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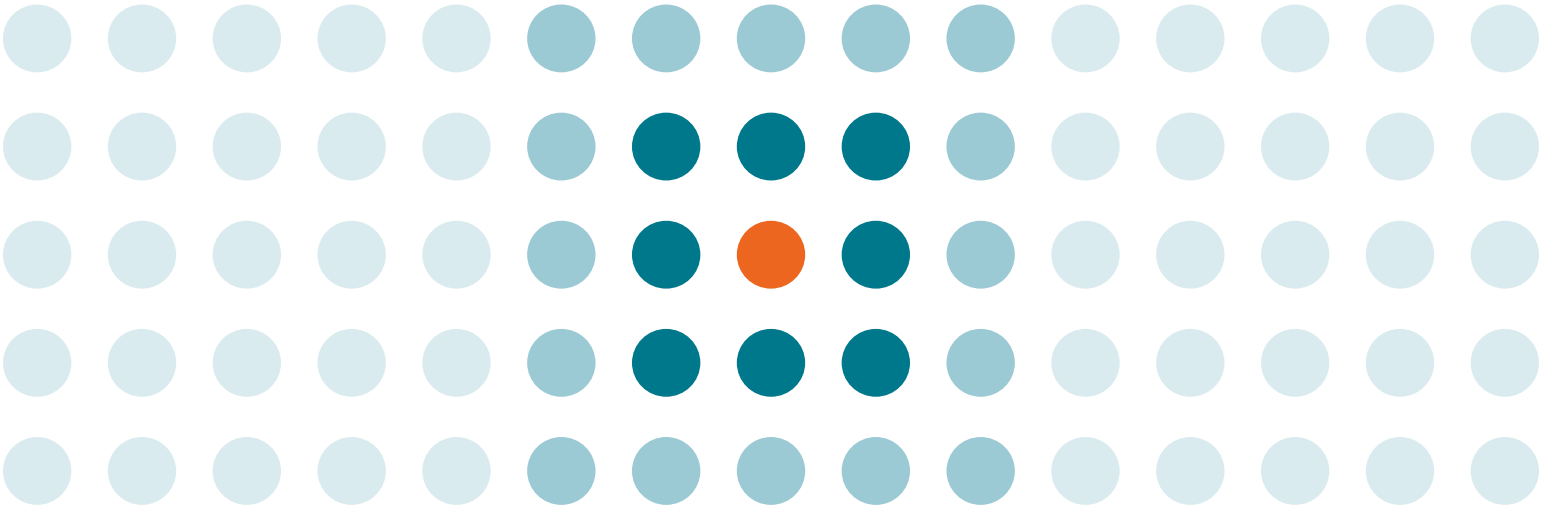

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Click to Engage: Using Keypads to Enhance Deliberation

By Martín Carcasson and Michelle Currie

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Click to Engage: Using Keypads to Enhance Deliberation

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Foreword

By Alison Kadlec, Center for Advances in Public Engagement

Technology-based tools have become an ever-present part of our daily lives. Indeed, in many ways, technology now mediates most of our communication and interactions with each other. Some malign this development, some celebrate it. But the fact is that technology is itself value neutral. Tools don't use themselves, and so technological innovations must be judged according to how they are used and the ends to which they are put. Do the technological tools we use help us to be more creative, collaborative and imaginative? Do they afford new opportunities for us to cocreate our worlds in new and better ways? Or do they serve to further divide us, bolster our cynicism or pander to our worst impulses?

Like any innovation, broad-based success of a technology in one field often spurs test applications in others. The field of public engagement is not immune to these advances. In this paper, Martín Carcasson, of the Center for Public Deliberation at Colorado State University and Public Agenda, and Michelle Currie, of Public Agenda, provide practical insights into the emerging practice of using keypads — also commonly called "clickers" — as a tool in deliberative forums. While much has been written about the application of keypads for teaching and learning in higher education, the literature is relatively sparse regarding their application as a tool for deliberation outside the classroom.

As with some of our other CAPE papers, this piece is aimed toward practitioners interested in finding ways to improve the quality and success of deliberative dialogue and collaborative problem solving. Guided by the premise that alone keypads do little to enhance dialogue, but as part of a well-designed process they can help achieve the core goals of deliberation, Carcasson and Currie outline promising practices as well as missteps to avoid. While some of our papers are more theoretical in nature, this one is geared specifically toward supporting the work of practitioners seeking to "skill up" in their use of clickers.

We view this as a preliminary step in building collective knowledge on the use of keypads for deliberation, and we invite you to share your successes, words of caution and best thinking with us: akadlec@publicagenda.org, mcarcasson@publicagenda.org and mcurrie@publicagenda.org.

Introduction

Keypads have made their way from game shows and talk shows to higher education settings, to which much of the literature pertains. The uses continue to expand to other arenas, with an emerging body of literature discussing the use of keypads for public participation efforts during town hall meetings and other similar convenings.[1] Keypads allow meeting organizers to interact more directly with audiences while capturing and displaying results in real time. When used well, they can increase participant satisfaction, improve interaction and process flow and assist in capturing useful data. When used poorly, however, they can dominate a meeting or artificially replace face-to-face communication. The purpose of this paper is to demonstrate the use of keypads as part of well-constructed engagement and deliberation processes. We are particularly focused on the use of keypads to support deliberative forums and meetings tied to collaborative problem solving. Such meetings are often designed and run by impartial facilitators, who bring a broad range of stakeholders together across perspectives to increase mutual understanding, work through difficult issues and move toward productive collaborative action.[2]

Keypad Basics

Keypads, or clickers, are part of an Audience Response System (ARS) consisting of wireless devices used by participants, a standalone device that captures the responses or a receiver connected to a computer, and software that enables facilitators to collect, display and process the data.[3] For ease of reading, we use the term keypads to refer to the whole system. The authors of this report have primarily used the Turning Technologies system (http://www.turningtechnologies.com), which is integrated into Microsoft PowerPoint, but many of the points should apply to most systems.

The basic function of the keypads is to ask multiple choice questions of the gathered participants. Questions and answers can be prepared ahead of time or developed during the meeting. Facilitators display the questions on a screen for the group to see and respond to. Questions can be formatted to allow participants to pick only one or multiple options (e.g. "choose one," "choose your top three," "choose all that apply"). In most cases of public use, the responses are best kept anonymous, though if necessary individual keypads can be connected to specific participants, as they often are in educational settings. When the polling is open for a particular question, the screen keeps a running count of how many people have responded, until the facilitator presses a button to display the results.

A primary benefit of using keypads is the ability to immediately collect and display the responses (see Figure 1). The display features — font, color, graph type, layout and so forth — are all adjustable when the questions are being created. In our experience, the default graph type is a vertical bar graph to the right of the answer choices, but there is a multitude of graph choices and layouts. When the default is used, the font can get rather small if there are more than five answer choices. For deliberation convenings, we most frequently use horizontal bar graphs, which allow more space for answer choices and easy-to-compare responses. It is important to note, however, that all answer choices need

[1] See, for example, David Campt and Matthew Freeman, "Talk Through the Hand: Using Audience Response Keypads to Augment the Facilitation of Small Group Dialogue," *International Journal of Public Participation* 3, no. 1 (2009): 80–107; and David Campt and Matthew Freeman, "Using Keypad Polling to Make Meetings More Productive, Educational, and Participatory," *National Civic Review* 99, no. 1 (2010): 3–11.

[2] Public Agenda and the Center for Advances in Public Engagement provide a wealth of resources on engagement; see http://www.publicagenda.org and http://www.publicagenda.org/pages/center-for-advances-in-public-engagement. See also, for example, Martín Carcasson, "Beginning with the End in Mind: A Call for Goal-Driven Deliberative Practice" (New York: Center for Advances in Public Engagement, 2009), http://www.publicagenda.org/files/pdf/PA_CAPE_Paper2_Beginning_SinglePgs_Rev.pdf; and "Public Engagement: A Primer from Public Agenda" (New York: Center for Advances in Public Engagement, 2008), http://www.publicagenda.org/files/pdf/public_engagement_primer.pdf.

[3] Depending on the brand used, participants also may be able to respond using a smartphone after downloading the appropriate app. We are most familiar with the system from Turning Technologies. There are other systems on the market; our mention of Turning Technologies is in no way an endorsement. While some systems allow for open-ended responses akin to text messages, this paper is referring to what we've found to be the most common devices, those that only allow for closed-ended responses. Moreover, while some of the technical details may vary slightly, this paper is intended to highlight the general use of keypads as a tool regardless of the system used.

to be the same number of lines for this to work best (for example, all answers are one line long); otherwise the bar graph does not align properly when results are displayed. And, of course, it is best to follow presentation best practices such as visibility of color, a font size of at least 18 and so forth.

Once results are displayed, facilitators may spend significant time discussing them or may need to move on to the next question, depending on time constraints. Regardless, participants certainly like to see the results, so if time does not allow for a discussion, be sure to make them available in other forms for participants to review later (key results can be printed and provided to participants as they leave or can be posted online soon after the meeting). Most keypad systems also allow for diverse reports to be generated from the software, providing a variety of analytical options.

Figure 1: An example of a typical display of responses. Numbers along left hand side refer to total number of respondents per category.

TYPES OF QUESTIONS

There is a range of question types facilitators can ask, using the keypads to support and even strengthen the dialogue and deliberation process. The first four types are pulled from the work of Campt and Freeman,[4] to which we have added four types.

Demographic questions

Soliciting information from participants about themselves — race, ethnicity, the college they're affiliated with, the neighborhood they live in, position at an organization, political affiliation and the like — can be used to show the diversity and commonalities of the group. In addition, it can highlight key stakeholder groups who are not in attendance at the convening. For example, facilitators can follow up demographic questions with graphs revealing the actual demographic splits for that community to provide easy comparisons. Demographic questions also allow for demographic slicing of the information. This can be useful for identifying both common ground and differences between various groups that may warrant additional discussion.

Fact questions

Asking key fact questions surrounding the dialogue topic will show the range of participants' knowledge and can help identify key areas of public misconception. For instance, if the topic includes budget-related items, participants can be asked what percentage of the budget is spent on a particular line item. The correct answer can be displayed once the question is closed to respondents, allowing the facilitator and participants to review the actual and perceived answers at the same time, potentially identifying, confirming or dispelling a misconception.

Experience questions

Asking participants if they have experienced something (in a "choose all that apply" format) or how frequently they experience something (in a "choose one answer," Likert scale question) can show areas of common ground and diversity in the group. For example, participants can be asked how often they use public transportation, whether they have been a victim of a certain crime or if they have attended past sessions related to the topic.

[4] Campt and Freeman, "Using Keypad Polling".

Perspective and opinion questions

As with experience questions, asking how attendees feel about a particular issue — either through Likert scale questions, such as level of agreement with a particular statement, or through multiple choice options — can highlight the diversity and crossover of the group. For instance, participants may be asked their opinion about the current quality of education options, or to react to a list of problem definitions to identify which are most salient.

Prioritization questions

Facilitators can ask participants to rank or prioritize a list of options, such as aspects of a problem, action steps, values, goals and so forth. When designing the questions, facilitators can set how many options participants can pick, such as the top three, and if they choose, they can use weighted scores for the prioritization (e.g. a top choice receives three points; a second, two; and a third, one). Prioritization questions can be particularly important for deliberative events, because they inherently require participants to make tough choices in a way that an individual collection of questions may not. For example, when asked individually, participants may strongly support a long list of potential actions, particularly if they are asked one at a time (e.g. "Would you support an increased focus on science and technology in the school curriculum?"). The nature of most difficult public issues, however, requires making choices among competing goods (or among inevitable costs); therefore, prioritization questions can provide more nuanced information that "forces" participants to make some of those tough choices. These questions can also take various forms to help facilitate the move from talk to action. Participants can be asked a series of questions concerning a list of potential actions, such as: "Which actions are most important?" "Which are currently being achieved?" "Which would be easiest to achieve?" "Which would be most difficult?"

Comparative questions

Comparative questions deserve a mention here, although they are technically not a separate question type. In the ARS we're most familiar with, facilitators can set a comparative link between questions, resulting in a graph that plots the two data points atop each other. Groups can be asked for an initial opinion and then be given time to discuss the results in small groups before being asked again. For instance, given a prioritization question, participants have a chance to discuss in small groups why certain items seem higher or lower than they thought those items should be. Such "initial reaction" versus "after time to discuss" results can be enlightening. Alternately, responses to different questions that have the same answer choices can be plotted against each other for comparison. For example, responses to how important transportation (one question) and education (another question) are to regional job creation can be linked to automatically plot against each other in a comparative graph for the group to discuss.

Process questions

Keypads can also be used to query participants concerning process options that may arise. For example, a process question can identify preferences for topics for breakout sessions, whether a break is needed and whether participants are ready to move on to a new topic. Process questions can be particularly important when a vocal participant or group is pushing back on the process and requesting a shift. Rather than the facilitator deciding whether to give in or not, he or she can put the question to the whole group quickly, so that participants can answer anonymously.

Assessment questions

Lastly, keypads can be used at the end of a process to quickly gather assessment data. The closing of a meeting can often be rather abrupt, and if paper assessments are used, a low percentage of participants may complete them. Keypads are not only more likely to garner high numbers, but the information is also compiled automatically, making them more readily usable by organizers. One concern to consider here, however, is whether process designers are comfortable with the assessment being displayed so quickly and openly. A poor public assessment, for example, may undo any momentum the meeting has created. One option is to remove the graphs from the display. In addition, organizers can provide paper copies of the questions to enable participants to explain the reasoning behind their responses.

Using Keypads for Dialogue and Deliberation

It is important to note that without small group discussions or interaction, the keypads themselves do not support deliberation or deeper conversations. Used alone, in other words, they spark rather thin engagement. Yet, while keypads are not a crucial element of deliberation, we've found them to be a useful complementary tool. In this section, we examine some of the potential uses of keypads that are particularly relevant to deliberative processes. Keypads can:

Reveal who is in the room (and who is not)

Too often, participants do not think about or realize who is in the room, and can often assume the attendees are more representative of the key stakeholders surrounding an issue than they actually are. Including demographic questions at the beginning sends a clear message to the audience about both who is and who is not in the room. Such data is not only critical to organizers after the fact to properly situate the data collected from the event; it is also useful for participants to situate themselves within the group. Knowing that demographics will be captured can also be an important motivator for improved convening recruitment and design.

Acknowledge minority opinions (but be careful)

When responses are displayed, participants are able to review the variance of opinion, allowing the majority and multiple minority voices to emerge. Indeed, sometimes a minority opinion is larger than expected. With polarized issues, it is typical for each side to assume it is the strong majority and the opposition is merely an uninformed but vocal minority. Keypads can provide a more accurate count of the splits, because they do not rely on people having to speak up publicly. Such a function, however, does increase the importance of attracting a diverse audience; otherwise the keypads can foster rather than dispel misconceptions of audience breakdowns. Whereas it can be beneficial to show minority opinions, care needs to be given not to alienate those holding them. If a room predominantly holds one perspective on an issue and only a few dissent, allowing the dissenters to briefly have the floor to make their case (if they are willing) can be a powerful move.

Spark conversation

Using keypads, particularly at the opening of an event, can be especially useful to warm up the group, get them thinking about the topic and set the tone and goals for the dialogue. A key way to do this is to allow for a few comments from different types of respondents to each question to get at the reasoning behind their choices. Of course, we are not suggesting facilitators force people to respond; we've found that typically all it takes is a simple prompt asking anyone who responded in a particular way to briefly share why.

Assist facilitators in allocating remaining time

A related consequence of identifying majority and minority opinions is the identification of where participants tend to agree or disagree, which can help a facilitator better allocate precious remaining time. If a topic reveals sharp disagreement, perhaps that warrants more time to drill down. Alternately, perhaps participants are not ready to take on that issue or not enough time remains, and the best option is to bracket it for more research or a future discussion. Time management is one of the most important tasks of a facilitator, and the keypads can be very useful to help manage that time both more democratically and more productively.

PROMISING PRACTICES

Having done this for many years in a variety of settings, we turn now to some specific practical ideas that can help maximize the benefits keypads can bring to a deliberative process.

Start with a couple of icebreaker questions

Asking one or two neutral or humorous "test" questions to be sure participants are comfortable using the keypads helps open up the group. Most participants we've worked with find them easy to use and fun. The initial questions also identify how many people are in the room, which then becomes the target number for subsequent questions.

Plan for attendees who may not want or be able to use the keypads

While we rarely if ever have run into this, as part of general convening good practice, make accommodations for those who have limitations or who would prefer not to use a keypad, such as a volunteer to type in responses or a paper-and-pencil form to be added to the compiled data. It is good practice to have table facilitators or a few people ready to roam the room to answer questions and address concerns.

Balance the original development of material with pre-developed material

One of the limitations of using keypads when addressing difficult issues is that to some extent the multiple-choice nature of keypad questions constrains options. Meeting designers inherently use significant power when they decide what to ask, how to ask it, and what answer options to make available. To lessen this power, if time allows, small groups can be used to develop material to use for keypad questions, or material from a previous meeting or online survey can be utilized before the meeting. For example, small groups can be asked more open-ended questions such as, "What are the most significant transportation problems in the city?" Lists can be organically developed at each table and then reported out to the front of the room to populate keypad questions and/or answers. Alternatively, the small groups can use easels to capture notes of their discussion, while the facilitator working with the keypads walks the room and captures themes from the easel notes as the discussions continue, developing an overall list for the room. Then the entire group can respond to the keypad questions. A similar process can be followed using online surveys to gather answers to open-ended questions, which can then be analyzed and used for more direct questions and answers with the keypads. Overall, the more participants can see their own views clearly represented and available in the questions and answers, the less chance the keypad results are simply preordained from meeting designers.

Include an "other" category

Perhaps the most difficult aspect of using keypads well is developing the best possible set of answers for questions that do not rely on either Likert scale ("strongly agree," "agree," etc.) or a finite set of options. Often keypads are used to get participants' responses to sets of options or themes, and designers must make difficult decisions about what to include, how to combine options and proper wording. With lists such as these, when possible, including an "other" response option can be particularly important. For example, a process focused on workforce development may include a demographic question capturing how participants connect to the issue, with options such as K–12, community college, four-year institution, county workforce center, small business, larger employer, government and so forth. Including an "other" category takes the pressure off designers by eliminating the need to have every option available. Allotting time to probe the "other" respondents after the question results ("Nine people chose 'other.' Can we hear from some of you? What did we miss?") and having someone visibly capturing that information will help ensure that all participants are heard and that all views are captured for deliberation and reporting.

Verbally recap the responses

It is good practice for a facilitator to add a verbal recap of the responses on each slide. It will likely get boring if you read the number associated with every response for all slides, so mix up what you're noting; for example responses with most, fewest, middle-ground, similar number of respondents, and so forth. Soliciting brief feedback from participants who responded in a particular way can add depth to the quantitative data and prep the attendees for more in-depth discussions in their small groups.

Highlight the common values (and value conflicts) that underlie difficult issues

Too often the prevalence of polarizing communication strategies leaves participants with caricatures of opposing views and limited self-awareness of the constraints of their own perspective. Keypad questions can help participants think deeper about issues such as the values and interests underlying both their perspective and the perspectives of others. For example, designers can develop a list of common values that underlie a particular issue, such as safety, freedom of choice, fairness, respecting difference or community. Participants can first be asked which of the values they hold and be allowed to pick as many as apply. In many cases, support for all the values will be high, which helps identify common ground. Then they can be asked how they would prioritize the values if they could pick only three. The different rankings thus reveal that while generally the participants hold the same values, there may be significant differences in how they rank them and what they prefer when values are in tension, as they often are with difficult issues. Indeed, as Campt and Freeman note, "[Keypads] often push participants to a more nuanced understanding of the complexities of finding solutions to problems for diverse populations".[5] This data can spark insightful small group discussions when used well, helping polarized groups shift from assuming the opposition rejects their values to realizing the opposition is focusing on alternative values that may be in tension with theirs.[6]

Incorporate demographic splicing

A valuable feature that even further minimizes, if not eliminates, any need to connect individual keypads to specific participants is demographic splicing across slides. When the questions are being set up, a slide can be designated as a demographic slide from which to divide responses to the subsequent questions. For example, if the topic is citywide land use priorities, flagging the question of which neighborhood participants live in as a demographic slide will allow the facilitator and participants to review the subsequent questions broken down by neighborhood, highlighting key areas of common ground and divergence. Such demographic splicing can also be very useful for reporting and identifying key areas to move forward.

Collect a variety of data points in different formats

Incorporating keypads throughout the process, such as at the beginning, during small group discussions and again at the end, can fuel the discussions and provide a richer amount of information. Deliberative forums tend to produce notes from small group discussions and potentially both quantitative and qualitative information from pre- or post-surveys. Using keypads can help diversify the information by providing additional quantitative data that is more likely to include all participants. Due to the digital format and the potential for splicing across answers, it can be an added benefit for analysts.

Move from small group to large group discussions (and back)

As explained in the example regarding the development of keypad material on the fly, keypads can be a particularly useful tool for bouncing between small and large group processes, ideally capturing the advantages of each and minimizing the drawbacks. For example, small group discussions allow for deeper conversations and more voices at a time, but they can also be disjointed and leave participants wondering what is happening in the other groups. Integrating keypads with small group discussions allows designers to capture the overall sense of the room periodically and then go back to the small groups for deeper discussion of the results. This back-and-forth can be particularly important, because keypads often reveal the complexity of issues and diversity of thought, and the small group discussions then help people process those differences and work through the tensions. Keypad questions focused on action steps can also be used to gauge where the energy lies in the room, and then new small groups can be formed based on the results. For example, participants can react to a list of 10 actions, choosing which they are most excited about working on. Then areas of the room can be organized based on the top choices (e.g. "If you chose, 'Work with the school district to increase awareness,' join group one in the back corner").

[5] Campt and Freeman, "Using Keypad Polling," 3.

[6] Said differently, when used in this way, keypads can help to move participants from focusing on positions to focusing on interests, a key conflict-management technique developed by Roger Fisher and William Ury in their classic *Getting to Yes: Negotiating Agreement Without Giving In* (New York: Penguin, 1983).

Strengths & Limitations

While we feel that the strengths of incorporating keypads into deliberative processes generally outweigh the limitations, a brief review of each is worthwhile.

STRENGTHS	LIMITATIONS
All voices are heard	Can alienate minority views
Avoids social impact of crowds	Can highlight differences
Responses are immediately visible to all	Can dominate the story of the meeting
Highlights the need to listen to minority views	Multiple-choice options can be constraining
Checks assumptions or inferences	Takes time away from small group discussions
Identifies key differences and common ground	Demographic questions can cause controversy
Can increase participant satisfaction	
Provides a sense of closure	
Adds a different form of data to complement small group discussions for reporting	

STRENGTHS

All voices are heard

Using keypads gives everyone a chance to share their thoughts very quickly. Keypad polling can be particularly useful in meetings where power dynamics might hinder some participants from openly giving public feedback.

Avoids social impact of crowds

Similar to all voices being heard, all respondents are treated as equal, and because responses are anonymous and not displayed until everyone has responded, the social impact of crowds is minimized.

Responses are immediately visible to all

Incorporating keypads into deliberative processes gives the facilitators and participants a chance to see responses immediately. This can prepare participants for small group discussions and add legitimacy to the group sentiment. The data could also easily be posted online soon after the meeting, which can help keep the momentum going. This immediacy, combined with the anonymity of the responses, can also be important to support process transparency. If participants doubt the legitimacy of a process and believe the facilitators may "cook the books" in terms of analysis of the results, the keypads, with their automatic feedback, can be an important tool to help dispel such notions. In addition, seeing the responses can help create a sense of community and connectedness. While participants will have varying responses and views, they will be able to situate themselves as part of the whole, as members of a community with diverse backgrounds, experiences and priorities.

Highlights the need to listen to minority views

People often assume minority views are much less popular than they are. Data from the keypads can help identify minority views and highlight the need for them to be incorporated into discussions and decision making. Even if there are only a few dissenting opinions to a question, opening the floor to allow those few people to explain their reasoning can enhance the understanding of perspectives around an issue.

Checks assumptions or inferences

General opinions and information around an issue often exist prior to deliberative convenings; using keypads helps test any preexisting assumptions and inferences. Pairing the closed-ended responses with time for brief feedback on response types works to increase the understanding of perspectives.

Identifies key differences and common ground

Because the keypads provide immediate synthesis of responses, they help identify key areas of convergence and divergence that may (or may not) need more discussion.

Can increase participant satisfaction

Simply put, participants tend to enjoy using the keypads. In our experience, assessment questions focused on the keypads (e.g. "Were the keypads helpful to the process?") earn very high marks.

Provides a sense of closure

Deliberative processes often rely on small group discussions, but such discussions make it more difficult for participants to get a sense of the overall perspective in the room. Using keypads at the end of the convening allows for reporting out and helps provide a sense of closure without the need for individual report-outs, which are time consuming and often of poor quality. Soliciting select verbal feedback from participants can be incorporated to get at the reasoning behind choices.

Adds a different form of data to complement small group discussions for reporting

Data from keypad processes can provide useful information for reports to help interpret the results of interactive meetings. Notes from small group discussions provide rich, qualitative data, while the keypads can add quantitative data that can help situate it and that speaks to audiences that tend to favor numbers. Participants can also be asked in surveys to provide additional explanations of their keypad responses to enrich the data. For example, after a Likert scale question with surprising results, if there is not time to discuss the results, participants can be asked to explain on paper why they supported the statement or not. All question slides should be clearly numbered, so it is easy for facilitators to ask for written reactions and participants can simply note the question number with their comments.

LIMITATIONS

Can alienate minority views

While a key strength of incorporating keypads is bringing forth minority views, it also has the potential to alienate participants, as they now realize that they are a minority. This can be particularly troublesome if the group is not representative but is perceived to be (e.g. 90 percent of participants support a local sales tax increase, but very few business owners or residents with low incomes are in the room). Clearly, the use of keypads significantly increases the importance of a robust convening process.

Can highlight differences

Highlighting characteristics and perspectives of the group can show areas of common ground, but it can also emphasize the differences among the group. If ample time is not provided for participants to understand and talk through those differences, or if the keypad questions are worded in a way that creates a stronger perception of difference than actually exists (because questions may force people into specific boxes when reality is much more complicated), then the highlighting of these differences could be problematic.

Can dominate the story of the meeting

The media — and perhaps participants themselves — might be inclined to home in on a specific question and how participants "voted" on particular questions rather than on the goals and data from the process as a whole. Keypad results may seem to be a better fit for simplistic media stories than the complexity of deep small group discussions. There are several ways to attend to this. One is to be careful with the language used. Avoiding the word vote, for instance, can convey that the discussion around the keypad activities is not just lip service. In addition, being explicit throughout the process about how the information generated in the convening will be used will posit the keypads in the broader context of the event, not to mention that it adds a level of transparency and authenticty.

Multiple-choice options can be constraining

As is inherent with closed-ended questions, using keypads often requires predetermined material, both in terms of what questions are asked and what answer options are available. However, various process options can help mitigate these effects, such as including and soliciting input about "other" responses, allowing for discussion or written comments after questions and carefully positioning the keypads and any resulting data in the broader context of a dialogue-based process.

Takes time away from small group discussions

While keypads require little time for setup and participants quickly figure out how to use them, incorporating them into a deliberation process does take time away from small group discussions. Nonetheless, we find keypads to be a valuable enough asset to continue to use them for deliberation. If the design of the convening is well thought out and the questions selected for keypad responses are central to the topic, the keypads will most likely emerge as a benefit to the process, rather than a weakness.

Demographic questions can cause controversy

While we believe capturing demographics is an important task for public meetings — if for no other reason than to push organizers to think about the importance of attracting a broad audience and getting beyond the usual suspects — the wording of demographic questions can get very tricky, and it can often distract from the meeting topic. For example, finding the best labels for racial and ethnic groups is always controversial, and capturing the gender mix of an audience is much more complicated than simply asking whether participants are male or female. Organizers must take the time to talk through which demographic questions they want to ask, and be sure all are comfortable with what is being asked and what options are available as answers.

Conclusion

Whereas keypads are not a critical element to deliberative processes, if part of a well-designed deliberative convening, they can strengthen the quality and enjoyment of the discussions while assisting in gathering valuable data. Indeed, while there are notes of caution, we feel that the opportunities that integrating keypads provide outweigh any limitations. At the beginning of a gathering, keypads can act as an icebreaker and help frame the issue and prepare participants for small group discussions. In addition, the immediacy of the results benefits the organizers, providing the opportunity to prioritize and reorganize the convening to maximize the benefits. Because of their flexibility, keypads allow for predetermined and on-the-spot questions and movement between large and small group activities. All in all, the application of what was once a market research and higher education device to deliberative forums provides much promise for the field.

We close with a quick-reference table of the promising practices for using keypads to enhance deliberations and ways to avoid misuse, pitfalls and limitations.

DO	DON'T
Start with a couple of icebreaker questions	Jump right into tough prioritization questions
Plan for attendees who may not want or be able to use the keypads	Assume all participants will want to or can use the keypads (although in our experience most or all will)
Balance the original development of material with pre-developed material	Assume you know what all of the responses will be (but DO dedicate time before the convening to select the questions and answer choices and get comfortable enough with the technology to create on-the-spot questions)
Include an "other" category (and invite participants to share their responses)	Use the "other" response option as a catchall to mask limited or irrelevant answer choices or ignore those who responded "other"
Verbally recap the responses (better yet, allot time for respondent feedback)	Give a play-by-play for each and every slide or allow lengthy participant feedback for all responses
Highlight the common values (and value conflicts) that underlie difficult issues	Ignore the need for dialogue around common ground and tensions
Incorporate demographic splicing	Haphazardly select demographic questions and answer choices
Collect a variety of data points in different formats (and make the information from the keypads and small group discussions available after the convening)	Allow the keypads to dominate the story of the meeting by overemphasizing voting and the keypad activities
Move from small group to large group discussions (and back)	Segment the quantitative and qualitative portions of the convening with little cohesion between the two

Keypad Example:
Center for Public Deliberation Bicycle Safety Summit

In 2009, the Center for Public Deliberation (CPD) hosted the Bicycle Safety Summit in Fort Collins, Colorado, after two fatal accidents shook the biking community, which is very strong and connected in Fort Collins. The city bike coordinator asked the CPD to run an event to bring the community together to talk about what could be done to improve bicycle safety. The preference was to host the meeting rather soon, so there was not ample time to research the issue and develop adequate background material to structure the conversation. Instead, a process was designed using wireless keypads, which would have the participants developing and reacting to material from open-ended questions. This was the first process we ran after purchasing a set of Turning Technologies keypads.

At the CPD, we train students to be table facilitators, and we had about 25 students available to help run the meeting. The room was set up with round tables that seated eight each, and we had 79 participants. Around 12 tables were filled, with facilitators and notetakers at each.

The process began with small group discussions focused on the following question: "Please introduce yourself and identify what you think is the most critical issue for our community to deal with related to bicycle safety. What are the problems we need to address?" Notetakers captured a list of the answers on an easel set next to each table. After going around the table and allowing each person to add something to the list, the facilitator asked for any additional items for the list, and then explained that the group had 15 minutes to talk through the list, with an eye toward identifying what they considered as the three most important issues to address. The detailed discussion was captured by the notetaker on a legal pad, as the participants used the list on the easel as their guide. After the 15 minutes, each participant was given three sticky dots, and dot-voted on the easel sheet. Facilitators wrote the top three choices on separate index cards, which were sent up to the keypad designer.

The designer had been walking around the room looking over the easel boards, so he already had a sense of some of the recurring themes that were arising. He then went through the index cards, matching similar themes. While he was doing this, participants were answering a set of demographic and fact questions, which included: "What is your gender?" "What is your ethnicity?" "What is your age bracket?" "What is your home zip code?" Then participants were asked, "To which group do you most closely identify?" The answers included: K–12 student, college student, medical/health care, government official, law enforcement, parent, bicycle advocate, concerned citizen, other. Anticipating that most of the participants would be part of the biking community, we then asked, "What best describes the type of bicyclist you are?" with the following answers: it's my primary mode of transportation; bicycle commuter (work and/or school); recreational bicyclist; occasional bicyclist; non-bicyclist.

We then asked some experience questions:

- Do you wear a helmet when you ride?
- How often do you come to a complete stop at stop signs when cycling?
- How often do you come to a complete stop at stop signs when driving?
- When driving, how often do you make eye contact with bicyclists at intersections?
- When cycling, how often do you make eye contact with motorists at intersections?

- To what degree do you feel safe riding in Fort Collins?
- Do you feel knowledgeable about cycling rules and regulations?

The experience questions were important to establish that the behavior of bicyclists, not just motorists, was an issue. Then we moved on to some fact questions, primarily to identify the extent to which the audience was knowledgeable about cycling rules and regulations. We asked:

- Is cycling allowed on sidewalks in downtown Fort Collins?
- Is cycling allowed on College Avenue in downtown Fort Collins?

Interestingly, 44 percent of the participants got the last yes/no question wrong, even though 73 percent of the participants had just answered that they were "very" knowledgeable about cycling rules.

By this point, the designer had identified key themes from the index cards and had typed them into a separate computer. Before the meeting, generic slides were arranged to allow quick setup of the next set of questions, which were designed to query the audience concerning the list of problems. Thirteen problem areas were originally identified, so we first went through each of the 13 problems with a nine-point scale from "extremely important" to "extremely unimportant." The display of the results also included a mean score, which allowed us to get an initial sense of the ranking of the problems (see Figure 2).

After walking through the 13 slides, we switched back to small group discussions to respond to those results. As those conversations started, we put together a slide with the 10 problems that were

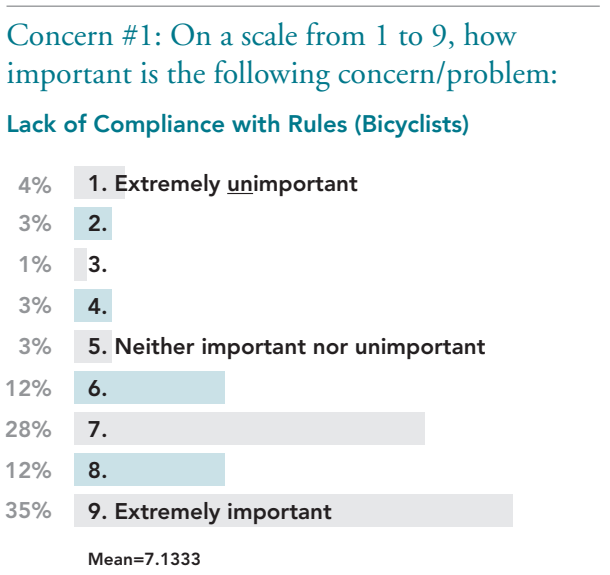

Figure 2: Display of responses when participants were asked to rank the importance of specific problems.

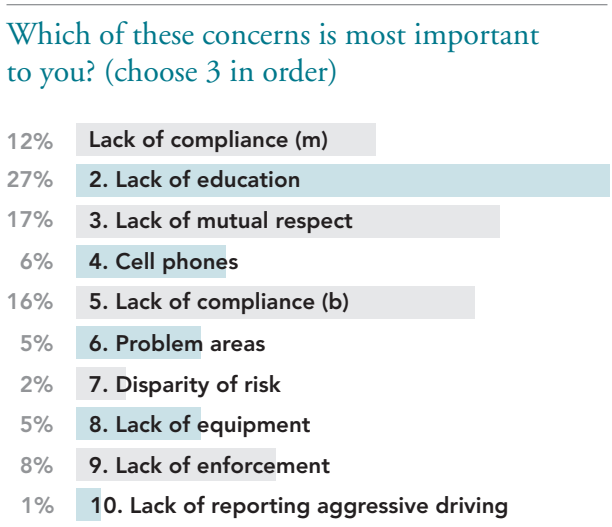

Figure 3: Display of responses when participants were asked to prioritize the top 10 issues.

ranked as most important, and then put that up for participants to give a priority ranking (see Figure 3). We felt that slide provided different information, because it required participants to prioritize the list (technically, they could have picked "extremely important" for every single problem with the initial set of questions).

The small groups were then asked to discuss actions to address these problems. Similar to the initial process, each group first created a list of potential actions captured on the easel, then talked through them together, dot-voted to prioritize their list, and provided the top three actions on index cards to the front of the room. Slides were put together with the themes of potential actions, and the overall group used the keypads to respond to the various ideas, using a similar setup as with the problems. Twenty unique actions were identified. Another facilitator was capturing the themes and their mean scores on the second computer on a simple table. After the last question, the list was sorted by the mean score, displaying the top 10 actions.

The final session of the day asked participants to reorganize according to which of the top 10 actions they were most passionate about. We ran two 10-minute sessions, so participants could either choose two different actions or could stay at the same one with two groups. Facilitators at the table captured information concerning six discussion questions that were available at each table on a handout:

- Who is already involved with this?
- What other stakeholders/organizations should be involved?
- What other resources are available?
- Who should take the lead?
- Who in the group would be willing to be a part of this issue moving forward?
- What are the barriers to moving forward on this issue that we need to overcome?

Each table also had "commitment cards" available, on which participants could provide contact information and identify which of the actions they were interested in working on in the future. After the second round of discussions focused on those actions, participants were asked to evaluate the process by completing a one-page survey with a few open-ended questions about key issues that had arisen during the planning.

All the information gathered at the event — from the keypads, the easels, the table notes, the commitment cards and the surveys — was analyzed in a report that was presented to the three bicycle advocacy organizations (the full report is available at http://www.cpd.colostate.edu/bicyclesafety summitreport.pdf).

Overall, the keypads played a critical yet complementary part in the process. They allowed us to take new information the participants had developed in their small groups, present it to the whole room and get feedback. The quantitative data from the keypads certainly improved the quality of the report.

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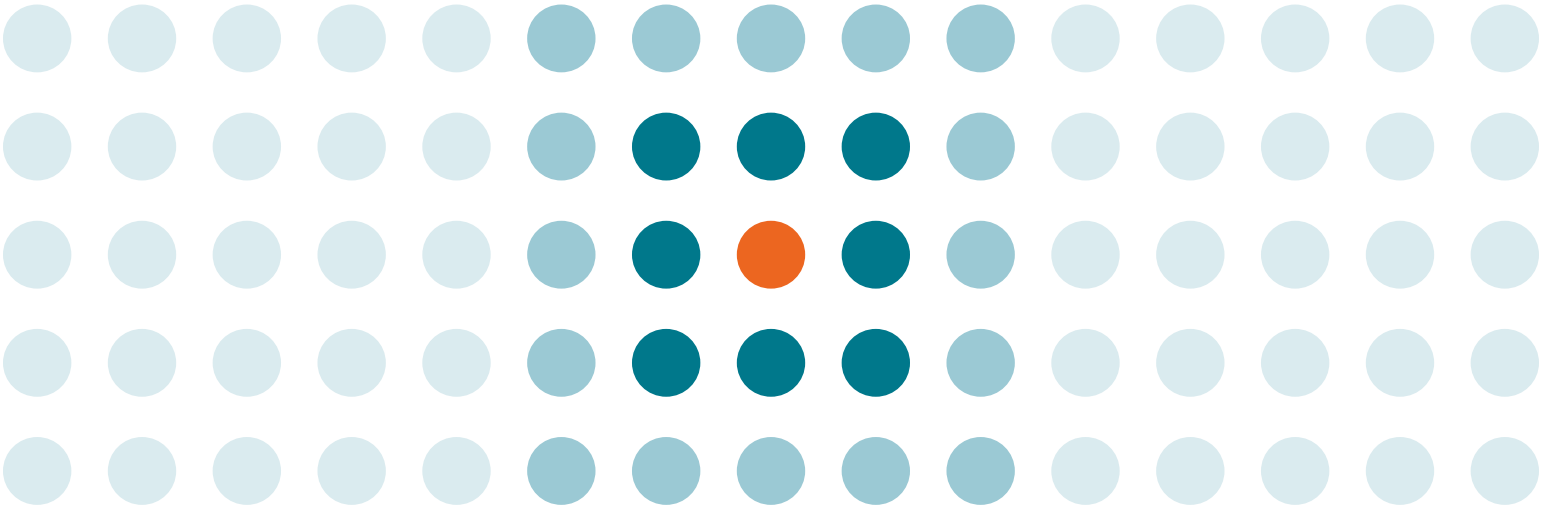

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