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A Comparison of Perceived Advantages and Disadvantages
between Computer-mediated communication
and Face-to-face Communication in
Problem-Solving Consultation

Thesis

Submitted to

The School of Education and Allied Professions of the
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The Degree

Educational Specialist

By

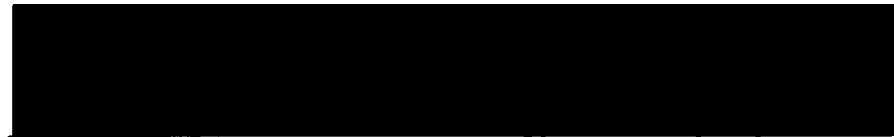
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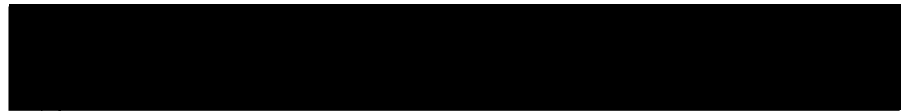
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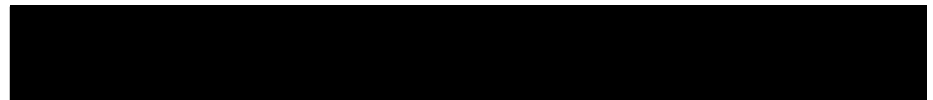
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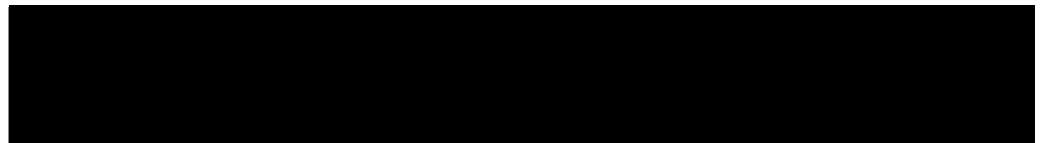
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ABSTRACT

UNDERSTANDING THE ADVANTAGES AND DISADVANTAGES BETWEEN COMPUTER-MEDIATED COMMUNICATION AND FACE-TO-FACE COMMUNICAION IN THE CONSULTATION SESSION

By

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The University of Dayton, 2005

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The purpose of this study is to examine the advantages and disadvantages of using computer-mediated communication and face-to-face communication in the consultation session. Although consultation is often reported as the most preferred and satisfying activity of school psychologists, the time and energy required to conduct these problem-solving sessions is often limited. Computer-mediated communication is an alternative avenue for school psychologists to collaborate with educators beyond the classroom environment. School psychology students participating in a required consultation course and practicing teachers of various grades served as subjects. Results provided information about the advantages and disadvantages of using these various methods of communication to conduct consultation sessions in the school.

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Understanding the Advantages and Disadvantages Between Computer-mediated communication and Face-to-face Communication in the Consultation Session

Introduction

In response to public law 94-142 mandating that children with handicapping conditions receive education in the least restrictive environment, school-based consultation services have become a vital and growing element of professional services for children with special needs (Gutkin, 1996). As such, collaborative consultation is becoming increasingly recognized as an important component in the profession of school psychology. Although school psychologists find themselves predominately playing the role of test administrator, consultation is often identified as their most preferred and satisfying activity (Kratochwill & Stoiber, 2000). In a recent survey, Hall (2002) found that although assessment remains the dominant role of practicing school psychologists, and consultation services have shown a recent decline, decreasing from 20% of time spent in consultation in 1987 to only 16% in 2002. Despite a preference to conduct problem solving through consultation, school psychologists consistently report that they have an insufficient amount of time to devote to the consultation process (Wilczynski, Mandal, & Fusilier, 2000). However, recent changes in the Individuals with Disabilities Education Act (IDEA; Pub.L. 105-17, 1997) may expand the range of consultation services offered by school psychologists, assisting a variety of students through the development and implementation of academic and behavioral interventions in the classroom (Wilczynski et al., 2000). In looking for alternative avenues when conducting

consultation sessions, computer-mediated communication (CMC) has emerged as a realistic substitute for face-to-face (FTF) consultations. The purpose of this study is to analyze the perceived advantages and disadvantages of using CMC and FTF communication in regards to problem solving in the consultation session.

Consultation in Schools

Consultation can be understood as a process of problem-solving collaboration that leads to various interventions and outcomes. It involves structured sessions, supported by open communication, in which there is a non-hierarchical relationship between participants (e.g., school psychologist and teacher) who address a specific problem regarding a third party (e.g., student). Participants in the consultation session are not regarded as experts having all of the answers, but as professionals with relevant information and expertise to contribute to the problem-solving process (Gutkin, 1996). Though there are many goals of consultation, most school-personnel use these problem-solving sessions to assess and intervene in a student's specific problem situation, or as a proactive approach to prevent student problems from arising or becoming more serious. Various problem-solving models exist to guide participants through consultation sessions with the goal of problem resolution in mind. However, three major problem-solving models of consultation are most often used in the practice of school psychology: mental health consultation, organizational development consultation, and behavioral consultation (Kratochwill & Bergan, 1990). Though these models differ on many levels, each consultation method can be used effectively in both FTF and CMC consultations. For the purpose of this study, behavioral consultation was employed by the participants in both

the FTF and CMC consultations. Behavioral consultation involves indirect service delivery. That is, a client (e.g., a student) is served by a consultee (e.g., a teacher) with the help of services provided by a consultant (e.g., a school psychologist). By using behavioral consultation, participants have the opportunity to address academic and social/behavior problems by using a four-step problem-solving approach. These four steps include: 1) problem identification, 2) problem analysis, 3) treatment implementation, and 4) treatment evaluation (Kratochwill & Bergan, 1990). During the first stage of this problem-solving model, problem identification, the consultee and consultant come to an agreement regarding the specification of the problem or problems to be addressed during consultation. This is usually accomplished through the use of a problem-identification interview. Once this is achieved, the consultation session moves into the problem-analysis stage. The primary purposes during this phase are to identify variables that might facilitate a problem solution and to develop a plan for intervention. Next, during the treatment implementation stage, the consultee oversees the implementation of the problem-solving plan and collects data regarding any academic or behavior changes that occur during this time, while the consultant's task is to make sure that the intervention is implemented with integrity. Finally, after a designated time period, treatment evaluation is carried out to evaluate the effectiveness of the intervention plan.

School psychologists have traditionally conducted consultation sessions using FTF communication. Face-to-face interaction is often believed to be the most powerful way to communicate, allowing for timely feedback, the use of natural language, and the

communication of nonverbal gestures (Mason, 2000). Nonverbal communication, including facial expression, eye contact, voice tone and pitch, and body movement, convey important attitudes and feelings during a FTF session (Hartman, Ogden, & Geroy, 2000). In addition, FTF meetings are often seen as the most effective way to build personal relationships, and create a deeper kind of rapport between the participants (Pauleen & Yoong, 2001). Face-to-face meetings are often seen as having a social presence, allowing for the personal exchange of information, ideas, and problem-solving strategies, as well as the offering of emotional support between collaborators. Although school psychologists acknowledge these benefits, they often find themselves lacking the time and access required to conduct FTF problem solving sessions.

Technology in the Classroom

The ability to collaborate through the computer has provided a problem-solving opportunity free of time or place constrictions, allowing for the possibility of CMC technologies to shape the future of education (Brandon & Hollingshead, 1999). CMC can take the form of synchronous and asynchronous mediums. Synchronous communication takes place in real time, as if two people were speaking on the telephone, and includes such tools as videoconferencing and chat rooms. Asynchronous communication assumes a time-lapse (minutes or days) between the delivery of messages, including electronic bulletin boards and email (Hawkes, 2001). Asynchronous and synchronous communication provides educators with opportunities to consult and collaborate through the use of computer technology (Ohlund, Yu, Jannasch-Pennell, &

DiGangi, 2000). For the purpose of this study, asynchronous communication will be examined exclusively.

The increase in the number of educators who have access to the Internet and network resources makes teachers one of the fastest growing populations gaining access to on-line technologies (Hawkes, 2001; Schrum, 1999). Educators have typically used computer technology for curricular instruction and student learning; yet new standards for teacher-education programs emphasize preparation for collaboration with colleagues and parents and technological skills for professional learning (Mason, 2000). Given time, Riva (2002) suggests that computer-mediated communication can allow for the development of interpersonal relationships, including trust, comfort, and receptiveness between communicators.

Though this collaborative relationship can develop in CMC, several factors with potential influence on the use of CMC by teachers exist. Van Braak (2001) describes possible influencing factors as including: 1) demographics, 2) computer experience, 3) computer attitudes and 4) innovativeness. First, studies have suggested that the demographic characteristics of age and gender play a key role in relation to computer use (Kirkpatrick & Cuban, 1998; van Braak, 2001). In general, males have been found to be more experienced in their use of computers, more involved with computing, and have more favorable attitudes toward computers than do their female counterparts. Secondly, van Braak (2001) proposes a positive relationship between the degree of computer experience and CMC use, suggesting that CMC users have more computer experience, technical background, and computing skills than non-CMC users. Third, although

teachers' favorable attitudes toward the use of computers as general tools in the classroom have been measured, these attitudes do not necessarily represent teachers' feelings regarding the use of computers in a consultation session. Finally, although teachers are among the fastest growing groups gaining access to the Internet, van Braak (2001) explains that the slow integration of technology into some classrooms may be due to teachers' anxiety about and resistance to change. Hurt, Joseph, and Cook (1977) describe this awareness of the need for change and degree of willingness to change as innovativeness. Therefore, teachers who lack innovativeness may struggle to integrate or even understand the possible uses for technology in their classrooms.

Significance of the Problem

The provision of consultation services has become a dilemma in the practice of school psychology because time and availability appear to be a nemesis for FTF meetings. Although FTF consultation has traditionally been used by school psychologists, computer-mediated-communication now emerges as a realistic alternative to conducting problem-solving sessions. Researchers have argued that FTF communication provides the opportunity to trade information and ideas quickly, without losing the effects of nonverbal language (Ingram, Hathorn, & Evans, 2000; Hartman et al., 2000). Computer-mediated communication, on the other hand, provides an alternative avenue free of time and distance that allows participants to exchange thoughts, information, and support in a stress-free environment without interruption (Pearson, 1999; Dutt-Doner & Powers, 2000; Hawkes & Cambre, 2001). Though school psychologists and teachers may lack access, technical support, and training to

successfully utilize CMC (Dexter, Anderson, & Becker, 1999), the opportunity to provide FTF consultation appears to be limited in practice. Given the advantages and disadvantages of FTF communication and CMC, school psychologists are faced with the challenge of deciding which medium to use to conduct their consultation sessions.

Purpose of the Study

With a possible increase in the need for consultation services offered by school psychologists and a continued lack of time to devote to the effort, CMC has materialized as a potential avenue for school psychologists to use when engaging in problem-solving opportunities. This study examined the advantages and disadvantages of using CMC and FTF communication when conducting consultation sessions. The results of this study will provide detailed information for school psychologists regarding the use of each communication medium when deciding how to provide consultation services in their schools.

Method

Participants

Participants in this study involve two distinct groups of individuals. First, graduate students enrolled in a consultation course and its associated practicum participated in this experiment and served in the role as consultant. Ten graduate students participated in the study, nine females and one male. However, only eight students completed the study with one female participant dropping out of the course during the semester, and another female participant failing to complete the requirements of the study. Each student was in his or her first or second year of the school psychology

program at a midwestern university. Most had full or part time jobs, and experience working with children in schools or social service agencies. Students were informed that participation was voluntary and would not positively or negatively impact their course grade. Second, each graduate student was linked with an individual educator or team of educators currently teaching in an educational setting either around the university or near their place of employment. The group of participating teachers served as the consultees in the study. Teachers varied in their amount of teaching experience, and were found in early childhood centers, preschools or elementary schools. To participate, all teachers were required to have a personal computer in their classroom with Internet access. An explanation of the study was presented at various schools, and participation by educators was voluntary.

Materials

Subjects were expected to complete two consultation sessions utilizing collaborative problem solving in both the FTF and CMC settings. After being trained with the four-step problem-solving model presented by Kratochwill and Bergan (1990), graduate students acted as consultants to assist a teacher or team of teachers with two current problems using both FTF and CMC communication. At the completion of each consultation session, participants completed a satisfaction questionnaire. This questionnaire was used to assess the ease of the problem-solving process, the social characteristics involved in the process, and the overall satisfaction felt by the consultant and consultee during the session. Similar questionnaires were completed by the graduate students and teachers at the completion of both the FTF and CMC

consultation sessions. See Appendices A and B for these questionnaires. In addition, after the participants concluded both of their consultation sessions, each group had the opportunity to provide written statements regarding their experiences with both FTF and CMC for the purpose of gathering qualitative information on their perceived advantages and disadvantages of each communication medium.

Design and Procedures

This study was designed to investigate the impact of the independent variable, mode of consultation (FTF vs. CMC), on the dependent variables of satisfaction and presence of social characteristics found during problem-solving consultations. Students were introduced to the four-step problem-solving process as a part of their regular course work. Students were then paired with one another to practice their consultation skills utilizing the problem-solving model, serving as the consultant in both FTF and CMC settings. This practice not only allowed students to become more confident in their role as consultant, but also permitted them to learn the skills necessary to participate in computer-mediated consultation.

Upon completion of their training and practice, students were linked with a teacher or team of teachers currently employed in surrounding school districts. Teachers who volunteered for the study completed a short training session explaining the concepts behind the experiment and the necessary paperwork involved for their completion. Each graduate student then conducted two consultation sessions with their assigned teacher(s) using both FTF and CMC formats.

During the FTF consultation, consultees were asked to present the consultant with a meaningful, realistic problem they were experiencing in their classrooms. The graduate student, acting as the consultant, used the four-step problem-solving model to guide the consultation session. No time limit was placed on the face-to-face meetings, allowing for initial and follow-up consultation times, and students were required to submit an audiotape of all consultation sessions. At the conclusion of the session, both parties completed a questionnaire regarding the ease, social characteristics, and satisfaction of their consultation session.

Each graduate student was also required to complete a computer-mediated consultation with his or her assigned teacher(s). Students and teachers were allowed to use computers available to them at their home, work, or university lab to allow more flexibility with their computer use. Teachers e-mailed their student-consultant with a different problem, and the two participants again worked through the problem-solving process. Again, no time frame was placed on the completion of the session. At the conclusion, participants completed the questionnaire to assess ease, social characteristics, and satisfaction of their CMC session.

Throughout the experiment, participants were reminded that consultation sessions were to remain confidential, with the names of any students being changed or omitted from their conversations. At the conclusion of both consultation sessions, the participants had the opportunity to share their opinions about their experiences with FTF and CMC sessions and ways to improve both face-to-face and computer-mediated consultation.

Measures and Analysis

The level-of-satisfaction data were collected using the satisfaction questionnaire. Each participant used a score between 1 (lowest) and 5 (highest) to rate his or her satisfaction with various parts of the session, ease of completing the problem-solving process, and overall satisfaction with the consultation session. A paired-samples *t*-test, significance tested at the .05 level, was used to report the group differences between the CMC and FTF consultation sessions. In addition, effect size for each pair of data was calculated by dividing the reported value of *t* by the square root of *N*, where *N* represents the number of paired data.

Finally, participants were provided with a written prompt for which they could provide feedback regarding their opinions on the positive and negative aspects of both FTF and CMC communication. Although not all participants responded, these qualitative data were gathered for analysis to supplement the results found from the satisfaction questionnaires as indicated in Table 1.

Results

Paired-samples *t* tests were conducted to evaluate the level of satisfaction participants reported after conducting both face-to-face (FTF) and computer-mediated communication (CMC) consultation sessions. Results indicate that the overall satisfaction participants reported after conducting their FTF consultation session ($M = 4.00$, $SD = 1.11$) was significantly greater than the level of satisfaction reported after their CMC session ($M = 2.79$, $SD = 1.58$), $t = 3.08$, $p < .01$, with a large effect size of 0.82.

Social characteristics were also found to be significantly different when comparing FTF and CMC consultation. As indicated in Table 2, participants reported

that the FTF consultation session was more personal, social, sensitive, and warm than the CMC process. In addition, participants reported significant differences between the overall quality of the communication process, quantity of communication, and feelings toward their consultation partners, with FTF sessions being significantly higher than CMC sessions.

No significant differences were found when comparing FTF and CMC consultation sessions with regards to the following items: quality of communication conditions; participants' level of trust, understanding, and anxiety; provision of moral and emotional support; provision of new, practical solutions or insights to the presented problems; equality in participation; and assisting with planning. These items were also found to have a moderate or small effect size of 0.5 or less.

Table 1

Qualitative Comments

Comment 1: "I found the CMC difficult because I like to see nonverbal cues in social interactions. It is hard to read someone's emotions over email unless you really know the person."

Comment 2: "The biggest problem was trying to schedule meetings. Again, the experience was a good one and some change has occurred with the children."

Comment 3: "It was hard to communicate sometimes because we held our meetings in the classroom. There were a lot of distractions during consultation."

Comment 4: "It was difficult to coordinate out schedules for meetings. My partner did not use the internet that often."

Comment 5: "Time constraints. It was just hard to schedule with someone far enough away that our meetings felt rushed."

Comment 6: "I had to drive an hour from work for our meetings. The coordination of schedules depended on my availability and was difficult. I felt more communication could have been done during FTF, but time constraints made it difficult."

Comment 7: "Sometimes the problem gets dealt with more thoroughly when meeting face-to-face."

Comment 8: "Computer-based consultation took way too much time, was less personal, and less effective overall."

Table 2

Mean Satisfaction Scores Comparing FTF and CMC Consultation Sessions

Question	<i>M</i>		<i>SD</i>		<i>T</i> score	Effect Size
	FTF	CMC	FTF	CMC		
Overall satisfaction	4.00	2.79	1.11	1.58	3.08**	0.82
Social characteristics:						
personal	4.21	2.64	0.70	1.45	3.91**	1.05
warmth	3.86	2.79	1.03	0.80	3.74**	1.00
sociable	4.21	2.86	0.80	1.03	6.03**	1.61
sensitivity	4.07	3.21	1.00	0.89	3.12**	0.83
Satisfaction with process:						
quality of communication	4.14	3.00	0.95	1.36	3.17**	0.85
quality of conditions	3.86	3.07	0.95	1.27	1.71	0.46
quantity of communication	3.86	2.93	1.41	1.33	3.05**	0.82
level of anxiety	3.64	2.93	1.39	1.14	1.93	0.52
feelings toward partner	4.29	3.79	1.14	1.25	2.46*	0.66
level of trust	4.14	4.07	1.10	1.38	.043	0.01
provision of support	4.00	3.57	1.04	1.58	1.47	0.39
provision of solutions	3.93	3.25	1.00	1.28	1.92	0.51
level of understanding	4.07	3.39	0.92	1.52	1.47	0.39
level of comfort	4.29	3.39	1.07	0.74	2.69*	0.72
equality in participation	3.93	3.39	1.00	1.15	2.07	0.55
assisting with planning	3.86	3.07	1.03	1.32	1.86	0.50

* $p < .05$, ** $p < .01$

Discussion

Despite the importance of and preference for increasing consultation within their practices, school psychologists often find themselves without the time, energy, or availability to conduct these problem-solving sessions. Face-to-face encounters have been the norm for consultation interactions, but time and distance gaps often present barriers for school psychologists to providing this service in the school setting.

Computer-mediated-consultation has emerged as a realistic means for school psychologists to communicate with teachers and parents, and school psychologists are faced with the challenge of deciding if CMC can offer the same satisfying, meaningful exchange as their traditional FTF consultation sessions.

The results of this study suggest that although participants felt more satisfied with the overall conditions of their FTF problem-solving consultation sessions, CMC produced many of the qualities necessary for a successful consultation session. Though participants in this study felt that computer-mediated communication could not offer the consultant and consultee the warm, personal, and social environment in which to converse and exchange ideas, it could present both parties with the same meaningful elements and rewarding experience provided by a FTF session. Participants in this study reported no differences between the equality of participation throughout both consultation sessions. In addition, participants' level of trust, understanding, and anxiety were reported as equal among the two communication mediums. Finally, participants reported no differences between CMC and FTF consultation sessions with regards to both the amount of moral and emotional support exchanged during the session and the provision

of new, practical solutions or insights to problems presented during the problem-solving consultation. The results of this study suggest that not only can CMC present an alternative avenue when time and distance prevent FTF consultation from occurring, but can also provide a medium in which an exchange of ideas, provision of insight and solutions, and the offering of moral and emotional support can transpire between participants.

The results of this study provide school psychologists with information regarding CMC as an alternate form to FTF consultations; however, several limitations can be found within this research. First, research containing small samples can often have discrepancies and jeopardize the statistical power of any significant findings. Second, the graduate students participating in this study formed a convenience sample, and participating teachers were solicited based on their relative location to the university and the graduate students' places of employment, in addition to their willingness to participate in the study. This sampling did not allow for random assignment of pairings, and may influence results if previous relationships existed between subjects. Third, although students were familiar with Kratochwill and Bergen's (1990) four-step problem-solving model, it has yet to be determined if the model lends itself to consultation over the Internet. Finally, logistical issues, such as computer malfunctions and time constraints regarding access to a computer or the Internet, often arise when conducting research that utilizes computers, and may have had an impact on the results.

Despite suggesting that CMC may be a satisfying alternative for conducting consultation sessions, several issues concerning CMC still need to be explored. Future research is needed to examine problem-solving models that may better lend themselves to

CMC rather than FTF consultations. In addition, research needs to focus on ways in which to enhance the social characteristics, such as warmth and sensitivity, that participants felt were lacking during the CMC process. Finally, a replicate study using professional school psychologists and practicing classroom teachers needs to be conducted in order to explore their feelings toward and satisfaction with CMC and FTF consultation.

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SATISFACTION QUESTIONNAIRE

This questionnaire is to be completed by each participant individually, without discussing your responses with your consultation partner, at the conclusion of each problem-solving process. At the conclusion of the problem-solving processes, you should have two questionnaires completed.

Please answer these questions in regards to your FACE-TO-FACE CONSULTATION.

1. Rate your overall satisfaction with this collaborative problem-solving consultation process:
 - 1 = Very dissatisfied
 - 2 = Somewhat dissatisfied
 - 3 = Moderate satisfaction
 - 4 = Somewhat satisfied
 - 5 = Very satisfied

2. Circle the appropriate response for each of the following social characteristics with regard to the face-to-face communication condition during this problem-solving process:

a.	Very impersonal	Somewhat impersonal	Moderate	Somewhat personal	Very personal
b.	Very cold	Somewhat cold	Moderate	Somewhat warm	Very warm
c.	Very unsociable	Somewhat unsociable	Moderate	Somewhat sociable	Very sociable
d.	Very insensitive	Somewhat insensitive	Moderate sensitive	Somewhat sensitive	Very sensitive

3. Rate the following for satisfaction with this problem-solving process:
 - a. Overall quality of the communication process
 - 1 = Very dissatisfied
 - 2 = Somewhat dissatisfied
 - 3 = Moderate satisfaction
 - 4 = Somewhat satisfied
 - 5 = Very satisfied

b. Quality of communication conditions

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

c. Quantity of communication

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

d. Level of anxiety

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

e. Feelings toward partner

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

f. Level of trust

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

g. Providing moral and emotional support

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

h. Providing new, practical solutions or insights to the presented problem

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

i. Level of understanding

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

j. Level of comfort

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

k. Equality in participation

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

l. Assisting with planning

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

4. For the answers to number 3 that were rated either 1 (very dissatisfied) or 2 (somewhat dissatisfied) please provide a brief explanation for the response:

APPENDIX B

IDENTIFICATION CODE _____

SATISFACTION QUESTIONNAIRE

This questionnaire is to be completed by each participant individually, without discussing your responses with your consultation partner, at the conclusion of each problem-solving process. At the conclusion of the problem-solving processes, you should have two questionnaires completed.

Please answer these questions in regards to your COMPUTER-MEDIATED CONSULTATION.

1. Rate your overall satisfaction with this collaborative problem-solving consultation process:
 - 1 = Very dissatisfied
 - 2 = Somewhat dissatisfied
 - 3 = Moderate satisfaction
 - 4 = Somewhat satisfied
 - 5 = Very satisfied

2. Circle the appropriate response for each of the following social characteristics with regard to the computer-mediated communication condition during this problem-solving process:

a.	Very impersonal	Somewhat impersonal	Moderate	Somewhat personal	Very personal
b.	Very cold	Somewhat cold	Moderate	Somewhat warm	Very warm
c.	Very unsociable	Somewhat unsociable	Moderate	Somewhat sociable	Very sociable
d.	Very insensitive	Somewhat insensitive	Moderate sensitive	Somewhat sensitive	Very sensitive

3. Rate the following for satisfaction with this problem-solving process:
 - a. Overall quality of the communication process
 - 1 = Very dissatisfied
 - 2 = Somewhat dissatisfied
 - 3 = Moderate satisfaction
 - 4 = Somewhat satisfied
 - 5 = Very satisfied

b. Quality of communication conditions

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

c. Quantity of communication

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

d. Level of anxiety

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

e. Feelings toward partner

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

f. Level of trust

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

g. Providing moral and emotional support

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

h. Providing new, practical solutions or insights to the presented problem

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

i. Level of understanding

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

j. Level of comfort

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

k. Equality in participation

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

l. Assisting with planning

- 1 = Very dissatisfied
- 2 = Somewhat dissatisfied
- 3 = Moderate satisfaction
- 4 = Somewhat satisfied
- 5 = Very satisfied

4. For the answers to number 3 that were rated either 1 (very dissatisfied) or 2 (somewhat dissatisfied) please provide a brief explanation for the response:

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