An Innovative Dialogue about College Drinking: Developing an Immediate Response Technology Model for Health Promotion

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Abstract:

New communication technologies, including personal response ''clickers,'' have become increasingly popular across college campuses as a way to promote a wide range of practices. This paper calls attention to the need for communication models that account for the usefulness of these new technologies, especially as they relate to health promotion, dialogue, and the (re)construction of social norms. Based on observational data from a health promotion simulation game, the authors developed an Immediate Response Technology Model. The model describes the usefulness of new communication technologies in promoting the dialogue and reflexivity necessary to co-construct health-related norms and practices.

Keywords: Dialogue; Technology; Health Promotion; Simulation Gaming

Article:

> I started reading Scenario Three out loud to the class. This scenario dealt with a friend named Jane and her desire to go home with a guy from the party. Before I had a chance read the first option, one student punched in an answer on his/her personal response clicker. I stopped the question, looked at the class, and said with a little sass in my voice, "now, don't answer yet.'' They all laughed. This is when I knew that everything was going to be okay. They seemed really engaged—enough so to jump ahead and submit their answers before I'd finished reading all of the options. (from the first author's Field Notes)

The development of new communication technologies, such as the personal response "clickers" from the preceding example, present scholars with a unique set of challenges and opportunities. For those interested in health promotion, in particular, these technologies enable more sophisticated dialogue about health and safety issues, reflexive interaction by health consumers, and the constitution of collective norms by participants and practitioners. As such, the increasing prevalence of the personal, immediate response clickers across a variety of contexts might incite the imaginations of individuals who design health programs.

This essay calls attention to the need for communication models that account for the usefulness of new technologies, especially as they relate to health promotion, dialogue, and the (re)construction of social norms. More specifically, we recount the experiences of students as they participated in the health promotion program LET'S TALK ABOUT IT (Lederman, Stewart, Greenberg, Bates, LeGreco & Schuwerk, 2007). This program is a simulation game that engages participants about decision making and drinking on a college campus. As one sub-set of a larger research team, we used Lederman & Stewart's (2005) Socially Situated Experiential Learning (SSEL) construct to observe students participating in a health promotion program that relied on new communication technologies.

[1]As a conceptual representation of observations from these simulations, we developed an Immediate Response Technology Model (IRT) to describe the usefulness of new communication technologies in promoting the dialogue and reflexivity necessary to co-construct health-related norms and practices. This model offers a potentially useful educational resource for those who are interested the communication practices associated with health promotion. Simply put, the IRT model articulates the process of generating, identifying, and challenging the discourse about social norms that participants use to construct and reconstruct reality.

Situating the IRT Model
The study of drinking among college students provides an interesting and important context to examine the educational aspects of health promotion and the development of new communication technologies. 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, psychological, and emotional wellbeing (Goldman, 2002; Hingson, Heeren, Zakocs, Kopstein, & Wechsler, 2002; O'Malley & Johnston, 2002; Perkins, 2002). Moreover, students who drink dangerously can also create secondhand effects for their peers and others (Hingson et al., 2002; Perkins, 2002; Wechsler, Lee, Kuo, & Lee, 2000). In this review of literature, we situate college drinking as an educational context for examining important issues related to health promotion. Additionally, we document the development and testing of the simulation games that provide the foundation for our conceptual model.

College Drinking as a Context for the IRT Model
Research on college drinking, especially the practices associated with dangerous drinking, enables scholars a context to examine several communication concepts. With regard to communication and health promotion, scholars have examined concepts surrounding curriculum infusion and social norms (Lederman, Stewart, & Russ, 2007), the construction of culture through drinking stories (Workman, 2001), peer communication and descriptive norms (Real & Rimal, 2007), personalizing persuasive messages about alcohol consumption (Pilling & Brannon, 2007), and television viewing habits and drinking patterns (Kean & Albada, 2003). For the purposes of developing the IRT model, research on dangerous drinking opens up the possibilities to examine the construction of misperceptions and the development of social norms.

Beyond the direct health risks of dangerous drinking on college campuses is a perception problem: that everyone on campus drinks dangerously. Communicatively constructed myths of excessive student drinking persist despite the numerous studies that find dangerous drinking is not the norm on all college campuses (Berkowitz & Perkins, 1986; Lederman & Stewart, 2005; Perkins, 2002). Misperceptions of others' drinking have been found to be a source of pressure to engage in dangerous drinking (Berkowitz & Perkins, 1986; Haines & Spear, 1996; Lederman, Stewart, Barr, & Perry, 2001; Lederman & Stewart, 2005). These misperceptions about alcohol use by peers tend to increase with increasing social distance (Baer, Stacy, & Larimer, 1991). Thus, most students perceive that their friends drink more than they do, students living in their dormitory drink more than their friends, and students in general drink more than students living in their dormitory.

In addition to the construction of misperceptions about drinking, this line of research has also granted insight about the development of social norms. The social norms approach to reducing alcohol use by college students (Perkins, 2002) involves informing the majority of students (through social norms marketing campaigns) that their alcohol-related attitudes, beliefs, and behaviors are more normative than they perceive them to be. The goal of such an approach is to reduce the social pressure to engage in dangerous drinking through access to better resources and educational material. Yanovitzsky, Stewart and Lederman's (2006) findings bear out the original assertion of social comparison theory (Festinger, 1954). They suggest that individuals tend to compare themselves only with similar others in order to gain more stable and accurate self-evaluations from the comparison group. In other words, college students will compare their drinking behaviors to their perceptions— and sometimes misperceptions—of the drinking behaviors of their direct peers.

The last 15 years have witnessed a massive growth in health promotion programs that address the issue of college drinking through a social norms approach (Milgram & Anderson, 2000). One example of such a program involves the use of college drinking-related decision making simulations (Lederman & Stewart, 2005) and takes a communication approach to reducing dangerous drinking practices. As experienced-based learning activities, simulations of college drinking-related decision making have the potential to capture the complex social dynamics, myths, and decisions that accompany everyday behaviors including dangerous drinking (Lederman & Ruben, 1984; Lederman, 1991, 1992; Lederman & Stewart, 2005). Moreover, they also provide a point of entry to develop models of health promotion that emphasize communication practice, social norms, and the prevalence of new technologies.

Constructing a Simulation Game
Simulation games are working models of reality or some aspect of reality, designed so that participants in the simulation can discover for themselves their own behavioral choices and the consequences of those choices (Lederman, 1992; Tansey, 1971). They provide health educators and health promoters with a potentially useful resource for generating dialogues about alcohol abuse and dangerous drinking. Additionally, they serve as a brief intervention for students, some of whom have the potential to be high-risk drinkers. Simulation interventions focus on helping students to understand their decision-making processes and how to self-regulate their behaviors. Used as interactive teaching and health promotion tools, simulations provide opportunities for college students to examine their own drinking choices comparing them with the actual drinking behaviors of their peers. Moreover, they allow researchers and practitioners to transform a college classroom into a space for health promotion and communication education.

Simulations allow individuals to reflect upon their "real" behaviors and make the personal changes they deem necessary. They also provide a safe place for individuals to critically examine their more risky behaviors and entertain possibilities for healthy changes. To take advantage of these factors, simulation games can create interactive opportunities for interpersonal interaction that are structured within a "game" framework (games have roles, rules, and outcomes), and "simulate"/model real-world decision-related behaviors.

One drinking-related simulation, using a communication focus, that is in use in the prevention of college drinking is LET'S TALK ABOUT IT (Lederman et al., 2007). These simulations consist of five scenarios. Each scenario presents a situation, a question about what to do in that situation, a series of three choices (high, moderate, and low risk), an opportunity for discussion, and an opportunity to make another decision on that same scenario. The ten decisions made by each participant are tallied at the end of the simulation to provide a profile in terms of level of risk involved in their decision making.

This foundation for the IRT model stems primarily from LET'S TALK ABOUT IT (Lederman et al., 2007). LET'S TALK ABOUT IT is the third generation of simulation games that addresses dangerous drinking on college campuses. This game follows IMAGINE THAT! (Lederman, 1991) and RU SURE (Lederman et al., 2001), which are health promotion programs that have been used in more than 375 institutions of higher education. The conceptual framework behind the design of LET'S TALK ABOUT IT is Socially Situated Experiential Learning (SSEL, Lederman & Stewart, 2005). As mentioned previously, Lederman and Stewart's SSEL conceptualization of college drinking argues that students learn to drink through their interactive experiences with others. By creating a simulation in which they can "try" risky behaviors in safe circumstances, the simulation allows students to examine and reflect upon their own choices in the context of the choices they see others make. The simulations, therefore, provide instances of socially situated behavior and allow students to examine how their own perceptions and misperceptions influence their choices compared with the choices others make.

The researchers/game designers behind LET'S TALK ABOUT IT were charged with incorporating the use of personal response "clickers" into the simulation game for the first time. These "clickers" are a communication technology that resembles a television remote control, and we refer to them as IRT or Immediate Response Technologies throughout the remainder of this paper. IRTs allow students in the simulation to anonymously

respond to specific questions about that activity and have their responses projected on a screen. The data are displayed on a screen in the form of bar graphs or charts indicating how many people have responded to each of the choices provided after each scenario. In this way, the entire group of participants may see how everyone responded—all the while their confidentiality is preserved.

IRTs offer researchers and practitioners a means of presenting students with information about the actual drinking norms within their class. This technology prevents students from distancing themselves from typical survey results by assuming that the "data aren't real." As such, these communication technologies enable health promotion programs to build credibility with their participants in a unique and interactive fashion. Considering these new developments and the remaining unanswered questions about simulation gaming, the need for a conceptual model that captures the complex communication processes at play is clearly necessary.

Methods for Developing the Model
The IRT model is just a small, albeit significant, slice of a research program pioneered by Lederman and Stewart. The development of the Immediate Response Technology model relies on qualitative observations and our own experiences facilitating the LET'S TALK ABOUT IT simulation game. We used a grounded practical approach (Craig & Tracy, 1995) to construct the theoretical propositions that make the model work.

Data Collection
Using the LET'S TALK ABOUT IT simulation game outlined in the previous section, the data that fuels the IRT model came primarily from qualitative observations, detailed field notes, and qualitative feedback from both participants and facilitators. LET'S TALK ABOUT IT, like its predecessors, allows for multiple types of data collection.[2] Because this project was especially interested in the dialogue, normative practices, and reconstruction of reality involved in an immediate response technology game, we paid particular attention to the qualitative types of data that the game produces.

More specifically, our research team facilitated 13 different LET'S TALK ABOUT IT simulation games at a major research university in the Southwestern United States. Between January 2005 and May 2005, we facilitated six games. Our objective was to adapt the RU SURE simulation games to two new changes. First was the addition of the immediate response "clickers." Second was a new university setting. We documented our experiences facilitating the game and redesigning it for the "clickers." Starting in August 2006, we received IRB approval to test these changes in the game and record student experiences alongside our own. As such, we ran seven simulation games between November 2006 and May 2007. A total of 128 students participated in these simulation games. We kept detailed field notes during each of the simulation games, paying special attention to when students engaged in dialogue, what they said, and how they constructed and reconstructed social norms about college drinking.

Building a Model
In order to translate these qualitative observations into a useful model, our analyses stem from those suggested by Craig and Tracy in their grounded practical approach to theory building (1995). In their approach, they argue that research has a responsibility to focus on praxisor how theory is made meaningful through critically reflexive practice. Craig and Tracy argue that practice can be analyzed on technical, problem, and philosophical levels. In other words, practices are communication techniques, the use of those techniques to work out problems, and the critical reflection upon how we communicate.

In using this grounded practical approach, we, as a research team, analyzed field notes and critical reflections both independently and collectively. We each developed codes for the salient stories that seemed most intrinsic to the LET'S TALK ABOUT IT games. We began our analysis by focusing on those stories where our codes overlapped. Then, we dialogued about how these experiences fit together on practical and philosophical levels. In doing so, we began to tease out the meta-communicative connections between processes such as dialogue, the social construction and reconstruction of reality, and use of norms to facilitate interaction. As such, we present the following model as a reflection of our data analysis techniques.

The Immediate Response Technology Model
As mentioned previously, we designed the Immediate Response Technology (IRT) model to illustrate the process of generating, identifying, and challenging the discourse about social norms that students use to construct and reconstruct reality. Figure 1 includes the relevant pieces that make up the IRT model.[3] The general process that the model articulates starts with the sampling of experiences from a larger environment and continues through the creation of a learning moment, the use of immediate response technologies to facilitate that learning moment, and the dialogue about socially situated experiences.
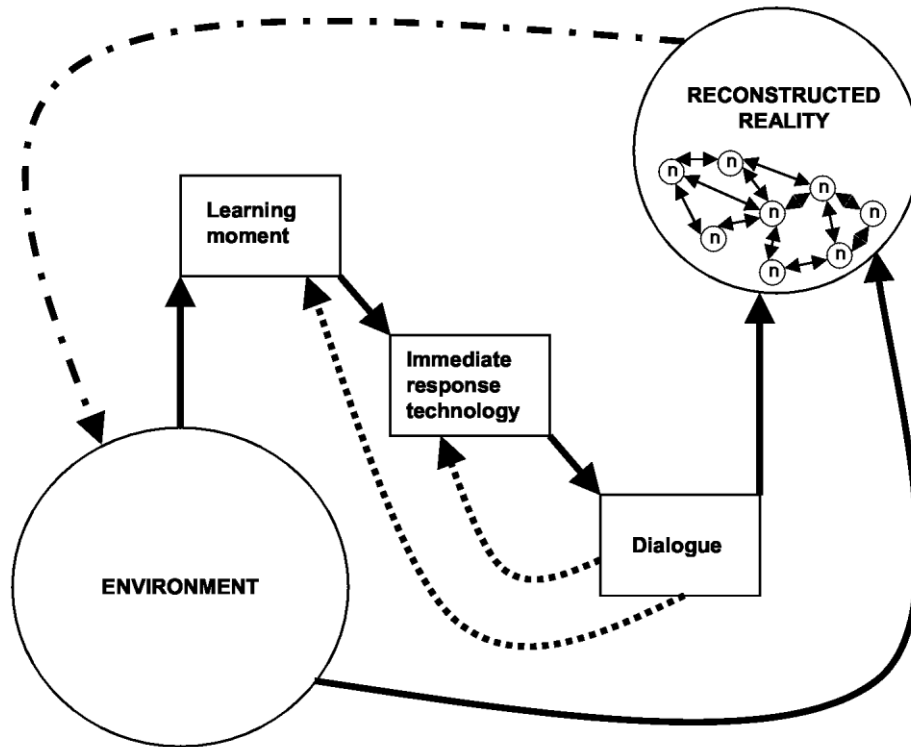

Figure 1. The Immediate Response Technology model.

To further specify the processes captured by the IRT model, several definitions, propositions, and explanations of dotted lines are necessary. Initially, the process begins when a program designer[4] samples experiences from a complex environment. Through this process, program designers make selections about which experiences to include and exclude in a learning moment. The literature review has already explained how game designers have sampled from the environment to create the LET'S TALK ABOUT IT simulation game. For instance, all three games present students with scenarios that have a finite number of choices. Inevitably, some students say their choice would depend on the circumstances. Thus, the learning moment presents students with a scenario that is "real" but not necessarily complete, and the designer gives students an opportunity to clarify the norms that are actually meaningful to them.

Designers can craft a learning moment that is based on actual norms and experiences that are situated socially in an individual's reality. The process is marked by a solid line, because it clarifies the central and most solid path that the model articulates. Moreover, this argument leads to the first proposition that makes this model work.

> Proposition 1: When program designers sample from a variety of experiences that make up a social environment, they create a learning moment to engage "real" social norms.

Simply put, social environments offer program designers a complex range of practices and experiences. Learning moments, which can include the scenarios that we used to discuss college drinking or any similar

pedagogical tool, initiate the process for the individuals who participate in a program or game. Therefore, designers must take great care in using the social environment to construct a useful and meaningful learning moment.

After crafting a meaningful learning moment, program designers must focus on the use of immediate response technologies. With this step of the model, we use the term "technology" fairly loosely. We used InterWrite's Personal Response SystemTM (PRS) clickers (GTCO CalComp, 2007) in order to facilitate our learning moments; however, a technology might include something as simple as a pen and piece of paper that a student uses to engage in a writing activity. Whatever the preferred form of technology, this step outlines the use of the technology to facilitate dialogue and is stated in the next proposition.

> Proposition 2: Through the use of an immediate response technology, a program designer facilitates a dialogue that challenges and affirms the discourse about social norms.

Dialogue is an important process through which students or other individuals make the learning moment their own. In other words, by engaging in dialogue with the program designer and other participants, individuals begin to articulate the norms that are most meaningful to them. For example, because our PRS clicker program allowed for responses to be displayed immediately on an overhead graph, students could challenge and affirm some of their observations about college drinking. Thus, the presence of the IRT was key in facilitating a meaningful dialogue about "real" social norms. The cascading path between learning moment, IRT, and dialogue is also marked by a solid line, because it continues the central process that the model captures.

Once individuals begin the processes of dialogue, several related practices begin to emerge. More specifically, the learning moment and the IRT open up opportunities for participants to get more detailed about their own history with the complex social processes that a program or game addresses. The third proposition conveys some of these practices.

> Proposition 3: As individuals enter into dialogue, they engage both the immediate response technology and the learning moment in ways that illustrate their own experiences.

For the students who participated in the simulation games about college drinking, having the chance to speak back to both the learning moment and the IRT was an important process. For example, being able to question the statistics that participants see displayed on an information slide compelled some students to share some pretty shocking stories. We will go into the details of some of those stories in the following section; however, it is important to note how students actively engaged the learning moment and the IRT in their dialogue. This process is marked by two dotted lines extending from dialogue to both learning moment and immediate response technology. The line is dotted, because it is not a process directed by the program designer. Rather, the participants themselves demonstrated their own agency in "playing" the game.

With the core processes related to the learning moment, the IRT, and the dialogue accounted for, the remaining two propositions focus on what those core processes accomplish. These propositions address practices involved with reconstructing reality and state the following:

> Proposition 4: When individuals draw from their environment, the dialogue, and their interactions with one another, they develop a reconstructed reality.
> Proposition 5: Through the process of reconstructing a reality, individuals are more likely to apply the learning moment, the immediate response technology, and the dialogue to their social environment.

Through our observations, we noted how students often questioned each other as they played the game. The model captures this interplay with the small "n" circles inside the larger circle called reconstructed reality. Students used those interactions, alongside the data from the clickers, the information from the slides, and their own experiences to move to a new or "reconstructed" perspective on college drinking. This process is also

marked by a solid line, because it represents one of the outcomes of the core processes of this model. At the same time, students continued to actively draw upon their own environment to complement what they learned from the core process and their interaction among peers. Finally, it is our hope that students take what they learn through the experience and apply it back to their larger environment. We have some data to suggest that students will do so; however, until this model can be tested more extensively, the final line remains a dotted/dashed line from reconstructed reality back to environment.

In the meantime, this model has been based on grounded practical, qualitative observations. As such, we have some preliminary data to support the development of this model. With the core processes between learning moment, IRT, and dialogue as well as the five propositions in mind, the following section offers some illustrations of the IRT model.

Illustrations[5]
Using IRTs to Facilitate a Learning Moment
We used several forms of immediate response technology to facilitate an experiential learning process. This technology includes clickers, response maps, information slides, and debriefing. The following section includes a brief illustration of each piece of the technology.

The game is conducted using immediate response technology. We used InterWrite PRS™ by GTCO CalComp (2007), but several other immediate technology systems could work. Before the game starts, each student is issued an infrared wireless transmitter, a clicker that is similar to a remote control device used at home to change the channel on the television. The students are asked to respond to each scenario using their clicker device. The choices to each scenario are labeled with letters or numbers that correspond with the buttons on the clicker. This allows the participants to select and respond to the scenario anonymously by pressing the buttons on their wireless transmitter. Once the participants have selected an answer, the signals are captured by a receiver, which is connected to a computer that collects the data. This data are then immediately summarized and charted as a graph that is projected for the participants. Having the results instantly displayed, a response map, allows for immediate participant feedback and discussion.

During the game, the students select their choice to the scenario and then see the response map of their collective choices. This usually inspires discussion, although the participants may need some prompting. We then display an information slide containing recent data about college drinking that is related to the scenario being discussed. Then, the participants are shown the scenario again and allowed to choose their response for the second time. After the participants have played the game and tallied their scores, we engage them in a debriefing session. The debriefing is a structured, post-hoc discussion comprised of guided recall, reflection, and analysis (Lederman, 1992). Debriefing involves discussing the experiences in which the participants have engaged and guiding them through their reflections upon and interpretations of those experiences (post-experience analysis). The emphasis is on what happened—the application of the play of the simulation game to the reality that it is designed to simulate. Overall, we have found that the combined technology of the clickers, response maps, information slides, and the debriefing work together to provide a generative experience where narratives are offered, norms discussed, and (theoretically) future behaviors altered.

The students repeatedly mention during discussion that both the statistics and information provided throughout the game are useful in choosing their responses to the scenarios. We have also found that the information slides generate dialogue. For example, one of the information slides explains to students that 90% of all campus rapes (including acquaintance rape) are alcohol related. During one of the debriefing sessions students commented on this statistic saying that they were surprised by the number. The students went on to explain that they knew the number was high, but they did not realize it was "that high." Another information slide states that there are at least three drugs used to assist sexual assault besides alcohol: GHB (Liquid X), Rohypnol (Roofies), and Ketamine (Special K). This slide sparked discussion among the participants as well, which we detail below. Students also discussed other drugs that they have heard can be slipped into a drink undetected.

The participants have also commented on how the anonymity of the clickers allows them to freely discuss behaviors without having to identify what choice they made. They are able to view the response map and see overall trends in the decision making of their classmates without knowing what choices others made. This allows the participants to make their choice without detection and then freely discuss the scenario without any specific 'backlash' from other classmates. In turn, the anonymity encourages dialogue and possible reconstruction of reality, functioning as part of the immediate response model. During the simulations, some students admitted their choices during the discussion, while others did not. In these cases, the choice of anonymity was as an important factor. Students would often preface a comment or story with their choice as if to explain their contribution to the bar graphs. Thus, we believe that the combination of the collective information provided and the anonymity of the simulation were successful in encouraging students to think and discuss (non)risky behaviors. With this technology, the students have responded positively and seem to be more open to discussion.

The Importance of Dialogue
From the development of a learning moment and use of an IRT, participants are encouraged to speak about the simulations. They compare their preexisting norms with those offered by the simulation by sharing experiences and challenging the sampled reality in the learning moment. The learning moment, as a simulation, is a partial construction of reality. The scenarios offer small amounts of information, and participants seek to "fill in the gaps" where details are limited. Indeed, the reconstruction of reality is dependent upon an incomplete scenario. If details were provided in full, the students would be discouraged to speak. Two features discovered in the scenarios guide our discussion of such dialogue: the engaging of norms, and the sharing of experiences. In these cases, the incomplete scenario was filled with attempts at narrative closure. Here, facilitators would be met with a reconstruction of the offered simulations, a new perspective which may affect participants' environment.

Often, students would respond to the finite number of options by probing the facilitator for more information. They would state, "It depends," which underscores the incomplete nature of the scenarios. Students who sought additional information would receive a consistent response from the facilitator: "All I can tell you is what is in the slide." Dissatisfied with that response, students would fill in the gaps with their own normative interpretations of the scenarios regarding drinking behaviors. For example, in the scenario that asks students whether or not they would assist a drunken friend, Jane, who was about to go home with a stranger, students would respond by adding their own norms and attitudes. One student specifically stated, "It depends on who she is and her personality," while another student asked, "It depends. Do I like Jane or not?" In these instances, participants wanted to contextualize the learning moment, adding details to an otherwise incomplete narrative. Additionally, in this example, students would add their own normative interpretations, occasionally in discord with fellow participants. One woman reported her "shock" in the answers, saying she would "feel responsible for Jane.'' Another student rationalized the answers, adding relevant normative details, saying, "It's not some random guy. It's someone she knew and had her eye on."

In addition to actively and normatively reinterpreting the simulations, participants would also share their own experiences as a means of fulfilling narrative closure. Again, when provided with incomplete details of the scenario, students would often add their own experiences to the dialogue as a means of making sense of the story. This process leads into the overall reconstruction of reality, an issue we will delve into below. In sharing experiences, students displayed their frustration with the incomplete simulation. For example, one scenario provides information about a roommate that is violently vomiting. Students are asked about whether or not they would alert the Resident Advisor (RA). One student adamantly stated, "The RA scenario should be phrased differently ... being sick is normal and you don't need the hospital. If it's alcohol poisoning, then I would take them. If there was additional information, it would be better." Again, the facilitator would refuse to offer additional information to explain the questions, but students would persist to know more. From these shortfalls, students would offer personal narratives. One student remarked, "I've stayed up all night with friends vomiting. I wouldn't want to leave friends with RA. I would take the friend to the hospital myself. I would take them just to be safe." Such narrative sharing provides details for participants to learn from one another. Or, in the words of one participant, "as you do hear from the other points of view, you can maybe learn from other stories.''

In addition to learning from one another, dialogue allows the facilitator to gauge participants' perceptions of "real" social norms. Many students questioned the reality of this game, particularly the scenarios and the scripted responses. One student blatantly stated, "I don't think the scenarios are real—I couldn't relate to any of them. You don't run across a bucket of punch at a party anymore. It is usually a keg. And drinking games. Or they leave a bottle of something like Jack [Daniels] on the table and let you make your own drinks." In one case a student jokingly said, "We should be under the influence when we do the game because my choices are different when I'm sober." While initially a questionable proposal, such commentary highlights the complexity of their decision making in the context of their environments. Moreover, the comment hints at the impossibility of constructing a reality that is suitable to their experiences. Indeed, the majority of students could not identify what would make the game more real on their own. Instead, they reconstruct their own realities in order to fill the gaps.

IRTs and the Reconstruction of Reality
By engaging in this health promotion program, participants actively reconstructed a reality that mirrored aspects of their environment but was altered by the dialogue produced from the learning moment. Theoretically, they will apply the reconstructed reality back into their personal lives to alter future behaviors, an issue we will examine below. The reconstructed reality is produced in three overlapping ways: narrative sharing, facilitated learning, and inter-participant dialogue. First, participants react most directly to the learning moment by offering personal narratives into the discussion. In so doing, they draw from their preexisting environment, including the norms, strategies, and behaviors that occur before the learning moment commences. These stories assist in the construction of a temporary narrative and dialogic reality, where ideas, opinions, and stories circulate. Participants bounce stories between and off one another, offering countering opinions, advice, or caution. For example, in reaction to our scenario regarding tampered drinks, one young woman offered a story of a friend who was slipped an unknown substance, likely GHB or Rohypnol. She started the evening at a party in Los Angeles, but she later awoke naked in a room full of men at a hotel room in Las Vegas. Such a cautionary tale had an immediate effect upon witnessing participants.

In the above example, the powerful narrative offered by participants influences the reconstructed reality. In other examples, the facilitator may assist in leading participants to reconstruct reality and theoretically alter future behaviors, leading to our second means of producing a reconstructed reality. Skilled facilitators can also encourage narratives and provide guidance as means of reinforcing information offered in the learning moment. For example, one scenario is about recognizing signs of alcohol poisoning and calling emergency services. A participant claimed that vomiting at the end of a night of drinking was a product of behaviors that had occurred earlier in the evening, and is not necessarily a sign of alcohol poisoning. According to this participant, abstaining from eating before a night of heavy drinking means that one is more likely to vomit. Therefore, calling emergency services would be unnecessary, because a lack of food explains the symptoms. In response to this logic, the facilitator of the session informed the participant that not eating before heavy drinking means that the human body is more susceptible to alcohol poisoning and more likely in need of medical attention. In this case, the facilitator was able to challenge the logic of drinking habits within the participant, who admitted to not having "thought of it that way." Such challenges to preexisting attitudes may assist in the development of new norms and behaviors associated with drinking.

Finally, the third means by which participants may reconstruct reality within a learning moment is through interactions between participants. In such cases, participants react to reported opinions, experiences, and attitudes toward the issues presented by the facilitator. As discussion circulates, participants compare and contrast their experiences, measuring their previous and future decisions against their peers. For example, in one session, a student repeatedly reported engaging in extreme acts of alcohol abuse. When asked about his decisions to drink at a party, he responded, "I wouldn't feel right if I was the only one not drinking. It's a party; we're supposed to be drinking." In another scenario, which inquired about leaving drinks unattended and possibly adulterated, he commented, "I've done it before, nothing bad happened. I'll drink random beers that I find walking down the street." Such boasting of dangerous drinking habits was met with mixed reactions. Some

students appeared to tolerate his comments, while others reacted directly to his drinking stories. Such commentary underscores the nature of the reconstructed reality, where participants' preexisting beliefs about behaviors are challenged and reworked by interacting with others.

While we believe that participants in our simulated scenarios reconstructed a new reality about the nature of college drinking, we can only offer limited theorizing about how such a reconstruction affects their environment. Looking back upon the IRT model, the arrow that flows from reconstructed reality back into the environment is denoted as broken to signify the limitation of this study in measuring the effect of enacting change. However, we do offer one example that supports our belief that participants in our learning moments were able to utilize the experience to change their lifestyles. One participant, the heavy drinker from the previous example, approached the facilitator following the conclusions of the game. He showed her that he had scored the highest possible rank in the scenarios, indicating that he was at extreme risk for alcohol-related health problems. He believed that he was at risk and wanted to seek additional information. The facilitator led him to the appropriate campus health center representative for assistance and possible treatment. While it is possible that the student was approaching the facilitator to save face, meaning he only approached to give us the reassurance that he would seek help on his own, we hope that his effort was sincere. Future research should follow up with participants to discover how the sessions have altered their perceptions, attitudes, and/or behaviors in their own everyday environments.

Conclusions

In this study, we offer the IRT model as a means of understanding the potential of SSEL environments. The model, supported by our observations through the LET'S TALK ABOUT IT scenarios, seeks to understand how participants in simulated learning environments utilize the experience to alter existing social norms and realities related to dangerous drinking. Moreover, we believe that this model offers a useful resource for the study of communication education and health promotion. The model articulates the process by which students understand, discuss, and challenge their norms related to alcohol. By utilizing incomplete scenarios, facilitators encourage students to complete the story of a night of drinking, filling the gaps with personal experiences, choices, and narrative details. The ultimate potential of the model, however, extends beyond behaviors associated with college age drinking.

The IRT model could be used to discuss a variety of situations related to social constructions of reality, especially those related to communication education and health promotion. For example, as we were in the midst of developing the IRT model, the unfortunate school shooting tragedy occurred at Virginia Tech. In the wake of these events, we considered how the IRT model could help students manage health concerns related to stress and bullying. This conceptual framework could help promote classroom discussions about the nature of these types of events and how students deal with the stresses related to them. In other pedagogical moments, the IRT could facilitate classroom discussions related to gender norms and sexual health, nutrition practices, and physical activity. The potential for use expands far beyond the limited space here, but we believe that the unique construction of the model through its use of immediacy and anonymity operate as a positive catalyst for discussion and narrative sharing.

While promising, the present construction of the model through this research is limited in a number of ways. First, while our observation and analysis spanned over a variety of classrooms, the scenarios were limited to a discussion of college age drinking habits. Future research in other social norms areas could develop the model's potential. Second, the most promising feature of the model—its ability to reconstruct and alter the personal lives and choices of students when engaged in risky behaviors—requires more empirical support. While data exist regarding this potential, future longitudinal research inquiring into the students' choices after engaging in the study may provide more substantial evidence. Finally, the use of the clickers and projected graphs in our research is arguably a more sophisticated deployment of an immediate response technology. While we believe that technology in the model could be conceived in much broader terms, we invite future researchers to experiment with a variety of technologies, including writing narratives or visual media, to discover the potential benefits of each.

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Notes

[1]   The authors are grateful for the work on the research project done by the team at Rutgers University led by Professor Lea P. Stewart. We are especially indebted to Jennifer Greenberg and Cynthia Bates for their development of simulation materials.

[2]   Data can be purely quantitative, looking at variations in students' responses at each decision point in the game. Data might also be purely qualitative by focusing on observations and dialogue as participants play the game.

[3]   To construct the IRT model, we consulted communication models that attempt to capture complex social processes including Westley and MacLean's (1957) model of mass communication, Entman's (2003) model of cascading activation, and grounded practical observations (Craig & Tracy, 1995) to elaborate the IRT model.

[4]   The program designer can be any individual, such as an educator, theorist, or preventionist, who might be interested in using an IRT program to engage actual social norms. For example, a preventionist might create an IRT program to persuade at-risk individuals to change their drinking patterns while a communication theorist might create an IRT program to observe how students dialogue about social norms.

[5]   Because previous sections have already detailed the processes of sampling from the environment and constructing the scenarios for the learning moment, we focus on propositions 2 through 5.

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