Addressing College Drinking through Curriculum Infusion: A Study of the Use of Experience-Based Learning in the Communication Classroom

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This study examined whether the use of a norms-based simulation in a communication class can influence students’ misperceptions about college drinking. Participants (N = 462) were enrolled in two undergraduate communication courses: one in which the simulation was used and another that served as a control. Results indicated that participating in the simulation resulted in a decrease in beliefs about college drinking myths; moreover, students’ perceptions of social drinking norms were related to their actual drinking behaviors. Findings indicated that the campus atmosphere and social networks promoted alcohol consumption. Results support using a norms-based simulation to provide information about dangerous drinking behaviors while at the same time teaching relevant communication principles.

Keywords: College Drinking; Curriculum Infusion; Socially Situated Experiential Learning; Social Norms

Contemporary college life is often linked with images of excessive consumption of alcohol. For example, when many adults talk about their college experiences, their stories revolve around tales of extreme alcohol use. College students tend to exaggerate their own drinking behaviors as well as overestimate those of their peers (Borsari & Carey, 2001; Clapp & McDonnell, 2000; Kypri & Langley, 2003;...
Lederman & Stewart, 2005). This exaggeration becomes dangerous particularly since myths about college drinking norms often breed risky drinking behaviors. Evidence suggests that students who misjudge their peers’ drinking habits drink at higher levels than students who hold accurate perceptions of college drinking norms (Borsari & Carey, 2001; Korcuska & Thombs, 2003; Kypri & Langley, 2003; Lederman, 1993, Lederman & Stewart, 1998, 2005; Trockel, Williams, & Reis, 2003). Moreover, excessive drinking has negative consequences for drinkers and those around them (White & Labouvie, 1989).

Given the negative consequences of excessive drinking for both drinkers and their peers, educators and college health professionals have become increasingly concerned with reducing the incidence of dangerous drinking. One way to reduce excessive drinking is to address the misperceptions of college drinking through health campaigns that provide information about the actual social norms related to students’ drinking attitudes and behaviors (Haines, 1993, 1996; Jeffrey & Negro, 1996; Perkins, 2003). Related to this issue are injunctive norms, or behaviors perceived as being socially acceptable, and descriptive norms, or perceptions of how others are behaving regardless of whether or not those behaviors are deemed socially acceptable. As such, beliefs about peer drinking behaviors or descriptive norms may not be as important in influencing students’ drinking as the perceived pressure to conform to these apparent injunctive norms (Rimal & Real, 2003). Consequently, student exposure to what others actually think about their behavior may be essential to their decision to change.

Burns and Goodstadt (1989) found that media campaigns alone often fail to get students to personalize messages about their alcohol consumption. Rather, experience-based activities, such as drinking-related simulations and games which allow students to examine their own behavior and other students’ perceptions of it, are now part of the campaigns conducted on many campuses. Many of these activities are conducted in residence halls and led by health educators or peer facilitators. Although these activities are certainly worthwhile, it is clear that more can be done inside classrooms to provide students with the cognitive and behavioral skills needed to incorporate health-related information into their living experiences.

Curriculum infusion is an educational approach that brings together classroom learning and life experience (Lederman, Stewart, Barr, & Perry, 2001). Important social issues are woven into the academic content of a course (Jones & Sanford, 2003) to enhance the learning environment for students (Aber, Brown, & Jones, 2003). For example, if awareness of the consequences of excessive alcohol use is the social issue of concern, students in a biology class who are learning about metabolic processes might discuss examples that focus on the metabolism of alcohol. An instructor in a creative writing course teaching narrative structure could ask students to write a short story about their experiences with alcohol. Beyond adding richness and context to conceptual classroom learning, curriculum infusion provides opportunities for students to examine and reflect on their own attitudes and behaviors vis-à-vis compelling and relevant social and health issues. Similarly, in a communication course, curriculum infusion becomes a pedagogical strategy that uses the classroom
as a context in which to guide students. A teacher in a communication course could encourage students to examine their own attitudes and behaviors in relation to a significant social issue; at the same time, relevant course content, such as social influence, interpersonal relationships, or messages and meanings could be taught.

College drinking is a topic that most students have a wealth of information (and misinformation) about but may not have developed the intellectual tools to examine the accuracy of what they think they know. Perkins (2002a, 2002b) has called for a more extensive use of curriculum infusion of alcohol-related topics especially in first-year general education courses, sociology, psychology, ethics, or philosophy courses. Given that successful educational campaigns outside the classroom rely on sound communication principles and interpersonal skills and interactions, courses in communication (e.g., Interpersonal Communication, Mass Media and Communication, Communication and Gender, Health Communication, and Communication Research) would also provide a natural context in which to address alcohol-related issues inside the classroom. These courses are particularly robust sites for curriculum infusion concerning dangerous drinking because of student interest and relevance of the topic to the course content (e.g., perception, messages, and meanings).

Curriculum infusion strategies include the use of relevant examples in a lecture format, behavioral skills practice, and focused discussions. Involving students in activities is particularly effective for linking course context to social issues. The use of simulations is one way of engaging students. Experienced-based simulations have been used successfully by health educators in their efforts to debunk myths about college drinking (Lederman & Stewart, 2005); thus, we might expect simulations to be similarly useful as an infusion technique. Two simulations, RU SURE (Lederman, Powell, Stewart, Goodhart, & Laitman, 2001) and IMAGINE THAT! (Lederman, 1991) were designed to promote healthy behaviors concerning alcohol use among college students. These simulations have been used in more than 375 institutions of higher education in activities outside the classroom. Used within a classroom, these activities could increase and enhance students’ awareness of alcohol-related issues while also helping them to improve their communication skills and understanding of communication theories.

Both IMAGINE THAT! and RU SURE are simulations of drinking-related decision making that occur in response to scenarios that have been designed to be typical of situations faced by college students. All scenarios for the simulated experiences were based on extensive data collection and field testing among college students in relation to actual experiences with and decisions about alcohol use. The field-testing of the RU SURE simulation was used to confirm its validity and reliability (Lederman & Ruben, 1984) in terms of creating predictable drinking-related circumstances and predictable outcomes. Most students who participate in the simulation do not make choices that involve drinking excessively; nor do most students in their daily lives make choices that involve excessive use of alcohol. The simulation activity involves both participation in decision-making within the simulation and a post hoc discussion or debriefing after the simulation. During the debriefing, students’ observations regarding the behavior of themselves and others become the data upon
which to debunk the drinking myths. Such myths include “everyone in college drinks a lot,” “partying means drinking to excess,” or “in order to fit in, one has to drink excessively” (Lederman & Stewart, 2005).

The conceptual framework behind the design of the simulation (Lederman & Stewart, 2005) is socially situated experiential learning. From this perspective, it is believed that students learn to drink through their interactive experiences with others. This SSEL conceptual model argues that the culture of college drinking is influenced by students’ drinking experiences, perceptions, and attitudes which are situated within the context of the larger community of faculty, administrators, friends, peers, parents, media, and even laws. Experiences within this community both create and reinforce students’ behaviors and subsequent interactions. The RU SURE simulation was born out of this model to help students learn what others actually do and how others perceive their behavior. This experience, in turn, allows the participants to examine and reflect upon their own choices in the context of the choices they see others make. The simulation is followed by a debriefing or guided reflection phase (Lederman, 1992; Stewart, 1992). RU SURE is the simulation used for the curriculum infusion study reported here.

To date, research has failed to examine whether a simulation, such as RU SURE, that is incorporated into a classroom learning experience can successfully change students’ misperceptions about their peers’ drinking behaviors. Thus, the purpose of this study is to ask that question. The false perceptions that permeate the culture of college drinking will be discussed as background information about the conceptual framework that the simulation was designed to model. Next, the perpetuation of these myths is examined, as well as the mix of realities with myths about drinking on campus and efforts to debunk these myths. Finally, a more detailed description of the pedagogical value of experiential simulations is provided.

College Drinking Myths

As noted previously, myths about exaggerated drinking behaviors pervade college campuses (Berkowitz, 2005; Lederman & Stewart, 2005; Perkins, 1997, 2002a, 2002b, 2003; Perkins & Berkowitz, 1986). While dangerous college drinking behaviors exist, students’ perceptions about drinking and actual college drinking behavior differ dramatically. College students tend to inflate how much and how often their peers drink. When asked to compare their drinking behaviors to their peers, 73.8% of students in one study perceived that they drank less often and had fewer drinks in one sitting than their peers (Lederman & Stewart, 1998, 2005). The American College Health Association (2004) found that college students overestimated drinking behaviors of female students by 17% and male students by 19%.

Because of exaggerated social drinking norms, college students who drink dangerously may not recognize their behaviors as problematic. A student’s choice to drink, sometimes dangerously, may be fueled by inflated perceptions of peer alcohol consumption. This faulty logic assumes that, regardless of how much a student drinks, another student is likely to drink more (Berkowitz & Perkins, 1986;
Haines & Spear, 1996; Lederman, 1993; Lederman & Stewart, 2005; Lederman, Stewart, et al., 2001; Perkins, 1997; Stewart et al., 2002). These misperceptions are reflective of a psychological phenomenon called pluralistic ignorance (Miller & McFarland, 1987, 1991). Berkowitz (2005) describes this as the process whereby “individuals incorrectly perceive the attitudes and/or behaviors of peers and other community members to be different from their own when, in fact, they are not” (p. 188). Such misperceptions prompt individuals to modify their own behaviors to approximate the misperceived norm. These modifications, consequently, “cause the expression or rationalization of problem behavior and the inhibition or suppression of healthy behavior” (p. 188). College students demonstrate pluralistic ignorance by inflating drinking patterns of their peers and subsequently modifying their own drinking choices to reflect exaggerated perceptions. Such overestimation results in most moderate or light drinkers consuming more than they would otherwise and may also encourage nonusers to begin drinking. Heavy alcohol users are even more likely than other students to believe in this misperception and use it to justify their heavy drinking (Berkowitz, p. 188).

The latter situation refers to a phenomenon called false consensus whereby individuals believe that they are similar to others when, in reality, they are not (Miller & McFarland, 1987, 1991). Because of false consensus or the belief that their peers are engaging in the same behavior, nondrinkers feel socially pressured to drink. To this end, heavy drinkers feel socially validated to continue their dangerous drinking habits because they believe their peers are drinking more than they actually are. Mutually reinforcing and self-perpetuating, false consensus and pluralistic ignorance pervade college environments, skewing students’ perceptions of social reality. As Berkowitz (2005) observes, “The majority is silent because it thinks it is a minority, and the minority is vocal because it believes that it represents the majority” (p. 188).

Perpetuation of College Drinking Myths

The college culture actively perpetuates pluralistic ignorance and false consensus, reinforcing the myth that alcohol plays a critical role in every student’s life (Burns & Goodstadt, 1989; Burns & Klawunn, 1997; Cohen & Lederman, 1998; Lederman, 1993; Lederman et al., 2000; Lederman & Stewart, 1998, 2005; Stewart et al., 2002). College students report a strong belief that campus environments promote alcohol consumption (Clapp & McDonnell, 2000; Kypri & Langley, 2003; Lederman & Stewart, 2005; Lederman, Stewart, Kennedy, Powell, & Goodhart, 1998). For example, Lederman et al. (1998) found that the majority of students believed that faculty members reinforce the assumption that college students drink excessively. Media advertisements, college bars, and campus parties also foster a culture of college drinking. However, those most responsible for perpetuating myths about dangerous drinking are college students themselves. Even if students do not excessively consume alcohol, they act as if they do (e.g., bragging about how much alcohol they can handle
and telling “war stories” about the night before) (Lederman, 1993; Lederman & Stewart, 1998, 2005; Perkins & Wechsler, 1996; Stewart et al., 2002). While students are simply trying to fit in to the culture as they perceive it, they exacerbate misperceptions about the normality, acceptability, and safety of dangerous drinking behaviors.

Reinforcing misperceptions that extreme alcohol use is acceptable and normative “creates pressures on students to live up to what they believe is the standard by drinking dangerously” (Lederman et al., 2001, p. 252). This propagation is referred to as the culture of college drinking whereby “students learn about drinking by the images they receive from the media and by the talk that goes on among them about their own behaviors and their perceptions of the behaviors of others” (Lederman et al., 2001, p. 259). Built on perceived social norms, both true and false, excessive drinking has become a hallmark of the college years for many students. Through overt and covert endorsements, drinking is perceived as a rite of passage for college students when campuses foster a drink 'til you drop mentality. These shared misperceptions have led students, faculty, parents, and alumni to believe that college is a place where dangerous drinking is the norm, and abstinence is the exception.

Myths and Realities of College Drinking Norms Mix

Paradoxically, although myths support the misperceptions of college drinking norms, college environments are sites of high levels of alcohol usage. Together, the myths and facts about drinking norms lead to very real and dangerous problems for college campuses. College students engage in higher rates of alcohol consumption than their same-age counterparts who are not in college (O’Malley & Johnston, 2002). Four in five college students drink, while some studies find that as many as two in five “binge” drink, consuming five or more drinks in one sitting for males and four or more for females (O’Malley & Johnston, 2002; Wechsler, Lee, Kuo, et al., 2002). Nationally, approximately one-third of first-year students drop out of college. This phenomenon is due, in part, to excessive drinking during the early stage of some students’ college life (NIAAA, 2002; Perkins, 2002a, 2002b). Even studies finding lower rates of dangerous drinking (Jeffrey & Negro, 2005; Lederman & Stewart, 1998) report that one in three students drink dangerously, a higher number than the noncollege population.

College students who engage in dangerous drinking behaviors place themselves at risk for a variety of negative consequences that impose long-term effects on their physical and psychological well-being, including fatal and nonfatal injuries, poor academic performance, violence and other crime, unplanned and unprotected sex, and sexually transmitted diseases including HIV/AIDS (Goldman, 2002; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; Perkins, 2002a, 2002b; Wechsler, Lee, Kuo, et al., 2002). Evidence shows that students who drink dangerously also cause secondhand effects for their peers and local communities including physical and sexual assaults, vandalism, the need to be taken care of by others, insults and humiliation, and preventing others from studying and sleeping (Hingson et al.,
Recognizing these negative signs, more than half of college administrators in one study reported that student drinking is a problem on their campuses (Wechsler, Seibring, Liu, & Ahl, 2004).

Debunking College Drinking Myths

Representing a very real problem, dangerous drinking behaviors are caused, in part, by overestimations of college drinking norms. Thus, a possible way to decreasing excessive drinking behaviors for individuals is by disseminating accurate information about actual drinking norms, thus debunking college drinking myths.

Although widely used, the impact of norms-based interventions, such as media campaigns, has been illustrated by only a handful of studies that offer diverse and, at times, contradictory findings (Campos, Brossard, Frazer, Marchell, Lewis, & Talbot, 2003; Glider, Midyett, Mills-Novoa, Johannessen, & Collins, 2001; Gomberg, Schneider, & DeJong, 2001; Haines & Spear, 1996; Kypri & Langley, 2003; Liacciardone, 2003; Neighbors, Larimer, & Lewis, 2004; Perkins, 2003; Swanson, Zegers, & Zwaska, 2004; Wechsler, Nelson, Lee, Seibring, Lewis, & Keeling, 2003; Werch, Pappas, Carlson, DiClemente, Chally, & Sinder, 2000). No known studies have utilized an experienced-based learning activity or simulation to affect students’ misperceptions. This study seeks to fill that gap by measuring whether a norms-based simulation successfully changes students’ overestimations of college drinking norms. This simulation is “focused on narrowing the discrepancy between true drinking habits and the distorted view of reality that is pervasive among college students” (Lederman et al., 2001, p. 251). By revealing the actual, healthier norm, this intervention is designed to curtail students’ inclinations to drink to a level that matches their inflated perceptions of typical college drinking behaviors.

Experiential Learning Simulations

Bringing about behavioral change is a complicated process that usually is not achieved by the mere presentation of information. Experienced-based learning activities like simulations have the potential to capture the complex social dynamics, myths, and decisions that accompany everyday behaviors including dangerous drinking (Lederman & Ruben, 1978; Lederman, 1991, 1992; Lederman & Stewart, 2001, 2005; Ruben & Lederman, 1982; Lederman & Ruben, 1984). As robust and dynamic teaching tools, simulations hold great promise for persuading college students to question their drinking choices as well as confront the drinking behaviors of their peers.

Compared to traditional lecture methods, simulations have been shown to enhance the affective, cognitive, and behavioral dimensions of learning (Bredemeier & Greenblat, 1981; Garard, Hunt, Lippert, & Paynton, 1998; Garside, 1996; Lederman, 1991, 1992; Pintrich & Schrauben, 1992; Pugsley & Clayton, 2003; Randel, Morris, Wetzel, & Whitehill, 1992). Unlike lectures, simulations engage
students intellectually, emotionally, and kinesthetically. As working models of reality, they enable participants to uncover how individuals really behave in difficult situations, often disproving exaggerated misperceptions of social norms.

In simulations, learning is self-directed; learners discover for themselves and decide when, why, where, how, and whether to apply the learning. Simulations offer participants a self-reflexive opportunity to look inward and assess their behaviors. Simulations also offer a valuable opportunity to learn from others through conversations and observations of peers’ real-life behaviors. In these ways, students become their own teachers. The course instructor acts as a facilitator who coordinates the logistics of the simulation and reinforces the learning by debriefing participants about their experience. Debriefing discussions focus on what students felt, to what extent the simulation reflects real situations, and how students might implement what they discovered in their own lives (Lederman, 1992). Simulations, thus, allow individuals to critically examine their behaviors and make the personal changes they deem necessary.

Research Questions

Built on perceived social norms, both true and false, excessive drinking has become part of the college years for many students. This investigation fills a void in the current literature by assessing whether the infusion of a norms-based simulation in a communication classroom effectively changes students’ misperceptions about college drinking. This investigation addresses the following research questions:

RQ1: Do students believe that their school’s social atmosphere promotes alcohol consumption?
RQ2: Do students believe that others in their social networks advocate alcohol consumption?
RQ3: Are students’ drinking behaviors related to their perceptions of college drinking norms?
RQ4: Does participation in a norms-based simulation successfully change students’ misperceptions about college drinking norms?

Method

Participants

Participants (N = 462) were students enrolled in two undergraduate communication classes at a large Northeastern university. Both courses are required for all communication majors. Even though the courses are taught by different instructors, the course content is carefully monitored by the department faculty to assure uniform delivery each semester. Although it was not possible to split each class into a treatment and control group, and randomly assign students to one of the two conditions, which would have been ideal, the demographic profile of the students in each class was similar. Table 1 provides a demographic profile of the sample for each
In overview, students were predominately sophomores and juniors. Although class year was unevenly distributed across the treatment and control conditions, the distribution of males and females and race/ethnicity in both classes were virtually identical. Students were given minimal course credit for participation. In one class, the simulation was infused into the curriculum (n/C30 133). In another, the control condition, it was not (n/C30 329). (The number of participants was determined, in part, by absences from class and room size.) The course content and discussion supported the use of the simulation in the class into which it was infused.

Measurements

A series of measures was used to provide background about participants’ perceptions of college drinking norms as well as to measure the efficacy of the RU SURE simulation in correcting myths about college drinking behaviors. For all of the following scales, an alcoholic drink/beverage was defined as: “a bottle of beer, a glass of wine, a wine cooler, a shot glass of liquor, or a mixed drink.” First, a one-item Likert-type scale (1 = Very Strongly Disagree; 7 = Very Strongly Agree) was used to assess students’ perceptions of their school’s culture of college drinking, asking them to report the degree to which they felt that the social atmosphere on their campus promoted alcohol use. Next, a two-item Likert-type scale was employed (1 = Very Strongly Disapprove; 7 = Very Strongly Approve) to assess the degree to which students felt that their close friends would approve of them: (a) having one or two drinks of an alcoholic beverage occasionally; and (b) having five or more drinks of an alcoholic beverage in one occasion. Third, an open-ended question asked students to record the number of alcoholic drinks they had the last time they consumed alcohol. Fourth,

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a set of two open-ended questions asked students to estimate the percentage of students that they believed abstained from alcoholic drinks as well as the percentage that they believed consumed “five or more drinks in a row on a least one occasion in the last two weeks.” Fifth, a one-item Likert-type scale (1 = Never; 8 = Every Day) asked students to report the frequency that students in general typically consumed alcohol. Finally, a three-item Likert-type scale (1 = 1 Drink; 15+ = 15 or More Drinks) asked students to report the number of alcoholic drinks they thought the following groups typically consumed at parties and bars: (a) students in general; (b) males; and (c) females.

All of the measures used in this study were extracted from the Personal Report of Student Perceptions (PRSP) scale (Lederman et al., 1998). The validity of the PRSP has been field-tested with college student populations to assess their drinking behaviors and misperceptions of college drinking norms. Further, the PRSP has been used in part and in its entirety in a number of previous investigations. Lederman and Stewart (2005) provide a complete description of the instrument’s development and a review of recent studies employing the measure.

Procedure

In the treatment condition, students participated in the RU SURE simulation of drinking-related decisions (Lederman, Powell, et al., 2001). RU SURE is a 1-hour simulation designed to change students’ misperceptions about college drinking norms. The simulation was infused into an introductory-level communication theory course in which relevant communication phenomena (e.g., perception and interpretation) were being discussed. This material was presented in an interactive and experiential manner. The activity simulated a night out and asked students to make candid choices while immersed in a variety of drinking-related scenarios. The objectives of the simulation were:

1. to allow participants to make choices concerning familiar alcohol-related situations that they may encounter;
2. to provide participants with an experience that enables them to learn about themselves and the choices that they make;
3. to discuss choices and explain those related to alcohol;
4. to allow players to compare their own choices as well as the choices that others make; and
5. to compare players’ choices in terms of drinking-related perceptions and behaviors to actual campus norms. (Lederman & Stewart, 2005, p. 144)

When making their choices during the simulation, students were encouraged to be as authentic as possible, responding to the scenarios as if they were actually occurring in real time and real life. Every time students made a choice, they earned a color-coded chip. Students listened to a scenario and decided how they would behave. After making their decision, they were divided into groups based on their choices and given the opportunity to discuss their decisions and explain them to the other groups. They were then asked to make their decision again before moving on to the next scenario. A typical scenario in the simulation was:
It is a Thursday night. You are at a party on campus and the only drink available is a large bucket of punch. You don’t know who made the punch, what is in it, or the alcohol content. Do you: (A) ask the host who made the punch, how much alcohol is in it, and proceed with caution; (B) dive in, you came to party; or (C) stay away from the punch and wait until some friends arrive who you think will bring beer and sodas.

At the end of the simulation, students learned the point values attached to each of their color-coded chips. Then they used a score sheet to analyze the degree of danger associated with their alcohol-related choices. The participants were then debriefed and asked about the choices they made and what they learned from their behaviors and observing others.

The simulation was designed for learning to occur through both self-reflection and observation. Self-reflexively, students assessed how they thought they would react and how they actually acted. Further, they assessed how they thought their peers would react, and then were either validated by, or surprised at, how they actually reacted. Through observational learning, students saw with their own eyes the actual drinking behaviors and norms of their peers.

Previous studies (cf., Lederman & Stewart, 2005) have found that this simulation exhibits strong fidelity and face validity among undergraduate students. Based on the simulation’s utility, power, and scope, the tool has been used widely by colleges and universities throughout the U.S. and Canada as a prevention tool.

In the control condition, students participated in regular classroom activities (primarily lectures) and received no simulation exercises. One month after conducting the simulation for the treatment group, students in both the treatment and control conditions completed the PRSP to measure any differences between the groups in their perceptions about college drinking norms. Post-test questions were also designed to assess drinking behavior. Waiting 1 month to make these assessments allowed for a relatively rigorous test of the lasting effects of participating in the simulation.

Data Analysis

In order to answer each research question, a number of tests were conducted. First, t tests were computed to reveal potential differences between the perceptions of students in the control versus treatment groups regarding the extent to which they felt their school’s social atmosphere and their own social networks promoted alcohol consumption. Second, correlation analysis was conducted to determine whether or not there was a relationship between students’ estimates of college drinking norms (percentage of students who abstained or drank) and their most recent level of alcohol consumption. Finally, t tests were computed for posttest scores for the control and treatment groups in order to determine if the simulation successfully (and significantly) affected students’ misperceptions regarding exaggerated college drinking norms.
Results

Culture of College Drinking (RQ1 and RQ2)

RQ1 and RQ2 examined the pervasiveness of the culture of college drinking as perceived by students in the control and treatment groups. When asked to report whether the social atmosphere on their campus promoted alcohol consumption using a Likert-type scale (1 = Very Strongly Disagree; 7 = Very Strongly Agree), students in the control and treatment groups had virtually identical mean scores: control group (M = 4.42; SD = 1.32); treatment group (M = 4.47; SD = 1.49). A t test revealed that the slight difference between the groups’ scores was not statistically significant: MD = −.05, t(459) = −.38, p < .71. This finding provides preliminary evidence that both groups were equivalent in their relatively strong perceptions regarding the social promotion of alcohol consumption on their school’s campus.

Next, responding to a Likert-type scale (1 = Very Strongly Disapprove; 7 = Very Strongly Approve), students in both conditions indicated that they felt that others in their social networks advocated alcohol consumption, claiming that most of their close friends would approve of them having one or two alcoholic drinks (beer, wine, liquor) occasionally: control group (M = 4.99; SD = 1.32); treatment group (M = 5.39; SD = 1.23). However, a t test revealed a significant difference between the groups: MD = −.40, t(459) = −3.01, p < .00. Students in the treatment group reported significantly higher scores than those in the control group regarding how accepting their close friends would be of them having one or two drinks occasionally. This finding suggests that students in the treatment group might have individuals within their social networks who are more approving of occasional alcohol consumption.

In a similar vein, when responding to another Likert-type scale (1 = Very Strongly Disapprove; 7 = Very Strongly Approve), students in both conditions believed that most of their friends would be neutral if they were to consume five or more drinks in one sitting: control group (M = 3.94; SD = 1.69); treatment group (M = 4.24; SD = 1.94). A t test revealed no significant difference between these groups: MD = −.30, t(459) = −1.56, p < .12. This provides some substantiating evidence that both groups were equivalent in their perceptions regarding their social network’s acceptance of dangerous drinking behaviors (i.e., operationally defined as consuming five or more alcoholic beverages on one occasion).

Perceived Drinking Norms and Behaviors (RQ3)

RQ3 asked if students’ drinking behaviors are related to their perceptions of college drinking norms. As this question was not intended to illustrate the differences between the control and treatment groups, data from both populations were collapsed. Students from both conditions had perceptions of college drinking norms that were significantly correlated with their actual drinking behaviors. There was a negative correlation between students’ perceptions of alcohol abstinence and the number of drinks that they most recently consumed (r = −.110, p = .019). In other
words, students reporting a higher percentage of peers abstaining from drinking had recently consumed a smaller number of drinks. Conversely, a positive correlation was observed between students’ perceptions of dangerous drinking behaviors and the number of drinks that they had most recently consumed ($r = .223$, $p < .001$). That is, students who perceived a higher percentage of dangerous drinking among peers had recently consumed a greater number of drinks.

Correcting Misperceptions of Drinking Norms (RQ4)

RQ4 asked if students’ participation in a norms-based simulation successfully changed their misperceptions about college drinking norms. To answer this question, students were first asked how often they believed their peers typically consumed alcohol (including beer, wine, wine coolers, liquor, and mixed drinks) using a Likert-type scale (1 = Never; 8 = Every Day). Students in the treatment group ($M = 4.92$, $SD = .97$) believed that the college population drank less often than students in the control group ($M = 5.18$, $SD = .93$). A $t$ test revealed a significant difference between these conditions, $MD = -.26$, $t(457) = 2.67$, $p < .01$.

Second, participants were asked via an open-ended question to estimate the percentage of students enrolled at their university who consumed no alcohol. Students in the treatment group ($M = 30.22\%$, $SD = 16.82$) believed a higher percentage of students abstained from alcohol consumption than students in the control group ($M = 22.70\%$, $SD = 17.68$). A $t$ test revealed a significant difference between these conditions, $MD = -7.52$, $t(457) = -4.18$, $p < .00$.

Third, another open-ended question asked students to estimate the percentage of students who consumed five or more drinks in a row on at least one occasion in the last 2 weeks. Students in the treatment group ($M = 45.61\%$, $SD = 23.79$) believed that a lower percentage of students drank dangerously than students in the control group ($M = 56.56\%$, $SD = 22.65$). A $t$ test revealed a significant difference between these conditions, $MD = 10.96$, $t(457) = 4.62$, $p < .00$.

Fourth, using a three-item Likert-type scale (1 = 1 Drink; 15+ = 15 or More Drinks), participants estimated the number of alcoholic drinks, on average, that various groups of students typically consumed at parties and bars. Students in the treatment group ($M = 5.08$, $SD = 1.91$) believed that students in general drank less often at parties than students in the control group ($M = 5.66$, $SD = 1.91$). A $t$ test revealed a significant difference between these conditions, $MD = .58$, $t(450) = 2.88$, $p < .00$. Further, students in the treatment group ($M = 6.51$, $SD = 2.40$) believed males drank less than the students in the control group ($M = 7.21$, $SD = 2.47$). A $t$ test revealed a significant difference between these conditions, $MD = .70$, $t(448) = 2.72$, $p < .01$. However, there was no significant difference in perceptions regarding the amount females drank at parties and bars between students in the treatment group ($M = 4.52$, $SD = 1.76$) versus those in the control group ($M = 4.86$, $SD = 1.79$) as revealed by a $t$ test, $MD = .34$, $t(452) = 1.83$, $p < .07$. In response to RQ4, then, these results indicate that overall, the simulation exercise successfully changed students’ misperceptions of college drinking by aligning those beliefs with
the actual norms on campus. Or, more succinctly, the treatment was successful at debunking college drinking myths.

Discussion

Responses from both the treatment and control conditions confirmed that students perceive that their college campus atmosphere promotes alcohol consumption, despite the fact that the campus is not known otherwise as a party school. Students also reported that they felt that their social networks advocate alcohol consumption. These findings are consistent with previous research regarding the linkage between the college culture and drinking norms (Kypri & Langley, 2003; Workman, 2005). Results also verified the link between students’ perceptions of social drinking norms and their actual drinking behaviors. Students who overestimated others’ drinking behaviors consumed alcohol at higher levels than students who held accurate assessments of their college’s drinking norms. This finding also is consistent with previous research (Korcuska & Thombs, 2003; Trockel, Williams & Reis, 2003).

RQ1 asked if students believed that their school’s social atmosphere promoted alcohol consumption. Results of this study indicated that this perception continues to be pervasive among students. According to the SSEL model, this belief is reinforced by the media, student interactions, and even faculty.

Students generally believed that others in their social networks advocate alcohol consumption (RQ2). For example, they reported that their close friends would approve of them having one or two drinks occasionally. Of more concern is that the fact that they also believe that their friends would not disapprove of them having five more drinks in one sitting (i.e., the accepted operational definition of heavy episodic drinking for men).

Students’ drinking behaviors are also related to their perceptions of drinking norms (RQ3). Students who perceived that a greater percentage of their peers drink dangerously reported higher levels of their own alcohol consumption while those who reported a higher percentage of their friends do not drink themselves drank less.

RQ4 asked whether participation in norms-based simulation successfully changed students’ misperceptions about college drinking norms. Findings indicated that participation in the simulation resulted in a significant decrease in college drinking myths 1 month after the simulation. Unlike the control group, students who had participated in the simulation held more accurate perceptions of peers’ drinking behaviors. Participants who had engaged in the simulation (as opposed to the control group) were able to correctly estimate that a higher percentage of students abstain from alcohol, a lower percentage of students drink dangerously (drinking five or more drinks in a row), and students typically consume a lower number of drinks at parties and bars. Participants in the simulation were also able to accurately judge the amount that males typically consume at parties and bars. This subject is often fodder for college myths as males’ drinking behaviors are typically exaggerated and overestimated (Lederman & Stewart, 2005).
Given the desire to study this simulation in an actual college environment, a number of limitations should be noted. Given logistical concerns, it was not possible to randomly assign students to the treatment and control conditions. The only way to have enough participants to make meaningful comparisons was to use classes taught by different instructors. Nevertheless, the class in which the curriculum infusion occurred was matched as closely as possible to the control class/condition. Although the demographics of the students in each condition were similar in race/ethnicity and sex, the fact that the classes were taught by different instructors might have influenced students’ perceptions in unforeseen ways. Further research that includes random assignment of students and instructors is needed to test this assumption.

In addition, this study is limited by the lack of a pretest for each condition. Given the limitations of the number of times the researchers could enter these classrooms, it was not possible to administer a pretest. Absent a pretest, we cannot be certain that the groups were equivalent and that the effects obtained were due solely to the simulation. Research in real communication classrooms needs to take into account both the educational requirements of the class and the sophistication of the research design.

**Implications for the Classroom**

These results support the idea of infusing a simulation into a communication course to provide learning about alcohol use while at the same time teaching relevant course content. In this study, the course content focused on perceptions and interpretations. Using a simulation of drinking-related behaviors as an activity in this class gave students time to reflect on their own perceptions of college drinking. At the same time, it provided a relevant and meaningful way for them to have a first-hand experience with their own ways of perceiving and interpreting communication phenomena vis-à-vis a compelling and relevant issue. Furthermore, previous studies (Lederman & Stewart, 2005; Perkins, 2002a, 2002b) have indicated that students often (mistakenly) perceive that faculty encourage dangerous drinking on campus by their references to drinking (e.g., “I know it’s hard to get up for a class on Friday mornings”). A curriculum infusion approach positions faculty differently in relation to the subject. It allows faculty to guide students in the development of their own decision-making skills. The pedagogical strategy shows students how to take the information and experiences provided to them in a course and apply them to their lives. Thus, including health-related information such as a simulation of alcohol-related decision-making is a powerful way to remind students that the theories they study in class are relevant to the lives they live outside the classroom.

**References**


Received March 25, 2007
Accepted June 24, 2007
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