), though Levy and Ostrowski (1983) found a significant difference in the percentages of Japanese-American and Caucasian college students in Hawaii on both the EI and JP scales of the MBTI. Though some study has begun on the effects of gender on CMC usage, there is little research on the effects of ethnicity. In a very small sample, Bail (1992) found some indication that those who identified themselves as part-Pacific Islander tended to write proportionately more of the e-mail messages containing self-disclosure.

The present study is intended as a preliminary investigation of some relationships among CMC usage, psychological type, and ethnic identification. Because this research was undertaken in an evolving college course, whose composition shifted markedly over three semesters, results are seen as particularly tentative.

## METHOD

Data for this study were collected from 55 undergraduate students in the same course at the University of Hawai'i at Manoa (UHM), over a span of three semesters. The sample included 38 women and 17 men. Twenty of the students identified themselves as members of ethnic groups underrepresented at UHM (primarily part-Hawaiian or Filipino); English was not the first language for seven of these twenty. Thirty-three of the students identified themselves as Japanese-American (or Japanese), Chinese-American (or Chinese), or Korean-American; English was not the first language for 18 of these 33. The other two students identified themselves as Caucasian. Most of the students were juniors or seniors.

The course emphasized the understanding and effective application of strategies in areas such as time management, listening, note-taking, reading comprehension, test-taking, stress reduction, and writing papers. It was an upper-division elective course, designated as "writing-intensive."

The computer-mediated communication system was designed so that students could gain adequate mastery during one class session and so that it could be accessed at many different campus locations or by modem. Ten weeks during the semester students were required to initiate notes to the class on a designated computer conference in order to share their attempts to use a particular strategy. They also had to write responses to class notes of two or three of their peers. The system also allowed them to write confidential notes to any other student or to the instructor.

In addition to MBTI scores, the following data were also collected for each student: estimated total number of e-mail messages sent to peers; number and type (self-disclosure, request for clarification, or other) of e-mail messages sent to the instructor; number of nonrequired conference notes written; number of nonrequired replies made to peers' notes; average length of conference notes written; and total number of lines written in reply to peers' notes.

Students' scores on the MBTI were analyzed in two different ways. As is typically done, each of the four dimensions were treated as continuous variables. However, additional analyses were conducted using only scores that reflected a clear preference for either pole of a dimension. Arbitrarily, "clear preference" was defined as a score 10 or more points away from zero on any given dimension.

## RESULTS

The data were organized according to two major questions: (1) What relationships exist among MBTI dimensions, ethnicity, and whether or not English was one's native language? (2) What relationships exist among MBTI dimensions and CMC usage?

**MBTI dimensions, ethnicity, and native language.** Table 16.1 shows a distribution of the 55 students according to psychological type.

It is interesting to note that, overall,  $41/55 = 75\%$  of the students were S,  $29/55 = 53\%$  were SJ, and  $19/55 = 35\%$  were SFJ. The importance of further categorizing students according to whether English was their native language is shown by the fact that the corresponding percentages of nonnative speakers in those three groups (viz., 92%, 64%, and 48%, respectively) are even more extreme than for the sample as a whole.

Table 16. 1  
Distribution of Native Speakers and Non-native Speakers According to Type

<b>ISTJ (5)</b> F mmm M	<b>ISFJ (13)</b> fff m FFFFFF MMM	<b>INFJ (3)</b> f m F	<b>INTJ (2)</b> f m
<b>ISTP (4)</b> f m F M	<b>ISFP (4)</b> f FFF	<b>INFP (3)</b> fff	<b>INTP (1)</b> F
<b>ESTP (2)</b> F M	<b>ESFP (2)</b> f m	<b>ENFP (3)</b> ff m	<b>ENTP (0)</b>
<b>ESTJ (5)</b> ff m FF	<b>ESFJ (6)</b> fff FFF	<b>ENFJ (1)</b> f	<b>ENTJ (1)</b> m

Note: f = female native speaker, m = male native speaker, F = female nonnative speaker, M = male nonnative speaker. Parentheses show the total number of students for each type preference.

Next, all students who expressed a clear preference on the EI dimension were jointly categorized according to whether or not they identified an ethnicity underrepresented at UHM and whether or not English had been their native language. For these analyses only the 33 Asian or Asian-American students (excluding those of Filipino, Filipino-American, and Vietnamese-American ancestry) were included as the *nonunderrepresented* group (hereafter, called Asian). Table 16.2 shows the proportion of students in each of those groups who had a clear introversion preference. Though the numbers are small, the data suggest that there is a greater proportion of Asian than underrepresented students with a clear introversion preference.

Similarly, Table 16.3 shows the proportion of students in each of the four groups who had a clear S preference. Unlike the EI dimension, here the major difference lay not along ethnic lines, but depended upon whether one was a native English speaker. All students who spoke English as a second language and who expressed a strong preference on the SN dimension were on the sensing end of the dimension.

Unlike the first two MBTI dimensions, there were no differences in clear preferences on the TF dimension that were related to ethnicity, native English language, or the interaction of these two variables (see Table 16.4).

Table 16.2  
Proportion of Students with Clear Preference for Introversion

		Underrepresented Ethnic Group		
		no	yes	
Native	no	60%	60%	60%
		9/15	3/5	12/20
Speaker	yes	69%	55%	63%
		9/13	6/11	15/24
		64%	56%	61%
		18/28	9/16	27/44

The results for the JP dimension of the MBTI were similar to those for the EI dimension. As Table 16.5 indicates, the proportion of students from under-represented ethnicities at UHM who expressed a clear judging preference was noticeably higher than that of those who identified an Asian ethnicity.

**MBTI dimensions and CMC usage.** There was a significant relationship between score of those expressing a clear preference on the EI dimension and estimated number of e-mail messages sent to peers ( $r(44) = -.43, p < .01$ ). That is, students expressing a clear preference for extraversion sent more messages to peers than those showing a clear preference for introversion.

There was a significant relationship between scores for those expressing a clear *EI* preference and total number of lines used to reply to peers' conference notes ( $r(28) = -.49, p < .01$ ). Similarly, the relationship between scores of those showing a clear *SN* preference and total number of reply lines was also significant ( $r(20) = .50, p < .02$ ). Thus, those students with either a clear preference for extraversion or for intuition tended to write more replies to peers' conference notes than students with either a clear preference for introversion or for sensing, respectively. Compared to students with a clear *S* preference, those with a clear *N* preference also tended to write more nonrequired replies to peers' conference notes ( $r(20) = .41, p < .06$ ) and wrote longer conference notes themselves ( $r(20) = .46, p < .04$ ).

Table 16.3  
Proportion of Students with Clear Preference for Sensing

		Underrepresented Ethnic Group		
		no	yes	
Native	no	100%	100%	100%
		10/10	5/5	15/15
Speaker	yes	55%	63%	58%
		6/11	5/8	11/19
		76%	77%	47%
		16/21	10/13	16/34

Table 16.4  
Proportion of Students with Clear Preference for Feeling

		Underrepresented Ethnic Group		
		no	yes	
Native	no	50%	67%	55%
		4/8	2/3	6/11
Speaker	yes	55%	4/8	53%
		6/11		10/19
		53%	55%	53%
		10/19	6/11	16/30

Contrary to expectations, there were no significant relationships between scores of any of the MBTI dimensions and either self-disclosure or requests for clarification in e-mail messages to the instructor. However, considering only those students from ethnic groups underrepresented at UHM who spoke English as a second language, there was a significant relationship between those five who expressed a clear preference on the EI dimension and number of e-mail messages sent to the instructor requesting clarification ( $r(3) = .91, p < .04$ ). Specifically, those with clear *I* preferences sent more such messages.

It is also interesting to note that, considering all 25 nonnative speakers of English, there was a different pattern of sending e-mail messages to peers and the instructor. Whereas those students estimated sending nearly as many messages to peers over the semester ( $= 17.9$ ) as did the 30 native speakers ( $= 21.6$ ), they sent less than half the number of messages to the instructor ( $= .48$  and  $= 1.16$ , respectively).

## DISCUSSION

There are several reasons for extreme caution in interpreting the results of this study. First, the study took place in a classroom where research considerations were of less importance than pedagogical ones. Over the three semesters, there were

Table 16.5  
Proportion of Students with Clear Preference for Judging

		Underrepresented Ethnic Group		
		no	yes	
Native	no	75%	83%	78%
		9/12	5/6	14/18
Speaker	yes	56%	89%	72%
		5/9	8/9	13/18
		67%	87%	75%
		14/21	13/15	27/36

slight variations in course structure and major differences in the population served. The most obvious change was from less than 25% of the class nonnative English speakers to more than 50%. Secondly, results of the present study are quite different than earlier results. Finally, the difficulty of assessing human dispositions across cultural categories must again be stressed; in this study, for example, cultural variables of ethnic identification and whether or not English was the native language yielded somewhat different results.

**Culture and the MBTI.** There were clear differences along three of the four MBTI dimensions, two (EI and JP) between the two ethnicity categories and one (SN) between native and nonnative speakers of English. Fully two-thirds of the nonnative speakers were SJ types, but this may be due to the nature of the particular students who enrolled in the course. During the last semester, for example, over half of the nonnative speakers were ethnic Chinese majoring in business. Nevertheless, whether or not English is one's native language may be an important cultural variable to consider, in addition to ethnic identification.

**MBTI and computer use.** As mentioned above, present results do not corroborate earlier findings. One possible factor to investigate in future research are the differing cultural conceptions of appropriate student behaviors. The nonnative speakers in the most recent semester were predominantly Chinese; their conception of "college professors" may be quite different from that of native speakers. For that matter, it is not clear to what degree MBTI differences are due to a different semantic interpretation of the questions on the MBTI inventory, a different interpretation of the "testing situation" itself, or to real differences in the dimensions that define particular cultures. That they sent so few e-mail messages to the instructor at all may have affected the relationship between EI preference and type of message sent. It should also be noted that the measures used in the present study focused on interest (e.g., voluntary assignments) rather than achievement.

**Some concluding thoughts about using the MBTI in college classrooms.** Both the significant findings in the present research and my observations in processing MBTI scores with students indicate positive value in using the MBTI. Further, it may be as useful a tool for assessing basic personality dimensions across cultural contexts as any other. The EI and JP dimensions seem to hold particular promise, at least for measuring the kind of educational interactions examined in the present study. But such use, for either developmental or research purposes should be undertaken with a good deal of humility since: results have not been very consistent; cultural variables are extremely difficult to define with any confidence; and the two MBTI dimensions that are considered the more fundamental theoretically (SN and TF) have not proven as fruitful in many of the studies.

Second, it may be more productive, from both a research and a counseling perspective, to de-emphasize the 16 "types" and examine clear preferences within each of the four dimensions. In almost all instances, correlations were stronger when only those students with a clear preference were considered than when the dimensions were scored continuously and all students were considered. If only clear preferences were used, it might be possible to analyze smaller samples more reliably. Statistically, it is not surprising that using the cutoff in the present study yielded consistently stronger results than using all scores on a given dimension. Yet, even with that quite modest cutoff, the percentage of students not expressing a clear preference on a dimension varied between 17% and 43%. There also may be educational benefit to using only clear dimensional preferences. Our society uses quantitative assessments to determine competence and success so often that, despite my best efforts, students are likely to

consider the MBTI as another kind of “educational test.” Thus, many students who express borderline preferences on one or more dimensions are likely to weigh the “type” reported to them much more strongly than seems warranted.

Finally, in such complex and subtle research, there is a strong need for convergent evidence using other measures of cultural variables and different assessments of course interest and achievement.

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