

Technology-Based Groups: A Review and Conceptual Framework for Practice

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Despite the proliferation of technology-based groups in the practice arena, existing models of social work practice do not address the distinctive features of these innovative group forms. This article provides a comprehensive review of the professional, popular, and social psychology literature related to technology-based groups. A conceptual framework that extends current conceptions of social work with groups to telephone conference call and computer-assisted groups is also presented. This framework builds on existing models of social work practice with face-to-face groups by drawing on the experience and evaluation of practitioners and on social psychology theory and research related to technology-based groups. Important features of technology-based groups are identified at the individual, group, and environmental system levels. Based on this framework, ways to prepare social workers for practice with technology-based groups are discussed and guidelines for practice are suggested.

Key words: computer; framework; groups; technology; telephone

Telephone conference call and computer-assisted groups offer the benefits of group treatment, education, and support to individuals who cannot or choose not to attend face-to-face groups. They also can expedite participation in organizational and community planning and decision making. These technology-based groups are still a novelty, however, and are rarely mentioned in texts on social work practice. Innovative practitioners who want to use technology to bring people together in groups must rely on conceptual frameworks that have been designed for groups whose members have face-to-face interactions. These

frameworks often have limited applicability for work with telephone groups in which members may know each other only by their voices or for computer groups where members may only make contact through messages flashing on a screen.

We address this conceptual gap in social work knowledge by presenting a framework for practice with telephone and computer groups. Our framework is grounded in existing models of social work with face-to-face groups and extends these conceptions to groups whose members are physically separated and connected only by technology. This framework draws on

the experience and wisdom of human services practitioners and scholars and on theoretical explanations and research findings from social psychology.

Practice with Telephone and Computer Groups

Our conception of current practice with telephone and computer groups has evolved from our review of the professional and popular literature, our own experience, and a survey we conducted of group work practitioners (Galinsky, Schopler, & Abell, 1997; Schopler, Galinsky, & Abell, in press). The professional literature is predominantly descriptive and stresses the advantages related to using technology. Although some of the drawbacks are mentioned by professionals, the risks and challenges of technology are more likely to appear in the popular press. The growing literature on technology-based groups describes their use for a wide array of purposes and populations and identifies their potential benefits and challenges.

Purposes and Populations

Technology-based groups often are used to overcome barriers such as stigma, physical and emotional conditions, distance, lack of transportation, and conflicting responsibilities that may discourage attendance at face-to-face groups. With telephone conference call and computer technology, practitioners are reaching out to individuals in their homes or offices. During regularly scheduled meetings, members provide support, information, and practical or emotional help to each other or make decisions and complete tasks over the telephone. In computer groups, members share feelings, exchange information, develop skills, solve problems, work on tasks, and make decisions through messages they post simultaneously or asynchronously, at their convenience, at any time of the day or night. Membership in technology-based groups may be as few as three people for either type, but hundreds of people conceivably may participate in a computer group.

Since the late 1970s, practitioners have used telephone groups to assist such diverse populations as blind elderly clients (Evans & Jaureguy, 1982b; Evans, Werkhoven, & Fox, 1982; Tho-

mas & Urbano, 1993), adults with physical disabilities (Evans, Fox, Pritzl, & Halar, 1984; Evans, Halar, & Smith, 1985; Evans, Smith, Werkhoven, Fox, & Pritzl, 1986; Kennard & Shilman, 1979), people with HIV disease (Meier, Galinsky, & Rounds, 1995; Rittner & Hammons, 1992; Roffman, Beadnell, Ryan, & Downey, 1995; Rounds, Galinsky, & Despard, 1995; Rounds, Galinsky, & Stevens, 1991; Wiener, Spencer, Davidson, & Fair, 1993), cancer patients (Colon, 1995), and homebound individuals with multiple sclerosis (Stein, Rothman, & Nakanishi, 1993). More recently, social workers have shown that computer technology provides a feasible and productive way to work with groups such as caregivers of people with Alzheimer's disease and other forms of dementia (Brennan, Moore, & Smyth, 1992; Smyth & Harris, 1993), survivors of sexual abuse (Finn, 1995; Finn & Lavitt, 1994), cancer patients (Weinberg, Schmale, Uken, & Wessel, 1995, 1996), chronically ill children and youths (Ell & Reardon, 1990; Levenson & Signer, 1985), and emotionally disturbed adolescents (Zimmerman, 1987). Social workers also are using telephone and computer technology on a daily basis to accomplish group tasks, make decisions, and foster relationships at the organizational and community levels (Calhoun, 1986; Nurius & Hudson, 1993) and to educate practitioners (Seabury & Maple, 1993; Watson, 1983).

Benefits and Challenges

The benefits and challenges practitioners that report from their work with technology-based groups offer important insights for developing a framework for these groups. Some of the benefits of technology mentioned in the professional literature include flexible meeting arrangements (Brennan et al., 1992; Evans et al., 1985; Weinberg, Schmale, et al., 1995), supportive intimacy (Evans et al., 1984; Evans et al., 1985; Weinberg, Uken, Schmale, & Admek, 1995), increased accessibility (Finn & Lavitt, 1994; Kennard & Shilman, 1979; Smyth & Harris, 1993; Sparks, 1992; Wiener et al., 1993), privacy for stigmatized individuals (Evans et al., 1984; Finn & Lavitt, 1994; Rounds et al., 1995; Wiener et al., 1993), reduced salience of

irrelevant differences related to race and socioeconomic status (Evans & Jaureguy, 1982a; Finn & Lavitt, 1994; Zimmerman, 1987), programming opportunities such as interactive health information (Campbell & Walsh, 1982) and games (Clarke & Schoech, 1989; Levenson & Signer, 1985; Powers & Ball, 1983), and precise information exchange (Carr, Ghosh, & Ancill, 1983; Stein et al., 1993; Thomas & Urbano, 1993). Challenges faced by these groups include technological snafus (Brennan et al., 1992; Weinberg et al., 1996; Wiener et al., 1993), difficulty in assessing member needs (Kennard & Shilman, 1979; Rittner & Hammons, 1992; Rounds et al., 1991), hostility and insensitivity (Finn & Lavitt, 1994), and concern about confidentiality (Rounds et al., 1991).

In the popular press, articles reiterate all of the rewards of using technology to bring people together, affirm the negatives noted by professionals, and sound the alarm for other potentially harmful effects, particularly for computer groups. Some of the rewards mentioned relate to access and decreased isolation (Appleby, 1995; Rovner, 1995) and increased openness and honesty (Kantowitz et al., 1993; Murray, 1993; Pollsack, 1994). Some of the key issues raised in the popular press relate to destructive intimacy, lack of privacy, the dangers related to "flaming" (that is, writing messages using inflammatory language), and unequal access. For example, Goldberger (1995) spoke to the "inhumanity of the Internet" (p. B1); Lewis (1994) raised issues of artificial intimacy and confidentiality; Murray (1993) discussed concerns about the impersonality of computer communication; Rheingold (1993) noted that the computer "brings people together in new ways and distances them in others" (p. 49); and Seabrook (1994) discussed the problems with privacy, security, and flaming. A number of authors have discussed access issues related to race, gender, and socioeconomic status (Kantowitz, 1994; "Scholars Explore," 1997; Suggs, 1995; Williams, 1995). Furthermore, several authors applauded the contributions of technology but contended it is no substitute for face-to-face interaction (Foderaro, 1995; Freudenheim, 1994; Gabriel, 1995).

Our survey of a random sample of 213 social group workers (Galinsky et al., 1997; Schopler et al., in press) about their conception of practice with telephone and computer groups offers another source of information about the benefits and challenges of technology-based practice. The respondents in this sample reported low knowledge and comfort with these new group forms and had limited experience with their use. Their perceptions were generally consistent with published accounts of human services professionals, but they gave more details about the specific nature of benefits and problems. Their descriptions have been helpful in identifying the features of technology-based groups that need to be addressed in developing interventions.

On the basis of our examination of the literature and our survey, we categorized benefits of using technology-based groups as increased accessibility, convenience, anonymity, and group process assets; we categorized problems as decreased interpersonal cues, technological issues, group process issues, and professional and organizational concerns (Schopler et al., in press). Both telephone and computer groups appear to have substantial potential for a wide range of populations, and practitioners are alert to their benefits as well as their challenges. Practitioner discomfort and lack of knowledge suggest, however, the need for a framework to understand and deal with differences related to technology.

Understanding Technological Connections

Social psychology theory and research are important to consider in developing the conceptual base for a framework for intervention with technology-based groups. The social psychology literature addresses the effects of two important phenomena—*anonymity* and *lack of nonverbal cues*—that contribute to many of the benefits and problems associated with telephone and computer groups. Because members of technology-based groups are not in the presence of each other, they can determine what information they will share about their identity, their opinions, their experience, and their emotions. Nonverbal cues are missing from these group interactions. Understanding how member control over anonymity and social cues affects

group interaction and outcomes provides guidance for developing appropriate interventions.

The examination of the effects of anonymity and social cues in all types of groups has been a long-standing research concern in social psychology (Hiltz & Turoff, 1993); the recent research related to computer-assisted decision making is particularly germane to our interest in technology-based groups. Four concepts useful in developing an intervention framework for technology-based groups—*social presence*, "*social impact*," *deindividuation*, and "*social loafing*"—directly address the lack of nonverbal cues and anonymity that are characteristic of these groups. The concepts of social presence and social impact offer insights into how to increase the salience of relationships in the absence of nonverbal cues. The concepts of *deindividuation* and *social loafing* suggest ways to promote the positive effects of anonymity and deal with its challenges.

Social Presence and Social Impact

Both social presence and social impact theory address the salience of the relationships in technology-based groups. *Salience* refers to the immediate importance of the relationship to the persons involved. Social presence—the degree of salience of another person in an interaction and the consequent salience of an interpersonal relationship—tends to be low in technology-based communication because of the absence of social context cues (Short, Williams, & Christie, 1976; Walther & Burgoon, 1992). Social impact—the changes in physiological states, feelings, and cognition in individuals that happen as a result of the presence or actions of others—may be lower in technology-based communications because relationship strength and immediacy are not as strong initially as in face-to-face communications (Latané, 1981). The reduction of social presence and social impact suggests that the development of relationship may be hindered in technology-based groups, and this can subsequently inhibit group development.

The negative effects of reduced social presence and social impact related to the lack of nonverbal cues can be overcome, however, to the extent that the individual changes behavior

to facilitate communication in a technology-based medium. Thus, individuals can learn to make explicit the content of responses that would be conveyed nonverbally in a face-to-face interaction. Furthermore, because nonverbal cues are absent, behavior such as failure to shake hands or smile has no meaning and does not have the negative implications that would be inevitable in a face-to-face group (Short et al., 1976). Research suggests that individuals using computer-mediated communication develop positive relationships that are just as strong as face-to-face relationships over time (Walther & Burgoon, 1992). In addition, despite the reduction of social impact in technology-based groups, cyberspace may take precedence over geographic space by bringing people who share common concerns and interests together over long distances (Latané & Todd, 1996).

Deindividuation and Social Loafing

The concepts of *deindividuation* and *social loafing* address the effects of anonymity in technology-based groups. Some degree of anonymity exists in all technology-based groups because members are not meeting face-to-face and because members can decide how much and what type of information to share about themselves. Anonymity can reduce inhibitions, which may be beneficial to the user, or it may result in negative behaviors. The effects of anonymity may lead to increased idea generation, less concern with social status and power, decreased conformity, and freer but more impersonal communication; conversely, it can lead to impulsive responses and more inflammatory remarks (Connolly, Jessup, & Valacich, 1990; Jessup, Connolly, & Tansik, 1990; Kiesler, Siegel, & McGuire, 1984; Mennecke, Hoffer, & Wynne, 1992; Siegel, Dubrovsky, Kiesler, & McGuire, 1986).

Deindividuation is a state where individuals are submerged in the group; they are not noticed and do not feel as though they stand out (Festinger, Pepitone, & Newcomb, 1952). This results in a reduction of inner restraints on behavior, enabling individuals to feel free to satisfy unmet needs and engage in behavior such as increased intimacy and playfulness that is gratifying but would normally be prohibited by

personal and social constraints. The likelihood of deindividuation increases with anonymity (Zimbardo, 1970). *Social loafing* is a related concept that refers to the potential of "free riders" in the group—members who want to share in the group's benefits without taking on the responsibilities of membership (Latané, Williams, & Harkins, 1979). This condition is associated with diffusion of responsibility, which can be related to conditions of anonymity.

Kiesler et al. (1984), Kiesler and Sproull (1992), and Siegel et al. (1986) suggested that the deindividuating effects of anonymity contribute to depersonalization, which invites more uninhibited communication; the pervasiveness of computer subculture norms, which disregard normal conventions of etiquette; and the lack of nominal public feedback, which fosters more equal and freer participation, but also more impersonal communication. Other studies on automated systems for group discussion and electronic brainstorming also find that members who interact anonymously tend to be less inhibited, more critical, more probing, and more creative in generating ideas than members of face-to-face groups (Connolly et al., 1990; Jessup et al., 1990; Valacich, Dennis, & Connolly, 1994).

The effects of anonymity can be mediated. Social loafing research is closely related to the study of social facilitation and recognizes that the presence of others can have an inhibiting as well as facilitating influence on performance. Loafing has been countered when participants believe their outputs can be monitored and compared to those of others (Harkins & Jackson, 1985; Roy, Gauvin, & Limayem, 1996; Williams, Harkins, & Latané, 1981). This suggests that people are motivated to work in groups when they can get feedback on their performance, whether or not they know the identities of other members.

Factors other than anonymity also have been found important to deindividuation. Diener (1979) demonstrated that group cohesiveness, group activity, and an outward focus of attention contribute to deindividuation because these conditions lower self-awareness. This suggests that anonymity per se may not result in the deindividuating circumstances that Kiesler and her colleagues (Kiesler et al., 1984; Kiesler

& Sproull, 1992; Siegel et al., 1986) have suggested. In fact, in a recent study they demonstrated that the processes that influence personal relations with individuals also influence personal relations with computers. Social behavior is triggered by situational cues that need not come from other people. In other words, people follow social rules when they interact with computers and respond socially in situations in which they are reminded of their own humanity (Kiesler, Sproull, & Waters, 1996). Thus, when members of technology-based groups develop a common stake in group outcomes and are involved in developing appropriate norms to govern their interactions, they can mediate the negative effects of anonymity.

Straus (1996) further demonstrated that the anonymity that leads to suppressed inhibitions is not what equalizes participation in computer-assisted groups. Her findings support reduction of production blocking as the key factor. *Production blocking* occurs in face-to-face groups as a result of group structure that requires taking turns or speaking and attending to the contributions of others (Valacich et al., 1994). In computer groups, participation is equalized because the individual need not wait for his or her turn to send a message and can attend to the messages of others when convenient. In telephone groups, turn taking is a necessity. This suggests that it is important to consider the type of technology used by groups in which members do not have face-to-face interaction.

Conceptual Framework for Technology-Based Groups

Although variations exist among telephone groups, computer-assisted groups, and other newer group forms such as voice-mail groups (Craig, 1997), the physical separation of members and technological dependence that characterize all technology-based groups create common conditions that change the nature of the group experience in contrast to face-to-face groups. Explanations of the impact of these conditions on the group's experience are grounded in open systems theory (Galinsky & Schopler, 1995) and social psychological theory. Open systems theory alerts us to the importance of considering differences at three system

levels: the individual, the group, and the environment. Social psychological research related to social impact, social presence, deindividuation, and social loafing explains why behavior at each of these system levels is different when physical separation and technological connections decrease social cues and create conditions of anonymity, and it also suggests ways to promote benefits and counter the negative effects of these conditions. Understanding the distinctive features of technology-based groups at each system level is critical for planning, intervention, and evaluation.

Distinctive Features of Technology-Based Groups

Individual Features. Technology-based groups offer members some degree of anonymity with all of the rewards and risks associated with anonymous communications (Bertcher, 1992; Evans & Jaureguy, 1982a; Grumet, 1979; Zimmerman, 1987). Anonymity may free participants to be more creative and expressive and may also release inhibitions that suppress destructive intimacy and interactions. The degree of anonymity can be varied because members may choose to share their identities and may have additional contacts with each other outside the group experience.

Members in telephone and computer groups must have access to the necessary technology and have the capacity to use it. Access can be limited by economic factors, and some evidence suggests that technological skills and comfort are distributed unevenly in the population, with a greater likelihood that white men will have greater experience than other population groups (Brennan et al., 1992; Kantrowitz, 1994; "Scholars Explore," 1997; Suggs, 1995; Williams, 1995). Some new users have been able to master the technology quickly; in other cases, technological demands may pose problems (Brennan et al., 1992; Weinberg et al., 1996; Wiener et al., 1993).

Because of the absence of nonverbal cues, members of technology-based groups can vary presentation of self to an extent that is not possible in face-to-face groups. Although this feature can lead to disruptive behavior, the opportunity to vary one's self-presentation tends to

be empowering. Members may be free to be more independent, to set their own pace, and to try out new roles (Finn & Lavitt, 1994; Kennard & Shilman, 1979; Patterson & Yaffe, 1994).

Group Features. Nonverbal behavior is not apparent in technology-based groups; thus social cues are less distinct than in face-to-face groups. In telephone groups there are only auditory verbal cues; in computer groups there are only written verbal cues. Because social cues are less distinct, it may be difficult to assess and interpret the moods, cognitions, and responses of members. Furthermore, problems may occur if members misinterpret communication or, in the case of telephone groups, if members have difficulty hearing (Kennard & Shilman, 1979; Rittner & Hammons, 1992; Rounds et al., 1991; Shilman & Giladi, 1985).

A number of authors have discussed the reduction of status and role differences in telephone and computer groups (Evans et al., 1984; Finn & Lavitt, 1994; Grumet, 1979; Thomas & Urbano, 1993). The decreased perception of differences among members tends to equalize the power and communication structure in these groups. Greater equality is associated with more equal participation, less domination by one person, and a greater focus on ideas rather than the social context.

Social norms governing interaction are less salient under conditions of anonymity. This effect appears to be particularly true in computer groups, in which the norms of the computer subculture can result in fewer inhibitions and more impulsivity in responses (Kiesler et al., 1984). Salience can be increased, however, when members are reminded of the social nature of their interaction.

Communication patterns are affected by the lack of face-to-face contact and technological dependence (Brennan et al., 1992; Kiesler et al., 1984). The pace of communication over the phone and computer is slower. Interacting over the phone requires speaking sequentially with no shorthand responses such as a nod of acquiescence. Responses to messages posted on computer bulletin boards may involve time gaps of many days. When members communicate over the phone or on the screen, however,