



Applied Research Methods

August 2016

# Survey methods for educators: Collaborative survey development (part 1 of 3)

Clare W. Irwin  
Erin T. Stafford  
Education Development Center, Inc.



**ies** NATIONAL CENTER FOR  
EDUCATION EVALUATION  
AND REGIONAL ASSISTANCE  
Institute of Education Sciences  
U.S. Department of Education

**REL**  
NORTHEAST  
& ISLANDS  
Regional Educational Laboratory  
At Education Development Center, Inc.

**U.S. Department of Education**

John B. King, Jr., *Secretary*

**Institute of Education Sciences**

Ruth Neild, *Deputy Director for Policy and Research*  
*Delegated Duties of the Director*

**National Center for Education Evaluation and Regional Assistance**

Joy Lesnick, *Acting Commissioner*  
Amy Johnson, *Action Editor*  
Elizabeth Eisner, *Project Officer*

REL 2016–163

The National Center for Education Evaluation and Regional Assistance (NCEE) conducts unbiased large-scale evaluations of education programs and practices supported by federal funds; provides research-based technical assistance to educators and policymakers; and supports the synthesis and the widespread dissemination of the results of research and evaluation throughout the United States.

August 2016

This report was prepared for the Institute of Education Sciences (IES) under Contract ED IES-12-C-0009 by Regional Educational Laboratory Northeast & Islands administered by Education Development Center, Inc. The content of the publication does not necessarily reflect the views or policies of IES or the U.S. Department of Education, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.

This REL report is in the public domain. While permission to reprint this publication is not necessary, it should be cited as:

Irwin, C. W., & Stafford, E. T. (2016). *Survey methods for educators: Collaborative survey development (part 1 of 3)* (REL 2016–163). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

This report is available on the Regional Educational Laboratory website at <http://ies.ed.gov/ncee/edlabs>.

## Summary

This guide describes a five-step collaborative process that educators can use with other educators, researchers, and content experts to write or adapt questions and develop surveys for education contexts. This process allows educators to leverage the expertise of individuals within and outside of their organization to ensure a high-quality survey instrument that meets the policy or practice goals of the organization. Examples from collaborative survey development projects are highlighted for each step.

The five-step collaborative survey development process is:

- Step 1: Identify topics of interest.
- Step 2: Identify relevant, existing survey items.
- Step 3: Draft new survey items and adapt existing survey items.
- Step 4: Review draft survey items with stakeholders and content experts.
- Step 5: Refine the draft survey with pretesting using cognitive interviewing.

This guide is the first in a three-part series of survey method guides for educators. The second guide in the series covers sample selection and survey administration, and the third guide in the series covers data analysis and reporting.

## **Contents**

<b>Summary</b>	<b>i</b>
<b>Why this guide?</b>	<b>1</b>
Survey research process	1
Collaborative survey development	2
<b>Step 1: Identify topics of interest</b>	<b>5</b>
Select and convene relevant stakeholders	5
Develop a collaborative relationship among stakeholders	5
Identify topics of interest	5
Develop a table of specifications	6
Choose the format for survey administration	6
<b>Step 2: Identify relevant, existing survey items</b>	<b>7</b>
Identify existing surveys	7
Identify relevant items from existing surveys	7
<b>Step 3: Draft new survey items and adapt existing survey items</b>	<b>8</b>
Draft survey items	8
Adapt existing items	8
Align items with topics and subtopics	9
Develop the analysis plan	9
<b>Step 4: Review draft survey items with stakeholders and content experts</b>	<b>10</b>
Gather targeted survey feedback from stakeholders	10
Construct the survey	10
<b>Step 5: Refine the draft survey with pretesting using cognitive interviewing</b>	<b>11</b>
Prepare for the cognitive interviews	11
Host the cognitive interviews	12
Organize data and refine the survey items based on cognitive interview data	13
<b>Using this guide</b>	<b>13</b>
<b>Limitations of this guide</b>	<b>13</b>
<b>Appendix A. Additional survey development resources</b>	<b>A-1</b>
<b>Appendix B. Sample table of specifications: Excerpt from the Early Childhood Education Research Alliance collaborative survey development project</b>	<b>B-1</b>
<b>Appendix C. Sample analysis plan: Excerpt from the Northeast Rural Districts Research Alliance collaborative survey development project</b>	<b>C-1</b>
<b>Appendix D. Sample feedback form: Excerpt from the Early Childhood Education Research Alliance collaborative survey development project</b>	<b>D-1</b>

<b>Appendix E. Sample cognitive interview protocol from the Northeast Rural Districts Research Alliance collaborative survey development project</b>	<b>E-1</b>
------------------------------------------------------------------------------------------------------------------------------------------------------	------------

<b>Appendix F. Sample cognitive interview analysis codebook from the Northeast Rural Districts Research Alliance collaborative survey development project</b>	<b>F-1</b>
---------------------------------------------------------------------------------------------------------------------------------------------------------------	------------

<b>References</b>	<b>Ref-1</b>
-------------------	--------------

**Boxes**

1	Three research alliance projects provide examples of collaborative survey development	3
2	Definitions of key terms	3
3	Step 1 in practice: Identifying policy-relevant questions with the English Language Learner Alliance	6
4	Step 2 in practice: Identifying existing survey items related to online learning	7
5	Considerations for item stems and response options	8
6	Step 3 in practice: Drafting and adapting survey items with early childhood educators	10
7	Step 4 in practice: Reviewing draft items with stakeholders and experts in early childhood education	11
8	Step 5 in practice: Cognitive interviewing with online and distance learning educators	12

**Figures**

1	Three stages in the survey research process	1
2	Five steps in the collaborative survey development process	2

**Tables**

1	Common response option types and considerations	9
B1	Sample table of specifications from the Early Childhood Education Research Alliance	B-1
C1	Sample analysis plan: Survey item-to-research-question mapping from the Northeast Rural Districts Research Alliance	C-1
D1	Sample survey feedback form from the Early Childhood Education Research Alliance	D-1
F1	Relevance: The extent to which the survey and its items tap into appropriate policies and practices	F-2
F2	Length: The number of items and the time taken to complete the survey	F-2
F3	Flow: The survey format and grouping and ordering items	F-2
F4	Overview and instruction pages	F-3
F5	Single item: Question 1: In school year 2012/13, were any students in your school enrolled in online courses?	F-3

## Why this guide?

Increasingly, state and local educators are using data to inform policy decisions (Hamilton et al., 2009; Knapp, Swinnerton, Copland, & Monpas-Huber, 2006; U.S. Department of Education, 2010). Educators need access to a wide variety of data, some of which may not be in their data systems. Survey data can be particularly useful for educators by offering a relatively inexpensive and flexible way to describe the characteristics of a population. To obtain such information, educators may need to conduct their own survey research.

### Survey research process

The survey research process includes survey development, sample selection and survey administration, and data analysis and reporting (figure 1). The activities undertaken in each stage may vary depending on the type of information being collected (Fink, 2013). For example, if educators want to conduct a survey on a topic that has been widely surveyed in similar settings, they may be able to use an existing survey instrument and skip the survey development stage altogether. Or they may decide to use an existing survey but add items of particular interest to their context. If no surveys exist for the topic, educators will need to develop a new survey in stage 1 (see figure 1).

The three guides in this series correspond to the three stages in figure 1 and provide an overview of survey methodologies for a nontechnical audience of educators. However, the resources needed to complete some of the activities may make the series most relevant to larger school districts, state departments of education, and other large agencies. This first guide in the series covers survey development, the second guide in the series covers sample selection and survey administration (Pazzaglia, Stafford, & Rodriguez, 2016a), and the third guide in the series covers data analysis and reporting (Pazzaglia, Stafford, & Rodriguez, 2016b).

These guides are intended to lead to the use of survey findings in decisions about policy and practice in schools and local or state education agencies; however, offering guidance on how decisionmakers can use the results is not the focus.

Because this series is an overview, readers seeking a comprehensive guide to survey methods or to complex analyses of survey items are encouraged to explore other resources such as textbooks, journal articles, and websites dedicated to these topics or to engage consultants who have this type of expertise. For useful references on developing a survey, see appendix A.

---

**Figure 1. Three stages in the survey research process**



Source: Authors' construction.

---

## Collaborative survey development

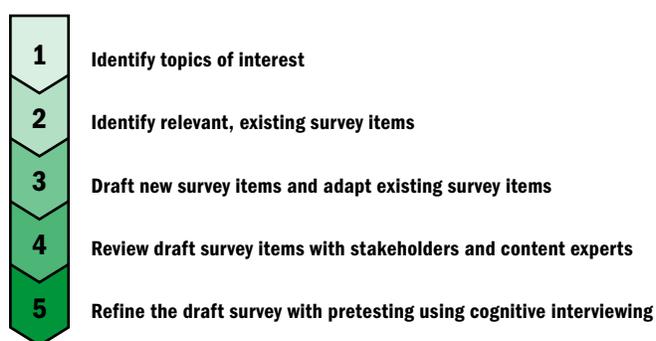
Methodological resources for survey researchers found in theoretical texts may not guide educators through a collaborative approach to survey research in practical education contexts. The Regional Educational Laboratory (REL) Northeast & Islands collaborative survey development process is a process by which educators work with one another, researchers, and content experts to write or adapt survey items to create a new survey instrument. This five-step process allows educators to leverage the expertise of individuals within and outside their organization to ensure a high-quality survey and reduce the burden on any one individual (figure 2).

The core survey development team is a small group of individuals who lead development of the survey through this process. The team should be made up of three to eight individuals, some with experience in survey development, some with expertise in the content area to be surveyed, and some with knowledge of the local context. The size of the team may vary by project. The five steps are intended to guide a core development team through developing a survey.

To address the needs identified by the three research alliances (box 1), REL Northeast & Islands organized core survey development teams that implemented the five-step process. This guide draws on examples from these survey development projects conducted with educators across multiple research alliances of REL Northeast & Islands. The three collaborative survey development efforts described in box 1 were guided by the steps proposed in this guide and provide examples for the guide. See box 2 for definitions of key terms used in this guide.

---

**Figure 2. Five steps in the collaborative survey development process**



Source: Authors' construction.

---

---

### Box 1. Three research alliance projects provide examples of collaborative survey development

Throughout this guide, examples illustrate each step of the collaborative survey development process. Examples are from Regional Educational Laboratory Northeast & Islands research alliance projects described below.

- **English learner students survey development project.** In a state with a growing population of English learner students, state education administrators wondered whether they should provide school leaders with direct guidance on issues related to the education of these students. They wanted to know school leaders' policies for identifying and monitoring English learner students, evaluating teachers who have English learner students in their classrooms, and implementing response-to-intervention services with English learner students, among other things. Because the state did not mandate collection of this information, the administrators wanted to survey principals to gather information about school policies and practices for English learner students. This project was conducted as a part of the English Language Learners Alliance.
- **Online learning survey development project.** A partnership of educators in New York wanted to know if they should encourage state leaders to invest in support for distance education and online learning. Because the state's longitudinal data system did not distinguish distance education or online courses from face-to-face courses, stakeholders had little data about how and how much distance education and online courses were being used. Accordingly, the practitioners wanted to survey schools to collect basic information, such as the number of online and distance education course enrollments by academic domain. This project was conducted as part of the Northeast Rural Districts Research Alliance.
- **Early childhood survey development project.** Leaders in state departments of education and departments of early learning wanted to understand how early childhood educators in their states were using child assessment data. Specifically, they wanted to know what assessments were being administered, which center or school staff members were administering the assessments, and how assessment data were being used, among other things. Because no such data existed in state data systems, the state leaders wanted to survey early childhood classroom educators and program administrators to better understand how assessments were being used with children from birth through grade 3. This project was conducted as part of the Early Childhood Education Research Alliance.

---

### Box 2. Definitions of key terms

**Analysis plan.** A preparatory survey tool that maps topics of interest to survey items and suggests types of data analyses and results presentation.

**Anonymous survey responses.** Survey responses that cannot be linked to the survey respondent.

**Cognitive interviewing.** A method of identifying and correcting problems with surveys that involves administering a draft survey to a respondent while interviewing the respondent to determine whether the survey items are eliciting the intended information.

**Cognitive interviewing codebook.** A record of the codes used to categorize feedback gathered during cognitive interviewing.

(continued)

---

## Box 2. Definitions of key terms *(continued)*

**Collaborative survey development.** The process by which practitioners, researchers, and content experts work together to write or adapt survey items to create a new survey instrument that they then refine using content-expert review and cognitive interviews with potential respondents.

**Confidential survey responses.** Survey responses that can be linked to respondents but that will not be shared outside the survey team or other designated individuals.

**Core survey development team.** The group of individuals primarily responsible for developing a survey. This team is responsible for scheduling and conducting meetings, developing the survey items, eliciting stakeholder feedback, and making final decisions regarding the survey.

**Item.** A question on a survey; see *survey items*.

**Item stem.** For each survey item this is the part that a respondent is asked to answer or rate. An example item stem reads, “I feel supported by my principal.” The item stem is usually followed by a set of response options (for example, strongly agree, agree, disagree, strongly disagree).

**Research alliance.** A partnership of educators, policymakers, and other stakeholders who share specific education interests and questions. Within the Regional Educational Laboratory (REL) Northeast & Islands, these alliances consist of regional partners who collaborate with REL Northeast & Islands to develop a coherent research agenda to address policy and practice questions of interest.

**Research question.** A clearly stated question that articulates the problem to be addressed or hypothesis to be tested by a research activity and guides the research.

**Response option.** The types of answers a respondent can provide to a survey item. Common response option types include multiple choice, rating scales, and open response (table 1).

**Stakeholder group.** The subset of stakeholders who are collaborating on the survey development and providing feedback to the core survey development team.

**Stakeholders.** Specific members of the education community who have an interest in the survey and its outcomes. Depending on the purpose of the survey, this group may include teachers, administrators, parents, students, researchers, policymakers, and others.

**Survey administration format.** The format in which the survey is administered. Common formats are paper-and-pencil surveys, online surveys, and phone surveys.

**Survey items.** Questions or statements that make up the survey and are used to gather information.

**Survey research.** A research method that uses questions to collect data.

**Table of specifications.** Sometimes referred to as a survey blueprint, a table of specifications is a document that outlines the topics and subtopics to be included on the survey and serves as an outline for developing the survey items.

**Target population.** The entire group the survey team wants to obtain information about by generalizing from the survey results.

---

## **Step 1: Identify topics of interest**

After the need for a survey instrument has been identified by stakeholders, articulate the goal or goals for the survey and resulting data (for example, a goal may be to identify challenges to implementing online learning). From this goal, identify a set of topics that the survey instrument will address. To ensure that the final instrument reflects the needs of the stakeholders, follow the suggestions below. An example of implementing step 1 is shown in box 3.

### **Select and convene relevant stakeholders**

- Determine the subject matter the survey will address (for example, math instruction, early learning standards).
- Identify stakeholders with expertise related to the subject matter as well as those with survey development and analysis expertise. Stakeholders may include local educators, policymakers, content experts (for example, individuals with expertise in math pedagogy), researchers at local colleges or universities, and other research organizations.
- Ensure that some stakeholders have strong ties to the target population. They may also be able to help implement the survey by encouraging respondents to complete it and by showing the larger community that they support the survey.

### **Develop a collaborative relationship among stakeholders**

- Allow stakeholders to voice their interest during the survey development process and explain how they see the survey results informing their work and that of their organizations.
- Allow for ample time across multiple meetings for stakeholder conversations on the direction of the survey.
- Set expectations for individual roles (such as reviewers and meeting facilitators) and stakeholders' commitment to the process.

### **Identify topics of interest**

- As a group (or in small groups), establish an initial list of all possible topics for inclusion in the survey instrument.
- Focus on topics that can be addressed using survey data. For example, because surveys are self-reports and responses are subjective judgments, it is inappropriate to use survey data to examine the impact of a program. Topics that can be addressed by respondent opinions about the school or district climate, attitudes about a school policy or practice, reports of enrollments, the use of particular practices, or policy implementation are suited to measurement by surveys.
- Organize the list into survey topics and subtopics.
- Share the list with the stakeholder group and ask them to prioritize the topics of most interest to them and their organizations.
- Prioritize survey topics based on the group's interest and the intended uses of the survey.
- Think carefully about whether sensitive topics (for example, student sexual conduct or drug use) are appropriate for your potential respondents. Consult the appropriate sources concerning state, district, or program regulations regarding survey topics and the need for parental consent.
- Consider including a few survey items on respondent demographics (for example, sex, race/ethnicity, years of teaching experience, or educational attainment) that

can be used in the data analysis. Examining differences in answers from groups with different demographic characteristics may be interesting and useful. For example, survey data related to satisfaction with a district's maternity leave policy could be examined collectively or by men and women separately.

### **Develop a table of specifications**

- Draft a table of specifications, also called a survey blueprint, that shows each topic and subtopic to be included on the survey and group similar topics. The table of specifications used by the early childhood survey development project (see appendix B) has columns for the respondent, topic, description of topic, and notes.
- If more than one target population will be surveyed, list which target population or populations would answer items related to each topic or subtopic. For each topic or subtopic, add notes or suggested survey items to the table of specifications for use in later discussions.

### **Choose the format for survey administration**

- With the stakeholder group, review the benefits and difficulties of administering the survey by paper and pencil, online, or phone. If multiple survey formats are considered, ensure comparability of the survey across all formats so that the information gathered by one method is the same as the information gathered by another.
- Select a format suited to administering the survey to the target population. For example, paper-and-pencil surveys may be easily administered to students in a classroom because teachers can hand out and collect the survey during a class period.
- Consider which format would make the survey easiest for respondents to complete. For example, if a survey has items that should only be completed if a respondent answers another item in a particular way, an online format may be optimal because it can be designed so that only the items that respondent is supposed to answer show up on the survey.
- Determine the time and resources available for entering survey data. Some survey administration formats reduce the burden of data entry. For example, online surveys eliminate the need to enter survey data because the data is automatically entered while respondents complete the survey.

---

### **Box 3. Step 1 in practice: Identifying policy-relevant questions with the English Language Learner Alliance**

A group of educators formed the English Language Learner Alliance to discuss researching the effectiveness and integrity of implementation of programs for English learner students. A group member responsible for providing teachers and principals in her state with optional professional development for the education of English learner students expressed concerns that the lack of participation in this professional development program might limit educators' ability to adhere to the state's research-based guidelines and standards for educating English learner students. Accordingly, alliance members and researchers developed policy-relevant topics of interest for a survey of school leaders, such as: How does the school assign students to English learner programs? What certification and professional development requirements are there for teachers of English learner students?

---

## **Step 2: Identify relevant, existing survey items**

---

After topics of interest are identified and the table of specifications finalized, the team can begin developing survey items. Survey items are the questions or statements that make up the survey and are used to gather information. To save time, before brainstorming new survey items review available surveys for relevant, previously evaluated items. An example of this step is shown in box 4.

### **Identify existing surveys**

- Brainstorm all potential sources of survey instruments on your topic.
- Establish a set of key terms and conduct a web search to identify available surveys on the topic.
- Conduct additional searches for professional organizations, research organizations, or federal agencies that might have other surveys, research, or evaluation reports related to the topic.
- Review research reports for appendixes that contain survey instruments. If the report does not indicate whether others may use the survey, contact the authors.
- Set criteria for reviewing the identified reports and surveys (for example, evidence of reliability and validity) to judge whether they meet the team's needs. For example, surveys that have been published in academic journals or through professional organizations and that have been administered to populations similar to the target population will give the survey development team more confidence that the survey items will provide valuable data for the team's current purposes.
- Look at the origin of the survey, the survey authors and their organizations, the target population to be surveyed, and the intended audience for the results. If the survey does not exactly match the intended target population for the survey instrument being developed or if the authors present a bias toward the topic, make note of the differences and potential bias.

### **Identify relevant items from existing surveys**

- After gathering existing surveys, review the table of specifications and each survey item side by side.
- Mark any items related to each topic and subtopic identified in the table of specifications.
- Indicate whether the existing item or groups of items match the topics, or if the item stem (the portion of the item that indicates what a respondent is being asked to rate, for example, "I feel supported by my principal") or response options (for

---

### **Box 4. Step 2 in practice: Identifying existing survey items related to online learning**

Members of the Northeast Rural Districts Research Alliance identified online and distance learning as their topic of interest. After identifying their topics and subtopics, the team conducted a literature review and a web search using key terms (for example, online learning, distance education, virtual education, and surveys), and contacted other researchers and professional organizations with similar interests. Based on their professional networks, the team contacted the authors of recent relevant surveys. The team identified four relevant surveys and incorporated items from them into their table of specifications.

---

example, always, often, sometimes, never) will need to be modified for the new survey instrument.

- Gather all potential items by topic, keeping track of the sources of original survey items in case they need to be referenced later.

### **Step 3: Draft new survey items and adapt existing survey items**

---

The core survey development team now shifts to developing and adapting items for the survey. Multiple considerations must be kept in mind, several of which are listed in box 5 and table 1. An example of how this step was implemented is shown in box 6.

#### **Draft survey items**

- Use the notes in the table of specifications to help develop the survey items (see appendix B).
- Make sure that each topic and subtopic listed in the table of specifications is adequately addressed by survey items.
- Draft more items than will be on the final survey instrument—up to four times as many (DeVellis, 2011)—to ensure complete coverage of all survey topics.

#### **Adapt existing items**

- Decide which items will be adapted and brainstorm options. Some existing survey items will need language changes to be relevant for the target population, while others may need a more appropriate set of response options (for example, an open response option may be changed into a multiple-choice response option; see table 1).
- Ensure that the language and structure of adapted survey items match that of the whole survey.

---

### **Box 5. Considerations for item stems and response options**

When writing item stems and response options:

- Clearly word both item stems and response options and use simple, easy-to-understand language that matches the reading level of the target population.
- Avoid acronyms and jargon.
- Ensure the language and terminology are appropriate for the target population (for example, teachers, parents, or middle school students). If translation is necessary for the target population, work with a specialist to ensure the meaning stays the same from language to language.

When writing item stems, avoid:

- **Double negatives.** For example, don't write an item stem that says, "I do not feel supported by my principal," and then offer a response scale of "disagree" to "agree."
  - **Items that ask more than one question.** For example, "Please rate the extent to which you feel supported professionally and personally by your administrator." In this case, the respondent may not feel supported to the same degree professionally and personally.
  - **Language that "weights" the response.** For example, "I feel very much supported by my administrator." A better wording is "I feel supported by my administrator."
-

**Table 1. Common response option types and considerations**

Response option	Description	Considerations
Open response	Respondent is asked to type or write a response to a question.	Although providing the opportunity for respondents to write a response ensures coverage of all possible responses, the data provided can be difficult to code consistently for analyses. For example, the same response for an item that asks respondents to specify the age of the oldest child in their classroom may be recorded in several different ways, such as three, 3, 3-yrs-old, three years old. Whenever possible, open response survey items should be avoided for ease of data collection, restructuring, and interpretation.
Multiple choice	Respondent is presented with a set of possible responses and asked to choose one or more.	Multiple-choice options provide data that are easier than open response options to restructure and interpret; however, if the response options do not cover the universe of possible responses to the item, information may be lost. Providing an “other” option and allowing respondents to define what it means is one way to ensure information is not lost, though it presents the same need to restructure data as open response items. In general, response options such as “not applicable” or “don’t know” should be avoided because they may generate unnecessary missing data. These response options may be appropriate in some circumstances; for example, when trying to gauge the extent to which respondents are knowledgeable about a topic or to avoid forcing a response that may not be accurate.
Rating scales	Respondent is asked to rate a statement presented in the item stem on a scale.	Sometimes referred to as Likert scale items, rating scales are a good way to gauge respondents’ satisfaction with something, level of agreement with a statement, or frequency of behaviors. If a rating scale has an odd number of response options, the middle point (for example, “neither agree nor disagree”) may serve as a default option. Developers may consider offering an even number of scale responses to force respondents to take a position. To encourage respondents to carefully read and respond to each survey item, developers can word some items negatively and others positively. Because respondents may interpret numbers associated with each level of the scale as evaluative, it is best to leave the possible responses unnumbered.

Source: Authors’ construction.

### Align items with topics and subtopics

- While drafting new items and adapting existing items, revisit the overarching topics and subtopics to ensure that the data that will be generated by the survey instrument will address the topics.
- If items do not fit into a topic or subtopic, decide whether another topic or subtopic should be added to the table of specifications or whether the items should be deleted.

### Develop the analysis plan

- Create an analysis plan that maps the survey items to the topics and subtopics to ensure that the data provided by the survey will address every topic. A sample analysis plan is shown in appendix C.
- Think about what summary statistics (for example, frequencies, percentages, means, and standard deviations) and what form of presentation (for example, tables or figures) will best address the topics of interest and communicate survey results to multiple audiences. Add these ideas to the analysis plan.

---

### **Box 6. Step 3 in practice: Drafting and adapting survey items with early childhood educators**

After the Regional Educational Laboratory (REL) Northeast & Islands Early Childhood Education Research Alliance team developed and refined a table of specifications, it drafted survey items. At the outset, the team decided that open response options would be avoided and, to the extent possible, that multiple-choice and rating scale response options would be created. The notes in the table of specifications (see appendix B) were helpful in drafting survey items and developing response options. To reduce the time commitment for educators, REL Northeast & Islands researchers took the lead on drafting the survey items using the table of specifications as a guide. Throughout the item-writing process, the initial topic was revisited to ensure that the items would provide the information necessary to address those topics.

---

### **Step 4: Review draft survey items with stakeholders and content experts**

---

After the core survey development team drafts the items, it should obtain feedback from the stakeholder group on item wording and language, the method of survey administration (paper and pencil, web based, or phone interview), and the final number of items. An example of how this step was implemented is shown in box 7.

#### **Gather targeted survey feedback from stakeholders**

- If possible, hold in-person meetings with the stakeholder group to elicit feedback on the survey items.
- Provide ample time to allow stakeholders to fully engage with the survey items and one another. Document all questions, comments, and suggestions.
- If stakeholders' time is limited or in-person meetings are not feasible, consider other methods of eliciting feedback, such as biweekly phone meetings, webinar meetings, or email. A form used to solicit feedback for the early childhood survey development project is shown in appendix D.
- Review the stakeholder group's feedback and decide how best to incorporate it. Track revisions made to new or existing survey items.
- Mark disputed survey items for further review and testing during the cognitive interviews (see step 5). Include items for which consensus has not been reached on their importance, their wording, or their response options.

#### **Construct the survey**

- After incorporating the stakeholder group's feedback and revising items, construct the draft survey.
- Order and group items to minimize strain on respondents. Start with items that are interesting and easy to answer to warm respondents up to the survey. Remember that items at the end of the survey are more likely to be skipped, especially if the survey is long.
- Determine the approximate length of the survey. Consider the time it will take respondents to complete, the sensitivity and intensity of the items, and whether incentives are offered. Balance the need for information against the amount of time it will take respondents to complete the survey.
- With the stakeholder group, finalize the format of the survey. Whether paper and pencil, web based, phone interview, or a mix, the format should be appropriate for

---

**Box 7. Step 4 in practice: Reviewing draft items with stakeholders and experts in early childhood education**

After the table of specifications was finalized and feedback on item stems and response options was provided by stakeholders, Early Childhood Education Research Alliance researchers drafted an initial set of items to be reviewed by the early childhood stakeholders. Feedback was provided over the course of three one-and-a-half-hour phone meetings. When the allotted time was not enough to gather all the feedback needed for the development of the surveys, additional feedback regarding item wording, content, and the importance of each item for measuring the topics of interest was gathered using the form shown in appendix D, which was sent to stakeholders via email. Some stakeholders shared the form with their colleagues and asked them to provide additional feedback, thus expanding the feedback to the core team. The feedback was used to further refine survey items and delete items that team members felt were not essential.

---

the target population. For example, although web surveys can reduce administration, data entry, and analysis costs, they may not be appropriate for respondents with limited Internet connectivity. Choose the survey format easiest for respondents to use.

- While developing the survey, think about supporting materials, such as a letter of introduction and reminders, that must be developed along with the survey. Respondents often see the supporting materials prior to the survey. Supporting materials are addressed in part 2 of this series.

---

**Step 5: Refine the draft survey with pretesting using cognitive interviewing**

Cognitive interviewing is a method for identifying and correcting problems with surveys that involves administering a draft survey while interviewing the respondent to determine whether the survey items elicit the information their author intends (Beatty & Willis, 2007). This methodology can improve the clarity, relevance, length, and coverage of survey items. The goal is to reduce potential sources of confusion by identifying and correcting problems before administering a large-scale survey. An example of how this step was implemented is reported in box 8.

**Prepare for the cognitive interviews**

- Determine the appropriate number of cognitive interviews. Recent empirical research suggests that at least 15 cognitive interviews are needed to capture most of the issues in a survey (Blair & Conrad, 2011). However, depending on time and resources, the number of cognitive interviews may vary; REL Northeast & Islands conducted four to nine interviews per survey project.
- Identify and recruit cognitive interview participants who are similar to the target population.
- Develop a cognitive interview protocol that includes an overview of the cognitive interviewing process and its purpose, what is expected of the respondent during the session, and a list of questions on each survey item. Questions should be aimed at clarifying item language, ensuring that the response options are relevant and sufficient, and that the survey design is clear and easy to navigate (see appendix E for a sample protocol).

---

**Box 8. Step 5 in practice: Cognitive interviewing with online and distance learning educators**

The online and distance learning core survey team decided to conduct 60-minute cognitive interviews with educators. They used standardized probes to elicit feedback about the language, comprehensibility, relevance, and comprehensiveness of survey items. Cognitive interviews were conducted with four school staff members in the Greater Capital Region of New York recruited by core survey team members. The team used this information to further refine the survey items and survey length. After additional feedback from stakeholders, the team finalized the survey. Types of revisions made based on cognitive interviewing included: distinguishing between distance learning courses that were hosted by the responding school versus received by the school, clarifying that “core courses” are those required for a Regents diploma in New York, and using different font colors for the questions focused on online learning and distance learning.

---

- Decide how each cognitive interview session will be conducted (for example, whether the interview will occur in person, over the phone, or with the assistance of web-based technology). If possible, the interviews should be conducted using the questionnaire format that will be used in the survey (for example, if the survey is to be administered online, cognitive interview respondents should be asked to complete a web-based survey).
- Determine how participant feedback will be captured (for example, by the interviewers taking notes using paper and pencil or by the interview team making an audio or video recording of the session).
- Ensure participants have access to equipment needed to complete the survey (for example, paper and pencil, computer, or phone) and that the session is conducted at a time convenient to the respondent.

**Host the cognitive interviews**

- Create a relaxed atmosphere. Explain how the session will run and answer any questions prior to beginning the session.
- Allow interview respondents to complete the survey while the interviewer watches (paper-and-pencil or web-based administration) or listens (phone administration). For web-based interviews, use a computer program that allows the interviewer to watch as the participant manipulates the interviewer’s screen.
- Listen. Resist the urge to explain the purpose of a survey item or why it was designed a particular way while the respondents are taking the survey; instead, encourage respondents to verbalize their thinking and identify the cause of any confusion or hesitation (for example, are they confused by the question wording? Are they looking for a response option that is not there?).
- Note any components—supporting materials, instructions, or survey items—that cause respondents to hesitate or become confused or frustrated as they complete the survey. Ask follow-up questions about those components after respondents complete the survey.
- Ask for specific information regarding how to improve survey items, structure, and flow.
- Keep the session to the time indicated during recruitment and thank respondents for their time.

## Organize data and refine the survey items based on cognitive interview data

The core survey development team should organize the feedback from the cognitive interview sessions to help facilitate discussion of what changes are needed to the draft survey. It may be helpful to develop a codebook of the system used to categorize feedback.

- Create a system to analyze feedback across all interviews. Create specific codes related to the survey overall (for example, survey length, clarity, and relevance) or to item-by-item feedback (for example, item clarity, item relevance, and coverage of response options). A sample codebook used for the online and distance learning survey is provided in appendix F. Organize the comments according to the coded topics.
- After the interview feedback is discussed, determine how to revise the survey to address the concerns raised.
- Keep a record of the revisions based on the cognitive interview feedback.
- Update the analysis plan developed during step 3 to match the final survey items.
- Compile the data from the pretest administered during the cognitive interview and examine it to ensure that the mechanics of the survey are functioning properly (for example, that items appear in the right order).
- Create a revised version of the survey and conduct a final review with the stakeholder group.

### Using this guide

Educators can use this guide (the first in a three-part series) to work with other educators, researchers, and content experts to write or adapt survey items for a survey tailored for their use. The new survey can be refined using content-expert review and pretesting through cognitive interviewing. This process allows educators to leverage the expertise of different individuals within and outside of their organizations to ensure a high-quality product that meets the goals of the survey development team. The second guide in the series covers sample selection and survey administration (Pazzaglia et al., 2016a), and the third guide in the series covers data analysis and reporting (Pazzaglia et al., 2016b).

### Limitations of this guide

This guide has two limitations. First, while it provides educators with an overview of methodologies that can be used to develop survey instruments collaboratively in practical education contexts, those interested in piloting their surveys, conducting complex statistical analyses survey results, or creating measures made up of multiple survey items will need to seek additional resources. See appendix A for suggested resources.

Second, the guide does not provide all resources for pretesting survey items. Some activities associated with this process may require resources such as screen-sharing software, survey administration software, or technology to assist with the recording and transcription of cognitive interviews. Many of these resources can be obtained through freely available audio or video conferencing technologies via the web.

## **Appendix A. Additional survey development resources**

Suggested resources for sampling and survey administration are provided in this appendix, including references to textbooks and professional organizations and university departments with expertise in these topics.

### **Useful texts**

Czaja, R., & Blair, J. (2005). *Designing surveys: A guide to decisions and procedures* (2nd ed.). Thousand Oaks, CA: Sage.

Dillman, D., Smyth, J., & Christian, L. (2008). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). Hoboken, NJ: Wiley.

Fink, A. (2013). *How to conduct surveys: A step-by-step guide* (5th ed.). Thousand Oaks, CA: Sage.

Fowler, F. J. (2008). *Survey research methods* (4th ed.). Thousand Oaks, CA: Sage.

Groves, R. M., Fowler, F. J., Couper, M. P., & Lepkowski, J. M. (2009). *Survey methodology*. New York: Wiley.

Rea, L. M., & Parker, R. A. (2005). *Designing and conducting survey research: A comprehensive guide* (3rd ed.). San Francisco: Jossey-Bass Publishers.

Wright, P. V., & Marsden, J. D. (Eds.). (2010). *Handbook of survey research*. Bingley, UK: Emerald Group Publishing.

### **Other useful resources**

Dartmouth Office of Institutional Research: Survey development  
<http://www.dartmouth.edu/~oir/assessmenteval/tools/surveydev/index.html>

Duke Initiative on Survey Methodology at the Social Science Research Institute: Instrument design and development  
[http://www.dism.ssri.duke.edu/question\\_design.php](http://www.dism.ssri.duke.edu/question_design.php)

The University of Chicago Consortium on Chicago School Research (CCSR): *5 Essentials* and the *My Voice, My School* (teacher and student surveys)  
<https://uchicagoimpact.org/5essentials/survey>

## Appendix B. Sample table of specifications: Excerpt from the Early Childhood Education Research Alliance collaborative survey development project

Sometimes referred to as a survey blueprint, a table of specifications is a document that outlines the topics and subtopics to be included on the survey and serves as an outline for developing the survey items (table B1). Notes regarding possible survey items, response options, or other considerations are included in the last column of the table. The table of specifications in this appendix is an excerpt from one developed during the Early Childhood Education Research Alliance’s collaborative survey development project.

**Table B1. Sample table of specifications from the Early Childhood Education Research Alliance**

Respondent	Topic	Description	Notes
Administrator	Program type	Type of program, accreditation status	Type of program. Licensing definitions by state can be used.  Program accreditation status if applicable.  Other program information?
Administrator	Program characteristics	Program statistics such as number of educators, classrooms, and student–teacher ratio	Number of part-time and full-time educators employed in program or center.  Percent of employees who are new each year.  Number of classrooms in program or center.  Student–teacher ratio. Does the ratio depart from state requirements? If so, in what way?  Will differ by children’s ages.
Administrator	Program educator qualifications	Percent of staff with various credentials and participation in higher education and professional development	Percent of staff at center or school who have an early childhood certificate. Is certification a school or program requirement or a state requirement? If there are state requirements, do the school or program requirements depart from the state requirements? If so, in what ways do they depart from the state requirements?  Percent of staff at center or school who have obtained a bachelor’s degree or higher.
Administrator and teacher/educator	Child assessment policies	Policies related to use, assessment development, and leadership around assessments	Whether the program or school has any policies related to assessment use for early childhood students. May differ by children’s age; response options will vary.  Types of child assessments used in program or school. The questions will distinguish between assessments used for formative purposes and standardized assessments.  Frequency of assessment. The questions will distinguish between the frequency of formative assessments and standardized assessments. Respondents might respond that formative assessment is ongoing, while standardized assessments are used on an as-needed basis to determine whether children might need additional evaluation.
Administrator and teacher/educator	Child assessment use	Why assessments are administered and how the data are used	Purpose of the child assessments used in program or school. May differ by children’s age; responses will vary.  Ways the assessment information is used.

*(continued)*

---

**Table B1. Sample table of specifications from the Early Childhood Education Research Alliance** *(continued)*

<b>Respondent</b>	<b>Topic</b>	<b>Description</b>	<b>Notes</b>
Administrator and teacher/educator	Child assessment use	Administrator role in assessment use	Monitoring data from assessments—frequency and purpose. Types of decisions made on the basis of assessment results.
Administrator	Users of assessment data	Access to the assessment data	Whether it is the program's policy to share assessment data with the state (may be required when there is state funding), with children's kindergarten program, or with parents.

**Source:** Authors' construction.

---

## Appendix C. Sample analysis plan: Excerpt from the Northeast Rural Districts Research Alliance collaborative survey development project

Developing an analysis plan prior to calculating summary statistics (for example, frequencies, percentages, means, or standard deviations) ensures that the resulting information will help address the survey development team’s topics of interest. To develop an analysis plan, first map each survey item to each topic of interest. Second, think about what summary statistics, tables, and figures will be most useful for presenting survey results in a manner that will best address the topics of interest and will be accessible for multiple audiences. The analysis plan will continue to be refined as the survey items are revised and refined. An example of item-to-research-question mapping with potential analyses and presentation formats from the Northeast Rural Districts Research Alliance’s survey study is presented in this appendix.

**Table C1. Sample analysis plan: Survey item-to-research-question mapping from the Northeast Rural Districts Research Alliance**

Research question	Survey item	Potential analysis methods	Potential method of presentation
1a: How are rural and nonrural high schools in the Greater Capital Region of New York using online learning in the 2012/13 school year? Specifically, what is the number of student enrollments?	Items 1–4  Example item: For school year 2012/13, report the number of students in your school who were enrolled in online courses.	Mean; standard error	Table
1b: What percentage of students successfully complete the online courses?	Item 5  Example item: Of these enrollments, how many resulted in successful course completions with a passing grade?	Mean; standard error	Table
1c: What are the academic domains for which online courses are being utilized (for example, math, science, or foreign language)?	Item 6  Example item: For each box, report the number of online course enrollments in school year 2012/13 in each of the following academic areas.	Mean; standard error	Table; stacked bar graph
1d: What is the academic purpose for which students are taking these courses (for example, to recover credit or access advanced placement courses)?	Items 8–9  Example item: For each box, report the number of online course enrollments in school year 2012/13 in each of the following course categories.	Mean; standard error	Table; stacked bar graph
2: Why are rural and nonrural schools using online course options?	Item 7  Example item: How important were the following reasons for having online courses in your school in 2012/13? (Check one on each line).	Mean; standard error	Table; pie chart
3: What are the policies and practices these schools employ to monitor students enrolled in online courses?	Items 11–18  Example item: In 2011/12, did your school monitor student progress in online courses in any of the following ways (check one on each line).	Mean; standard error	Table

**Source:** Authors’ construction.

## Appendix D. Sample feedback form: Excerpt from the Early Childhood Education Research Alliance collaborative survey development project

The feedback form in this appendix was created for the Early Childhood Education Research Alliance’s collaborative survey development project. It allowed the survey development team to obtain input on item wording and importance across all stakeholders despite limited time to meet with the stakeholder group.

**Table D1. Sample survey feedback form from the Early Childhood Education Research Alliance**

**ECEA Standards Module: ADMINISTRATOR VERSION—Draft Items and Review Form**

Please review the following table of draft items and response options (column 2) for the administrator version of the Standards Module and provide your feedback in the last three columns of the table.

Column 3: How important is this item for measuring the topic in relation to standards implementation?

- 0 = not at all important, do not include item
- 1 = somewhat important, item may be useful
- 2 = important, item should probably be included
- 3 = very important, item needs to be included

Column 4: To what extent is this item clearly written?

- 0 = not clear at all
- 1 = somewhat clear
- 2 = very clear

Column 5: Comments

Please include any comments or further clarification if necessary.

Topic	Item	How important is this item for measuring the topic? (0–3)	To what extent are this item and response choices clearly written? (0–2)	Comments
Knowledge of the standards	Does your state have early learning standards? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Not sure</li> </ul>			
Knowledge of the standards	What age groups are covered by your state’s early learning standards? (Check all that apply.) <ul style="list-style-type: none"> <li>• Birth to 3 years old</li> <li>• 3–5 years old</li> <li>• 5–8 years old</li> <li>• Not sure</li> </ul>			
Knowledge of the standards	When was the latest version of your state’s early learning standards revised? <ul style="list-style-type: none"> <li>• Currently under revision</li> <li>• Within the past year</li> <li>• Within the past 3 years</li> <li>• Within the past 5 years</li> <li>• Over 5 years ago</li> <li>• Not sure</li> </ul>			

*(continued)*

**Table D1. Sample survey feedback form from the Early Childhood Education Research Alliance** *(continued)*

Topic	Item	How important is this item for measuring the topic? (0 3)	To what extent are this item and response choices clearly written? (0 2)	Comments
Knowledge of the standards	Did you participate in your state's early learning standards revision process? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Not applicable</li> </ul>			
Knowledge of the standards	In what way did you participate in your state's early learning standards revision process? (Check all that apply.) <ul style="list-style-type: none"> <li>• Attended a focus group or hearing</li> <li>• Was part of the revision team</li> <li>• Sent written feedback</li> <li>• Other: _____</li> </ul>			
Knowledge of the standards	Does the state provide you with a copy of the early learning standards? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Not sure</li> </ul>			
Knowledge of the standards	By what methods has the state provided you a copy of the early learning standards? (Check all that apply.) <ul style="list-style-type: none"> <li>• Email</li> <li>• United States Parcel Service Mail</li> <li>• Licensor provided me a copy</li> <li>• Available on state website</li> <li>• Other: _____</li> </ul>			
Knowledge of the standards	How familiar are you with your state's latest version of the early learning standards as they pertain to children from birth to grade 3? <ul style="list-style-type: none"> <li>• Very familiar</li> <li>• Somewhat familiar</li> <li>• Not very familiar</li> <li>• Not at all familiar</li> <li>• Not applicable</li> </ul>			

Source: Authors' construction.

## **Appendix E. Sample cognitive interview protocol from the Northeast Rural Districts Research Alliance collaborative survey development project**

---

A cognitive interview protocol is the step-by-step instructions for gathering feedback during cognitive interviews. A protocol should include an overview of the cognitive interviewing process and its purpose, expectations of the participant during the session, and a list of questions about the overall survey and its items. An excerpt of a cognitive interview protocol for the online and distance learning survey developed by the Northeast Rural Districts Research Alliance is presented in this appendix.

### **Welcome and introductions (5 minutes)**

- Hi. My name is \_\_\_\_\_ and I work as \_\_\_\_\_. Thank you for participating in this session.
- We are asking you to complete a survey that will be administered to public high schools in the Greater Capital Region of New York in the fall of this year. Your experience in your school is important to helping us make this project relevant for educators like yourself. After you complete the survey, I will ask you a series of questions about the survey you just completed.
- This survey is a draft. Since the primary goal of this session is to improve the survey, it is important that we get your honest feedback and impressions of both the overall survey and the survey items.
- Remember: This is not a test. There are no right or wrong answers. You may not know the answer to all of these questions. We just ask that you do your best in completing the survey.
- We are going to limit the session to an hour. (*Confirm end time with participant.*)
- Please take your time in completing the survey. You may feel a bit rushed because I am on the phone with you, but please complete the session at your pace.
- If at any point you would like to stop this session, please let me know.

### **Setting up the technology (2 minutes)**

- You should have received a link to an online collaboration site in an email. This will allow me to share my screen with you so that we can both see the survey as you complete it. I will not be able to see your screen. You will only be able to see mine. Please click on the link to open the session.
- This session will also be audio recorded to help me take notes. Any mention of your name or reference to your school will be removed from the audio recording. The audio will be securely stored so that those outside of the team will not be able to access it. I am going to start the audio recording now.
- I am now going to turn over control of my screen to you. Please test that you can move about the screen.

### **Obtaining consent (3 minutes)**

- Please take a minute to read the consent page. I am happy to answer any questions you may have about the consent page or the study in general.
- After you've read the consent page, please enter your name and indicate your choice by clicking either "I agree" or "I do not agree."

### Taking the survey (15 minutes)

- I'd like to begin by having you complete the online and distance learning survey. Please click the arrow at the bottom of the page to proceed to the first page of the survey and begin.
- I would like you to complete the survey as you would if I were not with you, but I would like you to think out loud while completing the survey. For example, if the question says, "What is your favorite color?" you might say, "I used to like red when I was young, but now it is blue, so I would pick blue." Then make your selection.
- While you may ask me questions, I may or may not answer them. The intent of this session is to see how people would take the survey without someone watching. If you ask questions that I do not answer, I will answer them after you have completed the session.

**Prompts for use during survey taking.** During the session, mark any questions where the respondent was confused, hesitated, or did not respond to the question. Use the conditional probes (CP) for follow-up during the item response section. If the respondent responds "other" to any of the questions, ask the person to enter text or at minimum verbalize what they would enter in the "other" category.

- *General probe.* Please remember that there are no right or wrong answers. Do your best.
- *Sticking point.* At this point, what would you do if you were not taking the survey with me listening?
  - Additional probe: If the participant's response is anything *but* "I'd close the survey," say, "Then why don't you try that?"
  - Additional probe: If the participant's response is "I would quit the survey at this point," ask the participant to skip the question and move to the next question. Note that question for follow-up.
- *Think-aloud reminder.* I know this may be uncomfortable, but please try to think aloud while answering the survey items.

### Post-survey follow-up: Overall perceptions (10 minutes)

- Congratulations on completing the survey! How did that feel for you?
- Now I'd like to ask you a few questions about your overall impressions of the survey. Then we will move to talking about individual survey items.

### Relevance (extent to which survey items tap into appropriate policies and practices)

- On a scale of 1–10 (10 = most relevant), how relevant were the survey questions to online and/or distance learning in your school? Tell me what influenced you to choose that number.
  - CP: What do you think were the most relevant components?
  - CP: What parts were irrelevant to your school?

### Length (number of items, time to complete)

- In general, what did you think about the length of the survey?
- On a scale of 1–10 (10 = most successful), how successful did you feel in completing the survey?
  - CP: If less than 5, which parts of the survey posed the most difficulty for you?
  - Make note of these questions and return with a CP during the *Questions about specific items* section.

- If you were completing this survey on your own, how many minutes do you think you would spend on it?
- Based on your experience, how willing will school staff members in positions similar to yours be to complete this survey?

### **Flow (survey format, grouping and ordering of items)**

- What did you think about the flow of the survey? Did any of the questions seem to not fit in with the others?
  - *CP: (Only if the respondent was not satisfied with the order) Would you suggest any reordering of the questions?*
- Thinking about the basic survey format, did you feel like you were successful in being able to use the survey?
  - *CP: If no, please explain.*

### **Questions about specific survey items: Standardized probes (20 minutes)**

- Now I'd like to ask you some specific questions about the survey content. As we go to each item, feel free to take a moment to reread and refamiliarize yourself with the survey item.
- My questions will focus primarily on the clarity, relevance, and coverage of the survey items. I am going to scroll through the survey to focus on certain survey items. If there are items that we do not touch on that you would like to give feedback on, I will give you that chance at the end of the session.

### **Let's start with the overview and instruction pages.**

Allow time for participant to flip through the four Overview and Instructions pages.

- *Coverage: Did the overview and instructions cover what you needed to know?*
  - *CP: If no, what additional information would have been helpful to you?*
- *Clarity: What, if anything, was confusing about any of these sections?*
- *Coverage: What, if anything, did you feel was unnecessary in the overview or instructions?*
- *Clarity: Let's look specifically at the part about the school year: was it clear to you what the timeframe of the survey was?*
  - *CP: If no, please explain.*
- *Clarity: After reading all of the instructions, was it clear what was meant by online courses and distance learning courses?*
  - *CP: If no, please explain.*
- *Clarity: Was it clear what the difference is between online courses and distance learning courses?*

**Let's start with questions 1 and 2:** In school year 2012/13 were any students in your school enrolled in online courses? In school year 2012/13 were any students in your school enrolled in distance learning courses?

- *Clarity:* After reading these questions, was it clear to you whether your school had online courses or distance learning courses?
  - *CP:* If no, please explain.
- *Clarity:* Was there anything confusing about these two questions?
  - *CP:* If yes, do you have any suggestions to make it clearer?

**Continue this process for remainder of survey questions.**

#### **Wrap-up/thank you (5 minutes)**

- Thinking about your experience taking this survey, what are two or three main suggestions that you would like the survey design team to consider?
- Do you have any additional thoughts that you would like to add?
- Thank you for your participation. Do you have any questions for me?

#### **Additional conditional probes**

(Only to be used for questions noted while the respondent was taking the survey.)

- When you were responding to this question, I noticed that you seemed to (...hesitate, spend a while on it, change your answer). Tell me what you were thinking about while answering it.
  - *CP:* Was there something about the question that was unclear to you?
  - *CP:* Was there a response option that you were looking for?
  - *CP:* Did you not know the answer to the question?
  - *CP:* Was the question too difficult to complete?
- When you were taking the survey, I noticed you skipped this question.
  - *CP:* Can you tell me what made you decide to skip this?
  - *CP:* Was there a response option that you were looking for?
  - *CP:* What can we do to improve this question?

## **Appendix F. Sample cognitive interview analysis codebook from the Northeast Rural Districts Research Alliance collaborative survey development project**

---

A codebook is a record of the codes used to categorize feedback gathered during cognitive interviewing. A sample from a codebook used with the online and distance learning survey developed by the Northeast Rural Districts Research Alliance through the collaborative survey development process is presented in this appendix.

### **Codebook overview**

Through qualitative analysis of cognitive interview data, the core survey team seeks to explore respondents' overall perceptions of the survey; identify and revise items that lack clarity, relevance, flow, or coverage; and limit nonresponse bias and nonsampling error in the large-scale administrations of the final surveys.

Data are assigned codes (described in the following text) based on the following coding hierarchy: overall or item specific, topical area of the feedback (for example, relevance, length, flow, or clarity), and classification (as support, issue or question, or suggestion for improvement). If data are not covered by the predeveloped coding hierarchy, they are marked "other."

### **Coding: Overall perceptions of the survey**

Protocol questions targeting respondents' overall perceptions are in the "Overall perception" and "Wrap-up" sections of the cognitive interview. Responses to these questions as well as information provided in the "think aloud" exercise will be categorized into three topical areas: relevance, length, and flow. Feedback that does not fit into one or more of the topical categories will be coded as "overall perceptions—other." To assist with analysis, responses coded into one of the topical areas will then be coded as one of the following subcategories: "support" for survey, "issue or question," "suggestion for improvement," or "other." The three topical categories are shown in tables F1–F3 along with subcategories and examples from the cognitive interview record.

### **Coding: Specific survey items**

Data coded for a survey item will reflect both information from the "think aloud" portion and the item-by-item follow-up section of the cognitive interview protocol. Protocol questions pertaining to specific survey items include both standardized and conditional probes. Responses will be categorized into three topical areas: clarity, coverage, and relevance. For the purpose of this project, these topics are defined as follows:

- **Clarity.** The extent to which the survey item is readable and understandable to the respondent.
- **Coverage.** The extent to which the survey item and its response options are sufficient to cover the range of respondent experiences and situations.
- **Relevance.** The extent to which the survey item and its response options are pertinent to the topic and tap into appropriate policies and practices.

---

**Table F1. Relevance: The extent to which the survey and its items tap into appropriate policies and practices**

Subcategory	Example
Support	This survey covers exactly what we are doing at our school. I think it is very relevant.
Issue or question	It is sort of relevant for us, but I wasn't sure about the part that asked about monitors. I am not sure that makes sense for my school.
Suggestion for improvement	The survey questions were relevant for me, but I might add more options to some of the questions to make it work for all of the schools in my district.

Source: Authors' construction.

---

---

**Table F2. Length: The number of items and the time taken to complete the survey**

Subcategory	Example
Support	I think it went quickly. I had no problem with the length.
Issue or question	I am not sure if people in schools will take the time to complete all of these questions with their busy schedules.
Suggestion for improvement	It would have gone more quickly for me if I knew what specific information I would need to complete the survey. So maybe you could add that information to the directions.

Source: Authors' construction.

---

---

**Table F3. Flow: The survey format and grouping and ordering items**

Subcategory	Example
Support	The questions made sense to me and seemed to be in the right order.
Issue or question	I couldn't get the survey to let me go to the next page several times. I couldn't figure out how to make it work.
Suggestion for improvement	Maybe you could put the questions about the enrollment at the end so that I could then go and look up the information after I completed the rest of the survey.

Source: Authors' construction.

---

Responses that cannot be coded into one of these three areas will be coded as “question X—other.” To assist with analysis, responses coded to one of the topical areas will be further coded into subcategories, including “support” for item, “issue or question,” “suggestion for improvement,” and “other.” Codebook sample entries for the overview and instruction pages are shown in table F4; sample entries for an individual item are shown in table F5.

**Table F4. Overview and instruction pages**

Category	Subcategory	Example
Clarity	Support	I didn't find anything confusing about what was presented.
	Issue or question	I wasn't exactly sure what an Iowa school number is so I decided to leave it blank.
	Suggestion for improvement	Maybe say more upfront that blended learning should not be included. It wasn't clear to me if I should include those courses.
Coverage	Support	These pages made sense to me. I covered what I needed to know.
	Issue or question	So we use Plato. I am not sure if my courses count for this survey.
	Suggestion for improvement	I think the instructions were too long. I would suggest cutting them down and just cover the basics.
Relevance	Support	The instructions made sense for how we do online learning at my school.
	Issue or question	These instructions don't seem to address how we do online learning. I am not sure if I would fill out the survey after reading these.
	Suggestion for improvement	I might make it clearer that all schools are supposed to fill this out no matter how many online courses you have. Maybe underline that.

Source: Authors' construction.

**Table F5. Single item: Question 1: In school year 2012/13, were any students in your school enrolled in online courses?**

Category	Subcategory	Example
Clarity	Support	This question was pretty straightforward.
	Issue or question	Does this include students who are enrolled part-time in the local community college as well?
	Suggestion for improvement	Maybe you could repeat the definition of online learning here to make it clear what you are covering.
Coverage	Support	This question has what I need to answer it.
	Issue or question	What if I am not sure if we offer these?
	Suggestion for improvement	I would add "not sure" as an option here.
Relevance	Support	This question makes sense for our school.
	Issue or question	Hmm ... I am not sure if this is relevant for us since I don't know what type of online courses we offer.
	Suggestion for improvement	Maybe indicate that you should not count blended learning here.

Source: Authors' construction.

## References

- Beatty, P. C., & Willis, G. B. (2007). Research synthesis: The practice of cognitive interviewing. *Public Opinion Quarterly*, 71(2), 287–311.
- Blair, J., & Conrad, F. G. (2011). Sample size for cognitive interview pretesting. *Public Opinion Quarterly*, 75(4), 636–658.
- DeVellis, R. F. (2011). *Scale development: Theory and applications (applied social research methods)*, (3rd ed.). Thousand Oaks, CA: Sage.
- Fink, A. (2013). *How to conduct surveys: A step-by-step guide* (5th ed.). Thousand Oaks, CA: Sage.
- Hamilton, L., Halverson, R., Jackson, S., Mandinach, E., Supovitz, J., & Wayman, J. (2009). *Using student achievement data to support instructional decision making* (NCEE No. 2009–4067). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. <http://eric.ed.gov/?id=ED506645>
- Knapp, M. S., Swinnerton, J. A., Copland, M. A., & Monpas-Huber, J. (2006). *Data-informed leadership in education*. Seattle, WA: University of Washington, Center for the Study of Teaching and Policy. <http://eric.ed.gov/?id=ED494198>
- Pazzaglia, A. M., Stafford, E. T., & Rodriguez, S. (2016a). *Survey methods for educators: Sampling respondents and survey administration (part 2 of 3)* (REL 2016–160). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. Retrieved from <http://ies.ed.gov/ncee/edlabs>.
- Pazzaglia, A. M., Stafford, E. T., & Rodriguez, S. (2016b). *Survey methods for educators: Analysis and reporting of survey data (part 3 of 3)* (REL 2016–164). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northeast & Islands. Retrieved from <http://ies.ed.gov/ncee/edlabs>.
- U.S. Department of Education, Office of Planning, Evaluation, and Policy Development. (2010). *Use of education data at the local level from accountability to instructional improvement*. Washington, DC: Author. <http://eric.ed.gov/?id=ED511656>

## The Regional Educational Laboratory Program produces 7 types of reports



### **Making Connections**

Studies of correlational relationships



### **Making an Impact**

Studies of cause and effect



### **What's Happening**

Descriptions of policies, programs, implementation status, or data trends



### **What's Known**

Summaries of previous research



### **Stated Briefly**

Summaries of research findings for specific audiences



### **Applied Research Methods**

Research methods for educational settings



### **Tools**

Help for planning, gathering, analyzing, or reporting data or research