

Guide to Conducting a Needs Assessment for American Indian Students

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Guide to Conducting a Needs Assessment for American Indian Students

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This guide was designed to help state and local education agencies conduct needs assessments to better understand the strengths, challenges, and needs unique to schools serving American Indian students. It includes surveys developed collaboratively with communities that serve American Indian students to reflect the most relevant topics. Using results from these surveys, the guide provides examples of how to target and monitor improvement efforts that reduce gaps in outcomes between American Indian students and other students.

CONTENTS

Introduction	1
Why administer these surveys?	3
Identifying research questions	4
Administering the surveys	6
Analyzing the survey data	7
Step 1: Reviewing response rates	7
Step 2: Calculating results	7
Step 3: Interpreting survey findings	13
Communicating the results and developing an action plan	16
Implementing and monitoring the action plan	17
References	Ref-1
Appendix A. Needs Assessment Survey for American Indian Students: Teacher Version	A-1
Appendix B. Needs Assessment Survey for American Indian Students: Administrator Version	B-1
Appendix C. Survey development process	C-1
Appendix D. Overview of literature	D-1
Appendix E. Sample survey correspondence	E-1
Appendix F. Additional information on response rates	F-1
Boxes	
1 Calculating the percentage of responses in each category for individual survey items in Microsoft Excel	8
2 Creating and interpreting a stacked bar chart in Microsoft Excel	10
3 Calculating median values in Microsoft Excel	11
4 Analyzing responses to open-ended survey items	12
Figures	
1 Needs assessment and improvement cycle	1
2 Sample timeline for the needs assessment and improvement cycle	2
3 Aligning research questions to methods and findings: Example 1	14
4 Aligning research questions to methods and findings: Example 2	14
5 Aligning research questions to methods and findings: Example 3	15
C1 Stages of the development of the Needs Assessment Surveys for American Indian Students	C-2

Tables

1	Survey topics	2
2	Survey items that may need to be adapted to the local context	5
C1	Classical test theory analyses of the Needs Assessment Survey for American Indian Students	C-3
C2	Factor loadings for the Needs Assessment Survey for American Indian Students	C-4
C3	Items flagged during analyses	C-5

INTRODUCTION

American Indian communities bring a deep sense of connection, relationships, and knowledge to their children’s education (National Indian Education Association, 2016). However, education research has shown some persistent differences in student outcomes between American Indian students and other students.

Closing gaps in achievement, attendance, and postsecondary readiness between American Indian students and other students is a high priority for stakeholders in the Regional Educational Laboratory Central Region, such as the North Dakota Department of Public Instruction. American Indian students trail other students in key outcomes. For example, in 2019, 19–24 percent of American Indian students in grade 4 scored proficient in reading and math on the National Assessment of Educational Progress, compared with 36–41 percent of other students (U.S. Department of Education, n.d.).

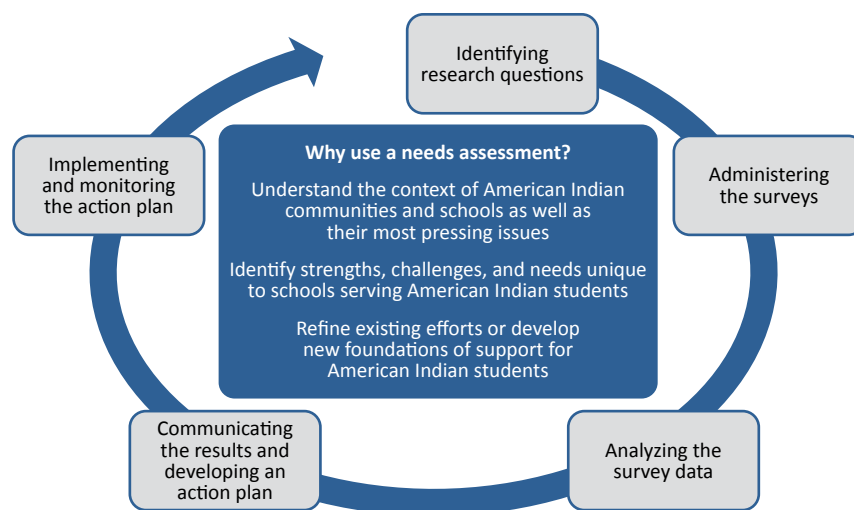
This guide provides state and local education agencies with a technically sound and culturally appropriate means to collect data to better understand the strengths, challenges, and needs unique to schools serving American Indian students. It includes two surveys, one for teachers (see appendix A) and one for administrators (see appendix B), as well as guidance on identifying research questions, administering the surveys, analyzing the survey data, communicating the results and developing an action plan, and implementing and monitoring that plan (figure 1). Agencies can use the results to refine existing efforts or develop new foundations of support for American Indian students.

The surveys cover nine topics, which are shown in table 1.

Appendix C provides information about the survey development process, and appendix D provides an overview of the literature on which the surveys were based. Appendix E offers a sample letter that could be used as part of survey dissemination, and appendix F details how to examine survey response rates.

State and local education agencies that are interested in implementing a needs assessment should identify participants with experience in school or district improvement and American Indian education. Agencies might also find it helpful to engage staff who have a basic understanding of spreadsheet software such as Microsoft Excel. Participants should plan on spending 20–40 hours on each step of the improvement cycle, though the

Figure 1. Needs assessment and improvement cycle



Source: Adapted from Corbett and Redding (2017).

Table 1. Survey topics

Topic area	Content summary	Item numbers
Culturally responsive instruction	Measures the degree to which classroom practices are inclusive of American Indian perspectives.	3a–3k
State-specific American Indian instruction	Addresses the inclusion of focused American Indian content specified in multiple statewide initiatives across the country.	4a–4f
School climate	Includes a range of items that measure the degree to which a school’s culture builds a sense of community, respect, and inclusion.	5a–5h
Equity	Measures how schools equitably promote access to materials, resources, and instruction and provide a positive learning environment to all students.	6a–6f
Student attendance	Focuses on the degree to which schools identify and remediate barriers to student attendance.	7a–7f
Bullying	Addresses how schools work to promote a safe learning environment.	8a–8e
Addressing mental/behavioral/social-emotional well-being	Measures the degree to which schools employ practices to support students’ social-emotional health.	9a–9h
Professional development	Encompasses the identification and implementation of professional learning opportunities for educators serving American Indian students.	10a–10h
Teacher recruitment and retention (administrator survey only)	Seeks to understand the degree to which schools serving American Indian students are implementing educator recruitment initiatives (administrator survey only).	11a–11d

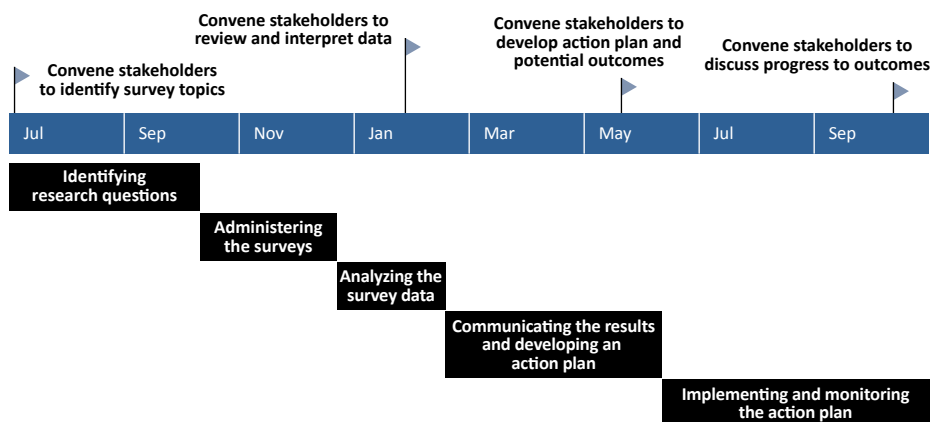
Note: See appendix A for the complete teacher survey and appendix B for the complete administrator survey.

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

number of hours could be substantially larger depending on the extent of the improvement effort and education agency needs (figure 2 shows a sample timeline). Additional time may also be required to communicate with educators to encourage response to the needs assessment surveys.

The cycle represented in figure 1 provides a general overview of a typical needs assessment and improvement cycle. Several documents were considered when developing this cycle. For further information and guidance on needs assessments and education improvement, see Corbett and Redding (2017) and U.S. Department of Education (2016).

Figure 2. Sample timeline for the needs assessment and improvement cycle



Note: The figure represents an example timeline; the length of each task may vary depending on the extent of the improvement effort, resources, and agency needs.

Source: Adapted from The Education Trust (n.d.).

WHY ADMINISTER THESE SURVEYS?

Schools serving American Indian students must identify areas in which improvements can be made while leveraging schools' strengths to improve student success. When teachers and administrators understand where their schools or districts are succeeding, they can better target areas for improvements. Strengths and needs vary across tribal communities. Overall, though, American Indian communities can bring a deep connection and important knowledge to their children's education (National Indian Education Association, 2016). In addition, American Indian worldviews, which often demonstrate an emphasis on cooperative learning and reflection (Pewewardy, 2002), have the potential to strengthen students' education and learning.

However, contextual factors such as social-emotional health and poverty compound the needs of American Indian students. For example, American Indian students have higher rates of substance abuse and suicide than the national average and are more likely to live in poverty (Center for Native American Youth at the Aspen Institute, n.d.). In addition, American Indian students lag behind other students in achievement, attendance, and postsecondary readiness (National Center for Education Statistics, 2012b; National Indian Education Association, 2016). Compared with White students, American Indian students have, on average, higher dropout rates (15 percent compared with 7 percent) and lower high school completion rates (75 percent compared with 91 percent; DeVoe & Darling-Churchill, 2008).

The teacher and administrator surveys in this guide cover a range of topics related to student success. Educators could integrate the surveys into a larger evaluation system to identify and understand the context of American Indian communities and schools as well as their most pressing issues. Education and community leaders could use issues identified through the surveys to guide efforts to improve student outcomes and offer academic and social support. The surveys can also identify schools' and districts' strengths and challenges (which can be leveraged to catalyze education change for American Indian students; Corbett & Redding, 2017), inform action plans, and indicate progress toward education benchmarks (especially when surveys are administered across multiple years). For example, if the surveys show that one of a school's strengths is providing culturally responsive instruction and that one of its challenges is implementing state-sponsored American Indian instruction, the school could build on its commitment to culturally responsive instruction to begin professional development in state-specific resources.

IDENTIFYING RESEARCH QUESTIONS

Before administering the needs assessment surveys provided in this guide, it is necessary to identify research questions and adapt the surveys to the local context.

First, decide the focus of the data collection efforts. Work with stakeholders to identify the topics that are most pressing for the school or district being studied and use those topics to develop research questions. For example, an education agency that is interested in culturally responsive practices might ask, “To what extent do teachers report using instructional practices and a curriculum that incorporate the culture of their American Indian students?” Other possible research questions include:

- To what extent do teachers and administrators report having sufficient policies and practices to address bullying?
- Has the school climate become safer and more positive since the implementation of new practices related to school climate?
- To what extent is student attendance a concern?
- Do educators report using policies and practices to appropriately support students’ social-emotional health?

Second, identify the survey sections and items that address your research priorities. For example, the research question “To what extent do teachers and administrators report having sufficient policies and practices to address bullying?” could be addressed by considering teachers’ and administrators’ responses to survey items such as item 8a, “To what extent is your school’s or district’s bullying prevention policy effective?” The research question “Do educators report using policies and practices to appropriately support students’ social-emotional health?” could be addressed by looking at survey items related to social-emotional health, such as item 9c, “To what extent does your school or district use culturally responsive behavioral interventions such as trauma-informed practices or restorative justice?”

Also consider how much time respondents have to take the survey. The full surveys take approximately 15–20 minutes to complete. Including only the sections or items relevant to your research questions will reduce the amount of time needed.

Finally, adapt the wording of survey items to the local context. For example, the surveys use the term *American Indian*, but other jurisdictions might use the term *indigenous peoples*, *Native American*, or *Native* or a specific tribal name. When adapting items, be careful not to make substantive changes that would affect how respondents might interpret the intent of the item. Table 2 lists survey items that may need to be changed.

Table 2. Survey items that may need to be adapted to the local context

Item number	Wording that can be adapted
1d, 3a–3c, 3e–3k, 5f, 10a, 10b, 10e–10h, 11 (teacher survey only), 12 (administrator survey only), conclusion	The term <i>American Indian</i> can be changed, depending on local preferences (for example, to <i>indigenous peoples</i> , <i>Native American</i> , or <i>Native</i> or a specific tribal name).
3d, 3h	The term <i>tribal</i> can be changed to accommodate local context if there is no local tribe. For example, the item can ask about “the local American Indian community.”
4a–4f	This section refers to American Indian curriculum and standards developed in North Dakota. The North Dakota Native American Essential Understandings (NDNAEU) describe the culture and history of American Indians in the state that all students should know. Other states may have similar projects, which would allow for these items to be used with changes to any North Dakota–specific terminology. Otherwise, these items can be omitted.
7f	The response choices can be changed, depending on the presence of a local tribe (for example, omit “tribal support” and “tribal council”).
9a	The response choices can be changed to include other examples of cultural supports.
9d	“Local tribes” can be removed if there are no local tribes.
10d	“Tribal members/leaders” can be removed if there are no local tribes.
10f–10h	The response choices can be changed to remove or alter the term NDNAEU.

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

ADMINISTERING THE SURVEYS

This section covers three aspects of survey administration that state and local education agencies should consider.

First, determine how and when the survey will be administered. Using an online survey platform or distributing paper copies with no personally identifiable information allows responses to be anonymous, meaning that they are not linked to respondents' names, or confidential, meaning that they are linked to respondents' names but that names are secured and not reported. Anonymity or confidentiality could lead to more candid responses. If you use an online survey platform, ensure that it is user friendly (for example, ensure that the font and point size make the text readable and that respondents can advance easily from page to page).

Try to administer the survey when respondents do not have conflicting school events (for example, parent-teacher conferences or state testing) or students in the classroom (for example, on professional development days or before the school year begins). Then set a timeline for following up with teachers and administrators to encourage them to complete the survey. Consider leaving the survey open until you have received a sufficient number of responses. The National Center for Education Statistics (2012a) recommends that researchers aim to achieve a response rate of 85 percent.

Second, consult appropriate state, local, and tribal policies regarding informed consent so that you can provide potential respondents with documentation on how the data collected will be used and on the possible risks and benefits of completing the survey. For additional information, consult the Protection of Human Subjects Research Coordinator at the U.S. Department of Education (2020, <http://www2.ed.gov/about/offices/list/ocfo/humansub.html>).

Third, decide what to say to potential respondents when inviting them to participate in the survey. The initial communication with teachers and administrators should emphasize that their responses will be anonymous or confidential and that any reports based on the survey data will summarize findings across all respondents and will not contain personally identifiable information. Stressing the importance of the surveys in guiding planning for and implementation of targeted supports for American Indian students might also boost response rates. If you use an online survey platform, check that the survey invitations provide the correct link. See appendix E for a sample letter of correspondence with potential respondents.

ANALYZING THE SURVEY DATA

The research questions selected earlier will guide the data analysis, which consists of three steps. Figures 3–5, which follow the explanation of the steps, provide examples of the analysis methods, findings, and potential actions associated with sample research questions.

Step 1: Reviewing response rates

Calculate the percentage of teachers or administrators who respond to the surveys and to each survey item. Low response rates could mean that the survey results do not reflect the views of all educators in a school. If response rates are lower than 85 percent, try to identify why (for example, lack of buy-in, technical issues, fatigue, or time conflicts) and address the issue (for example, by following up with educators or resurveying when teachers have better availability). For additional guidance on addressing low response rates, see National Center for Education Statistics (2012c) and Pazzaglia et al. (2016).

Low response rates could mean that the data are not representative because unmeasured differences could exist between respondents and the population of potential respondents. Compare the background characteristics of respondents with those of the population of potential respondents. If both groups have similar distributions of subgroups, such as the type of school in which they are employed (elementary school, middle school), the data may be representative. You could draw conclusions specific to the educators who responded but might not be able to draw definitive conclusions about the population of educators in your school or district. See appendix F for additional information on examining response rates and addressing low response rates.

Step 2: Calculating results

The data analyses you use will be guided by the specific area of interest aligned with the research questions you identified. This may mean that you will examine the responses to individual items, or you may wish to aggregate the items to summarize responses to a topic area as a whole. Results from these analyses can be used to generate additional questions to discuss with stakeholders and to make actionable decisions about additional resources, improvement efforts, and changes to monitor.

For example, research questions with a deep focus on a single topic (such as bullying or attendance) might mean examining the percentage of responses in each category for individual survey items (see box 1 for guidance on calculating those data in Microsoft Excel). Each topic in the surveys contains a set of items with the following response categories: “to no extent,” “to a minimal extent,” “in the middle,” “to some extent,” and “to a great extent.” Depicting the distribution of responses visually in a bar chart is a common method for analyzing survey data (see box 2 for guidance on creating a stacked bar chart in Microsoft Excel). This focused look at individual items in the topic area will allow you to gain an understanding of the range of factors that constitute that area.

Conversely, for broader research questions that ask for relative strengths and challenges across multiple topics, you might calculate the median responses for each topic area (see box 3 for guidance on calculating median values in Microsoft Excel). For example, if you administer the entire survey, you might want to gain a general understanding of how respondents’ ratings were higher in certain areas relative to other areas. Because data from this survey are categorical, calculating the median as a method for understanding the center point of the data is the statistically appropriate technique for summarizing responses across items within a topic.¹ But do not

1. Categorical data are values that are placed in discrete categories, such as those that would result from this survey. For this survey the responses are placed into the scale categories of “to no extent,” “to a minimal extent,” and so on. This is opposed to continuous

calculate medians across different topics because the results will be difficult to interpret. For example, a single median value for items related to bullying, attendance, and recruitment and retention has no clear construct in which to frame the results. Similarly, do not generate medians across items with different response scales; doing so will skew the results. For example, a median should not be generated for items with a frequency response scale (“daily,” “weekly”) or an extent response scale (“to no extent,” “to a great extent”). Doing so would result in uninterpretable statistics.

Responses to open-ended items can complement quantitative information to deepen stakeholders’ understanding of the results. Open-ended items are included in many of the survey topics to allow respondents to provide more contextual information (see box 4 for guidance on analyzing responses to open-ended survey items).

For additional details on analyzing survey data, see National Center for Education Statistics (2012a) and Pazzaglia et al. (2016).

Box 1. Calculating the percentage of responses in each category for individual survey items in Microsoft Excel

To use Microsoft Excel, the most common spreadsheet software, to calculate the percentage of responses in each category for individual survey items, follow these four steps:

1. Beginning in the second column, enter the survey items in the first row of the spreadsheet. Then, beginning in the second row, enter the response categories in the first column. Ensure that all the items use the same response categories. (See box table 1 for an example using teachers’ responses to several items focused on social-emotional health.)
2. Enter the number of responses in each category for each item in the appropriate cells.

Box table 1. Example of a Microsoft Excel spreadsheet showing the number of responses in each category for items related to social-emotional health in the Teacher Version of the Needs Assessment Survey for American Indian Students

	A	B	C	D	E
1		To what extent...			
	Response	9c) does your school use culturally responsive behavioral interventions such as trauma-informed practices or restorative justice?	9d) does your school engage the community/local tribes in an attempt to connect youth to culturally responsive mental and physical health care services?	9e) do you implement or does your school have programs to support students’ noncognitive skills (for example, motivation, resilience, curiosity)?	9f) does your school partner with parents to understand what might cause students’ stress or trauma (for example, family unemployment, relationship with peers, changes in living situation)?
2	To no extent	62	42	10	20
3	To a minimal extent	60	56	46	56
4	In the middle	36	40	38	58
5	To some extent	36	46	74	46
6	To a great extent	6	16	34	20

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

data such as weight or height, which have a range of possible values, including fractions or decimals. A median value is an appropriate method for calculating the center point in categorical data that result from these survey items. The median provides a summary value that can be used to evaluate relative strengths and weaknesses when examining multiple topic areas.

3. Copy and paste the survey items into the first empty columns to the right. Next, in row 7, calculate the total number of responses for each item. For example, in column F, type =SUM(B2:B6), which will generate the total number of people who responded to the first survey item. Then in each cell below the survey item text, enter a formula that divides the number of responses in each category for each item. After all the formulas have been entered, highlight the cells and change the number format to *Percentage*. In the example in box table 2, which is a continuation of the columns in box table 1, the formula for the percentage of responses in the “To no extent” category for the first survey item is =B2/F7, which equals 31%.

Box table 2. Example of a Microsoft Excel spreadsheet showing the percentage of responses in each category and the formulas used to calculate them (in brackets) for items related to social-emotional health in the Teacher Version of the Needs Assessment Survey for American Indian Students

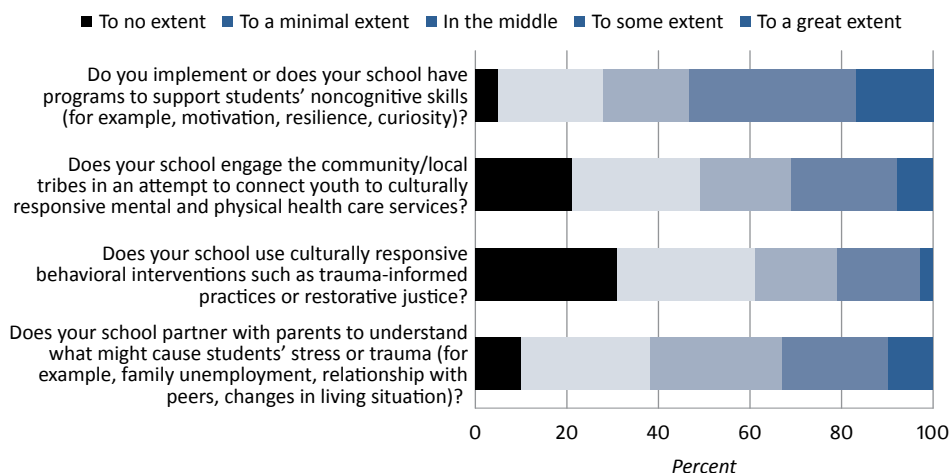
	A	F	G	H	I
1		To what extent...			
	Response	9c) does your school use culturally responsive behavioral interventions such as trauma-informed practices or restorative justice?	9d) does your school engage the community/local tribes in an attempt to connect youth to culturally responsive mental and physical health care services?	9e) do you implement or does your school have programs to support students' noncognitive skills (for example, motivation, resilience, curiosity)?	9f) does your school partner with parents to understand what might cause students' stress or trauma (for example, family unemployment, relationship with peers, changes in living situation)?
2	To no extent	[=(B2/F7)] 31%	[=(C2/G7)] 21%	[=(D2/H7)] 5%	[=(E2/I7)] 10%
3	To a minimal extent	[=(B3/F7)] 30%	[=(C3/G7)] 28%	[=(D3/H7)] 23%	[=(E3/I7)] 28%
4	In the middle	[=(B4/F7)] 18%	[=(C4/G7)] 20%	[=(D4/H7)] 19%	[=(E4/I7)] 29%
5	To some extent	[=(B5/F7)] 18%	[=(C5/G7)] 23%	[=(D5/H7)] 37%	[=(E5/I7)] 23%
6	To great extent	[=(B6/F7)] 3%	[=(C6/G7)] 8%	[=(D6/H7)] 17%	[=(E6/I7)] 10%
7	Total sample size	=[SUM(B2:B6)] 200	=[SUM(C2:C6)] 200	=[SUM(D2:D6)] 202	=[SUM(E2:E6)] 200

Source: Authors' analysis based on data from North Dakota Department of Public Instruction (2017).

Box 2. Creating and interpreting a stacked bar chart in Microsoft Excel

To create a stacked bar chart that displays the distribution of responses for each survey item, first select the cells in the Microsoft Excel spreadsheet that you want to show in the chart. Next, select the *Insert* tab in the menu bar. Click on the *Recommended Charts* icon, scroll down, and select *Stacked Bar Chart*. Box figure 1 provides an example of a stacked bar chart using the data from box table 2 in box 1.

Box figure 1. Example of a stacked bar chart in Microsoft Excel showing the percentage of respondents in each category for items related to social-emotional health in the Teacher Version of the Needs Assessment Survey for American Indian Students



Note: Data are from the 2017 survey administration. Item wording reflects the current survey version.

Source: Authors' analysis based on data from North Dakota Department of Public Instruction (2017).

The sample stacked bar chart in box figure 1 shows that 5–31 percent of teachers selected “to no extent” and that 23–30 percent selected “to a minimal extent” in response to the items focused on social-emotional health—a critical topic for American Indian students, who can have high levels of trauma, both historical and current (Lechner et al., 2016). These percentages contrast with the proportions in the upper end of the response scale, where 3–17 percent of teachers selected “to a great extent” and 18–37 percent selected “to some extent.” Given the degree to which districts across the state offer resources to support mental health services in schools, such as providing counselors and mandating teacher training, the percentage of responses at the lower end of the scale was higher than anticipated (North Dakota Department of Public Instruction, 2015).

Box 3. Calculating median values in Microsoft Excel

If one of your research questions focused on understanding the overall strengths and challenges in schools serving American Indian students, you might administer the complete survey or multiple topics of the survey. To gain insights into the relative differences, you might summarize the results across all items within each topic area. One way to do this is to aggregate the items by generating median values as a method for understanding the central point in the data.¹ To calculate the median response by item and topic in Microsoft Excel, follow these five steps:

1. Convert the survey responses from categories (such as “to a minimal extent” or “to a great extent”) to numeric values. For the most common set of response categories in the teacher and administrator surveys, the conversion would be “to no extent” = 1, “to a minimal extent” = 2, “in the middle” = 3, “to some extent” = 4, and “to a great extent” = 5.
2. Beginning in the second column, enter the survey items in the first row of the spreadsheet. Then, beginning in the second row, enter an identifier for each respondent in the first column (for example, “Teacher 1”). After all the respondent identifiers are listed, label the last two cells in the first column as “Item Median” and “Topic Median.” (See box table 1 for an example using teachers’ responses to several items related to policies and practices to address bullying.)
3. Enter each respondent’s responses to each item.
4. In each column of the “Item Median” row, type =MEDIAN, followed by the range of cells in the column that contain responses, within parentheses. In the example in box table 1, the formula for the item median of the first survey item is =MEDIAN(B2:B7).
5. In the first column of the “Topic Median” row, type =MEDIAN followed by the range of cells in all columns that contain responses, within parentheses. In the example in box table 1, the formula for the topic median is =MEDIAN(B2:F7).

In the sample data in box table 1, the topic median value across all the items related to bullying was 2.5, indicating that teachers rated these items on the lower part on the scale (generally between “to a minimal extent” and “in the middle”). This tendency might indicate an area in which improvement is important to ensuring students’ safety.

Box table 1. Example of a Microsoft Excel spreadsheet showing individual and median responses and the formulas used to calculate them (in brackets) for items related to the topic of policies and practices to address bullying in the Teacher Version of the Needs Assessment Survey for Teachers

	A	B	C	D	E	F
1		To what extent...				
	Respondent	8a) is your school’s bullying prevention policy effective?	8b) does your school use evidence-based methods to reduce bullying?	8c) does your school partner with parents and the community to reduce bullying?	8d) does your school understand the prevalence of bullying on campus?	8e) do students in your school feel safe reporting bullying?
2	Teacher 1	2	2	3	3	4
3	Teacher 2	2	2	1	5	5
4	Teacher 3	2	3	3	2	2
5	Teacher 4	2	1	2	2	2
6	Teacher 5	3	1	2	3	3
7	Teacher 6	4	4	3	5	4
8	Item Median	[=MEDIAN(B2:B7)] 2	[=MEDIAN(C2:C7)] 2	[=MEDIAN(D2:D7)] 2.5	[=MEDIAN(E2:E7)] 3	[=MEDIAN(F2:F7)] 3.5
9	Topic Median	[=MEDIAN(B2:F7)] 2.5				

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

Note

1. A median value is an appropriate method for calculating the center point in categorical data that results from these survey items. The median provides a summary value that can be used to evaluate relative strengths and weaknesses when examining multiple topic areas.

Box 4. Analyzing responses to open-ended survey items

Responses to open-ended survey items can provide context and additional meaning to teachers’ and administrators’ responses on scaled survey items—including insights into what respondents were thinking about a given topic—for interpreting scaled survey data (Stake, 2010).

To analyze responses to open-ended survey items, follow these five steps:

1. Organize responses in spreadsheet software such as Microsoft Excel. If the survey was conducted using paper and pencil, responses will need to be typed in. (See box table 1 for a sample of responses to item 3k, “How does your school provide opportunities for students to connect to traditional knowledge and practices of American Indian culture and community?”)
2. Read through responses to obtain a preliminary understanding of respondents’ perspectives.
3. Read through the responses a second time and take notes in an adjacent column about the themes of each response.
4. Discuss the patterns with colleagues or the improvement team.
5. Summarize the response patterns. This summary can be accomplished by looking at the themes identified in step 3 and counting the number of responses in each of the theme areas.

In the sample data in box table 1, column B shows one- to three-word summaries of the main ideas of the responses. The data indicate that teachers use a range of strategies to provide culturally responsive opportunities and that most of the strategies consist of additional activities or classes, with limited integration of activities into daily classroom instruction. Two of the most common responses teachers reported (6 out of 10) were that their school provides “additional activities” or an “additional class” to connect students to traditional knowledge and practices. A school improvement team might use these data to work with teachers on ways to integrate American Indian culture into academic content areas.

Box table 1. Example of an Excel spreadsheet showing open-ended responses and summaries for an item related to culturally responsive instruction in the Teacher Version of the Needs Assessment Survey for American Indian Students

	A	B
1	Response to item 3k, “How does your school provide opportunities for students to connect to traditional knowledge and practices of American Indian culture and community?”	Summary
2	By offering culture classes to all grade levels and by participating in cultural events such as Native American month.	Additional class
3	I co-teach with other teachers for their learning and student learning in science, FACS, shop, art, and math. We learned how to dry indigenous food for storing and eating, 4 medicines and smudging. Indigenous astrology.	Integrated into content
4	Weekly morning prayer, song. Host a masquerade and regular pow wow, attend events with students (related to culture, art, traditional dance, song)	Additional activities
5	Guest presentation.	Additional activities
6	Local elders and language leaders are regular part of classroom and schoolwide initiatives.	Engagement
7	Culture class.	Additional class
8	We have students visit the retirements of Native Elders; Pow Wows.	Additional activities
9	Not aware of any opportunities.	Limited
10	This is mostly up to the classroom teachers.	Limited
11	Through the culture class/instruction that are offered once a week.	Additional class

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

Step 3: Interpreting survey findings

Before reviewing the data, convene key stakeholders to hypothesize about the expected results. For example, stakeholders may anticipate that the median responses will be higher for student attendance than for bullying because of an ongoing, schoolwide attendance initiative. If you have administered the surveys over multiple timepoints, stakeholders could also hypothesize how the results might have changed.

Next, review your survey data to understand the response rates. National Center for Education Statistics (2012a) guidance suggests an 85 percent response rate for items and participants to allow for accurate conclusions. If your response rate is lower, review the characteristics of respondents to look for patterns. For example, if you are in a district, did you have lower response rates from elementary schools or high schools? If you have proportionally different response rates, consider targeted resurveying by reaching out to teachers directly to encourage participation. If you have proportionally similar response rates across respondent groups, consider analyzing the data, but be cautious about drawing definitive conclusions. Also, consider discussing with stakeholders or the improvement committee how the response rates might affect your interpretations. For more information on response rates, see National Center for Education Statistics (2012a) and Pazzaglia et al. (2016).

Then, consider the actual results. For example, by looking at bar charts across two survey administrations, stakeholders might observe that a large share of teacher responses to items related to culturally responsive instruction were in the lowest response category in the first survey administration but that responses improved in the second administration, after the school implemented a community of practice focused on culturally responsive instruction.

Use caution in drawing conclusions without considering multiple sources of information. In the example above on culturally responsive instruction, classroom observations focused on understanding the implementation of culturally responsive instruction could supplement the survey results. Also remember that longer time periods between survey administrations may be needed to detect changes.

After calculating the results, reflect on how they address the research questions. Consider the following questions:

- Were a majority of teachers' or administrators' responses in the very high or very low categories for any survey topics?
- Were the results as expected based on the hypotheses generated with stakeholders?

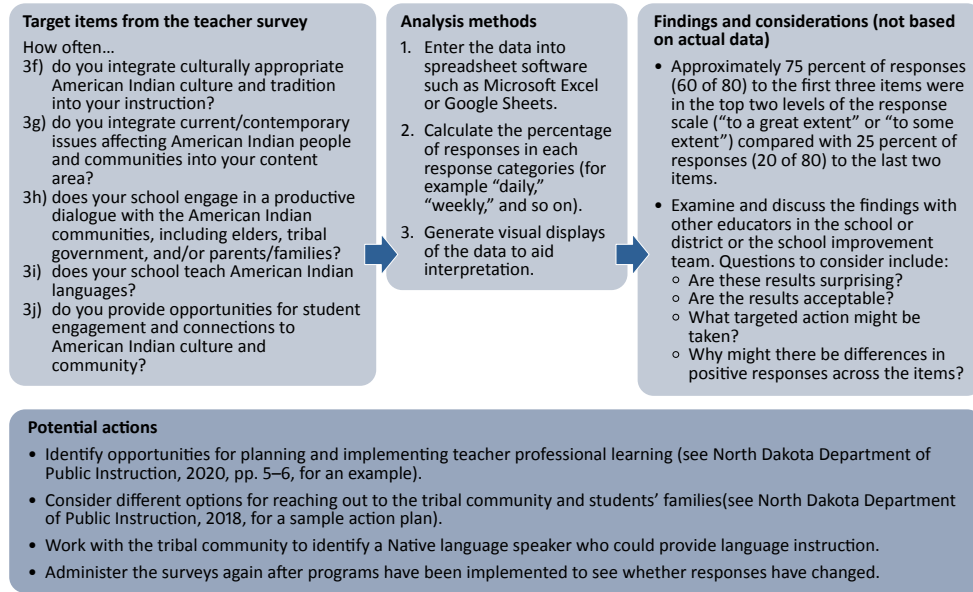
For example, stakeholders might observe that teachers' responses to items related to social-emotional health were lower than anticipated, given the topic's importance (Fryberg et al., 2013; see box figure 1 in box 2), or were lower than responses to items related to other topics (such as school climate). Such results suggest the need to work with stakeholders to determine appropriate strategies that support social-emotional health.

Also, remember that these data are only a single point of information. Consider including other data, such as student achievement results, attendance information, and graduation rates.

Figure 3. Aligning research questions to methods and findings: Example 1

Research question

To what extent did teachers report using instructional practices and a curriculum that incorporate the culture of their American Indian students?

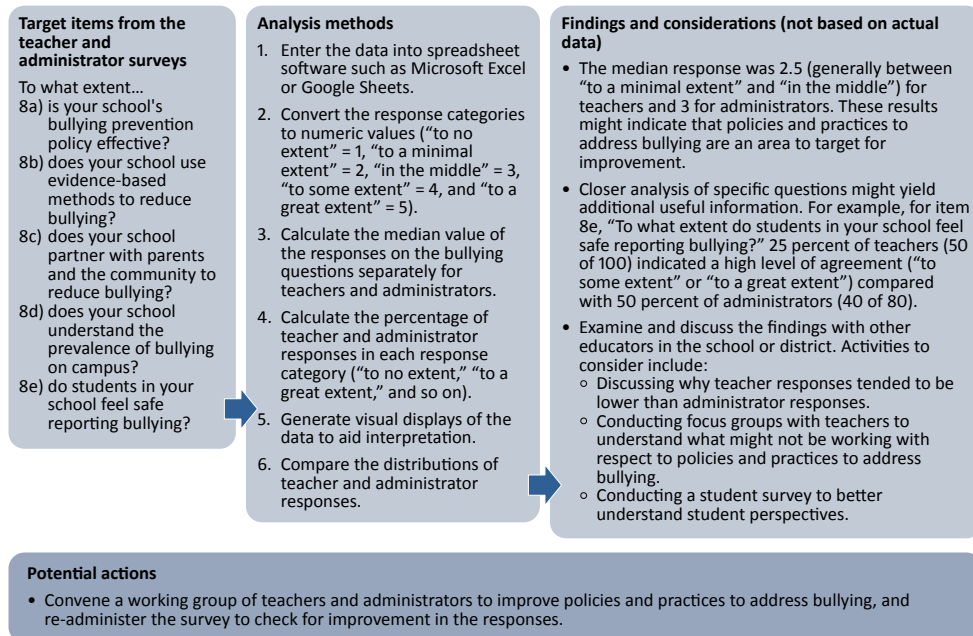


Source: Adapted from Cherasaro et al. (2015).

Figure 4. Aligning research questions to methods and findings: Example 2

Research question

To what extent do teachers and administrators report having sufficient policies and practices to address bullying?



Source: Adapted from Cherasaro et al. (2015).

Figure 5. Aligning research questions to methods and findings: Example 3

Research question

Has the school climate become safer and more positive since the implementation of new practices related to school climate?

Target items from the teacher and administrator surveys

To what extent...

- 5a) do you as a teacher feel valued and respected by students, parents, and administrators?
- 5b) do you as a teacher establish caring and trusting relationships with students?
- 5c) do you as a teacher hold high expectations for all students (for example, providing all students with challenging tasks)?
- 5e) do you as a teacher seek to engage parents and family members in supporting their children's learning?
- 5h) does your school support and promote collaborative leadership between teachers and administrators?

Analysis methods

1. Enter the data into spreadsheet software such as Microsoft Excel or Google Sheets.
2. Calculate the percentage of teacher and administrator responses in each response category ("to no extent," "to a great extent," and so on).
3. Generate visual displays of the data to aid interpretation.
4. Compare the distributions of teacher and administrator responses.
5. Examine changes in the distribution of responses from the previous administration of the survey.

Findings and considerations (not based on actual data)

- On the initial (baseline) survey, 40 percent of teachers (32 of 80) indicated a high level of agreement ("to some extent" or "to a great extent") with these items. After the school implemented new practices, provided professional development, and identified new resources, 80 percent of teachers (64 of 80) indicated a high level of agreement for the first four items, but only 50 percent (40 of 80) indicated a high level of agreement for the fifth item.
- Activities to consider include:
 - Discussing the results at a staff meeting to identify why responses to the item related to family engagement did not improve as much as responses to the other items in the topic.
 - Conducting focus groups or interviews with families to learn how engagement could be improved.
 - Identifying barriers to family engagement with the school improvement team.

Potential actions

- Discuss the findings with other educators in the school or district.
- Celebrate the successes while guiding targeted conversations around parent and family involvement that identify ways for teachers to productively engage families. See North Dakota Department of Public Instruction (2018) for an example of a statewide action plan. The example includes suggestions for identifying needs, selecting strategies, and planning professional development (pp. 3–5). It also contains resources on supporting family engagement and equitable instruction, including webinars and reports.

Source: Adapted from Cherasaro et al. (2015).

COMMUNICATING THE RESULTS AND DEVELOPING AN ACTION PLAN

With any survey data, it is often helpful to share and interpret results with stakeholders. Such collaboration allows for building consensus on the use of findings and creating a vision for improvement. Transparency and relationships are particularly important in American Indian communities, including schools serving American Indian students. The National Indian Education Association (2016) promotes working collaboratively with stakeholders as a way to build sustained improvement, trust, and a vision for student success.

Consider how you will communicate survey results to stakeholders (such as teachers and community members) and how they will use the results, especially when you are engaged in an improvement process. Education and community leaders could use the issues identified through the surveys to guide school improvement and offer academic and social supports to students.

There are numerous options for presenting the survey results and engaging stakeholders around the findings. At the school level, you could present highlights from the survey findings in PowerPoint presentations to teachers in person (see, for example, Fredericks, n.d., <https://www.nd.gov/dpi/sites/www/files/documents/Indian%20Education/Needs%20Assessment/1718needsassresults.pdf>; see also National Conference of State Legislatures, 2017, <https://www.ncsl.org/legislators-staff/legislative-staff/legislative-staff-coordinating-committee/tips-for-making-effective-powerpoint-presentations.aspx>, for tips on effective PowerPoint presentations). Meeting with teachers could also provide an opportunity to strategize about the most important areas on which to focus. Similarly, a district leader could assemble a team of stakeholders to discuss the results and prioritize any actions or next steps.

At the state level, you could generate a report that summarizes the needs assessment process and the survey results (for tips on writing reports, see National Conference of State Legislatures, n.d.). You could also build an action plan to help schools support American Indian students. For example, the North Dakota Native American Needs Assessment Action Plan (North Dakota Department of Public Instruction, 2018, <https://www.nd.gov/dpi/sites/www/files/documents/Indian%20Education/Needs%20Assessment/NDNativeAmericanNeedsAssessmentAP1819.pdf>) includes strategies and resources (reports, professional development, and webinars) aligned with such topics as social-emotional health, culturally responsive practices, and equitable instruction. Introductory text assists educators in selecting strategies and describes considerations for implementing professional development. The strategies are divided into such areas as the promotion of positive self-representation, teacher–student relationships, and culturally responsive programs. The plan’s suggestions allow educators to determine the best path for addressing their needs.

With regard to selecting strategies, consider the degree to which the strategy or intervention is supported by evidence. The U.S. Department of Education’s What Works Clearinghouse provides a range of interventions that have been studied across different school types and populations of students (<https://ies.ed.gov/ncee/wwc/>). These interventions are clearly associated with levels of evidence for improving student outcomes. Interventions that are supported by strong or moderate evidence and that align to your identified need might be prioritized for consideration in your action plan (U.S. Department of Education, 2016, <https://www2.ed.gov/policy/elsec/leg/essa/guidanceuseinvestment.pdf>).

IMPLEMENTING AND MONITORING THE ACTION PLAN

After identifying areas for improvement, work with key stakeholders to set priorities and allocate resources, including deciding how to implement specific interventions or programs. There are many resources available as you begin to think about implementation. See, for example, the Center on School Turnaround's multiple resources and worksheets for implementing and monitoring interventions (Corbett & Redding, 2017; Meyers et al., 2017).

After developing strategies to address an identified need, thoroughly plan for their implementation. Consider developing a logic model that explicitly describes the challenge, available resources (including staff, funding, and materials), and measurable outcomes. Also, consider who will lead the implementation and determine the timeline for monitoring short- and long-term outcomes. In the case of your own implementation efforts, consider the level of evidence you hope to achieve. Interventions that demonstrate strong or moderate evidence are more likely to be used by other practitioners because of their success in supporting changes in student or educator outcomes.

An important factor to consider when implementing a new intervention or program is ongoing and data-driven monitoring. Monitoring can take different forms, depending on your goals. For example, if your intervention focuses on bullying prevention, you may see changes in student outcomes, such as in attendance or behavior data. In addition, after a period of time, you could resurvey teachers or administrators to understand and monitor the progress of the intervention. For example, if you have implemented a community of practice intervention on culturally responsive instruction, you could resurvey teachers after six months to identify areas that need additional support. The survey results might indicate that teachers engaged more with the community but that the school could still identify opportunities for student engagement with American Indian culture.

If you are interested in learning more about the use of evidence-based practices to improve student outcomes, consider reviewing recent U.S. Department of Education (2016, 2020) nonregulatory guidance, *Using Evidence to Strengthen Education Investments*. It focuses on selecting and monitoring evidence-based interventions. It outlines a five-step approach to using evidence to improve student outcomes that is well aligned to the process described in this guide. The department's approach includes identifying local needs, the primary focus of this guide, and then encourages educators to select relevant, evidence-based interventions; plan for implementation; implement that plan with fidelity; and examine and reflect on the outcomes of the improvement effort.

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APPENDIX A. NEEDS ASSESSMENT SURVEY FOR AMERICAN INDIAN STUDENTS: TEACHER VERSION

Respondent demographics

1a) Which of the following most closely matches your primary job responsibility?

- Teacher
- Paraprofessional
- Other (please specify): _____

1b) How many years have you been in your current school district?

1c) What is your ethnicity?

- Hispanic or Latino
- Not Hispanic or Latino

1d) What is your race? *(Check all that apply)*

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White
- Other (please specify): _____

School location

2) On average, how much time do your students spend on a school bus to get to and from school?

- Less than 30 min
- Between 30 and 59 min
- Between 60 and 90 min
- More than 90 min

Culturally responsive instruction

3a) What methods for specifically supporting American Indian students are offered at your school? *(Check all that apply)*

- Instructional interventions (literacy or mathematics)
- Tutoring
- Before/after school care, including extended learning opportunities
- Clubs
- Mentoring
- Reliable transportation
- Sports
- Individualized support from teachers
- Engaging parents in ways to support their children at home
- Social-emotional learning
- Mental health services
- Other (please specify): _____

3b) What have you found to be the most effective method(s) for increasing the achievement of your American Indian students? *(Check all that apply)*

- Tutoring
- Before/after school care
- Clubs
- Mentoring
- Reliable transportation
- Sports
- Individualized support from teachers
- Engaging parents in ways to support their child at home
- Social-emotional learning
- Mental health services
- Other (please specify): _____

3c) What have you found to be the most effective instructional method(s) for increasing the achievement of your American Indian students? *(Check all that apply)*

- Cultural responsiveness
- Individualized learning plans
- Student choice
- Alternative assessments
- Group projects
- Hands-on learning activities
- Social-emotional learning
- Other (please specify): _____

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
3d) do you participate in local tribal events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3e) does your school engage the community to connect youth to culturally appropriate American Indian culture and tradition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How often...	Daily	Twice a week	Weekly	Monthly	Annually
3f) do you integrate culturally appropriate American Indian culture and tradition into your instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3g) do you integrate current/contemporary issues affecting American Indian people and communities into your content area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3h) does your school engage in a productive dialogue with the American Indian communities, including elders, tribal government, and/or parents/families?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3i) does your school teach American Indian languages?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3j) do you provide opportunities for student engagement and/or connections to American Indian culture and community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3k) How does your school provide opportunities for students to connect to traditional knowledge and practices of American Indian culture and community?

State-specific American Indian instruction (North Dakota Native American Essential Understandings)

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
4a) are you aware of the North Dakota Native American Essential Understandings (NDNAEU) project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4b) do you prioritize NDNAEU content in your classroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4c) do you integrate the NDNAEU in your curriculum and instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4d) are you confident in implementing the NDNAEU in your classroom?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4e) with regard to the NDNAEU, do teachers in your school participate in the professional development offered by the North Dakota Department of Public Instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4f) What are the greatest challenges to implementing the NDNAEU? *(Check all that apply)*

- Unfamiliarity with resources
- Inability to access resources
- Concern for the authenticity of content
- Concern for appropriateness of content
- Lack of confidence
- Lack of resources
- Lack of administrative support
- Lack of community support
- Lack of background knowledge
- Lack of professional development opportunities
- Lack of interest
- Uncertainty about how to integrate with my content area
- Other (please specify): _____

School climate

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
5a) do you as a teacher feel valued and respected by students, parents, and administrators?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5b) do you as a teacher establish caring and trusting relationships with students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5c) do you as a teacher hold high expectations for all students (for example, providing all students with challenging tasks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5d) are teachers in your school culturally responsive to the needs of students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5e) do you as a teacher seek to engage parents and family members in supporting their children's learning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5f) does your school offer professional development opportunities so that teachers can better support American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5g) does your school use assessment data constructively to better support students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5h) does your school support and promote collaborative leadership between teachers and administrators?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Equity

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
6a) is the climate in your school safe and positive for everyone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6b) do you as a teacher use instructional practices to ensure educational equity (for example, differentiated instruction, instructional supports, accommodations, interventions)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6c) does your school provide instructional materials (for example, textbooks, handouts) that reflect students' cultural background, ethnicity, and identity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6d) do all of your students have access to technology (for example, computers, Internet) to complete homework?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6e) do adults working at your school treat all students respectfully?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6f) are all students treated equitably in your school, regardless of their race or ethnicity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student attendance

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
7a) does your school monitor student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7b) does your school use data to identify patterns in student attendance in order to proactively address absenteeism?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7c) does your school engage with families to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7d) does your school identify causes to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7e) does your school implement programs and interventions to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7f) For what reasons do students stay in school or have high attendance rates? *(Check all that apply)*

- Tribal support
- Tribal council
- Athletics/activities
- Post-high school goal-setting
- Teacher encouragement/support
- Smaller class sizes
- Guidance programs
- Positive school climate
- Access to transportation
- Peer support
- Parent engagement
- Other (please specify): _____

Bullying

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
8a) is your school's bullying prevention policy effective?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8b) does your school use evidence-based methods to reduce bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8c) does your school partner with parents and the community to reduce bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8d) does your school understand the prevalence of bullying on campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8e) do students in your school feel safe reporting bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Addressing mental/behavioral/social-emotional well-being

9a) Does your school provide students with the following? *(Check all that apply)*

- School-based mental health services (for example, in-person or telehealth)
- School counselors
- School nurse
- Community-based mental health services
- Services provided by a school psychologist
- Services provided by an interventionist
- Trauma-informed practices by school staff
- Mentorships
- Cultural supports (for example, Native ceremonies, language classes)
- Other (please specify): _____

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
9b) do the mental health services offered by your school support students' needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9c) does your school use culturally responsive behavioral interventions such as trauma-informed practices or restorative justice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9d) does your school engage the community/local tribes in an attempt to connect youth to culturally responsive mental and physical health care services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9e) do you implement or does your school have programs to support students' noncognitive skills (for example, motivation, resilience, curiosity)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9f) does your school partner with parents to understand what might cause students' stress or trauma (for example, family unemployment, relationship with peers, changes in living situation)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9g) do counselors and other staff effectively provide mental health support in your school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9h) Please describe effective ways in which you support your students' social-emotional learning or mental health?

Professional development

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
10a) is the professional development you receive culturally appropriate and responsive to the needs of American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10b) does your school offer teachers professional development opportunities so that they can most effectively support the unique needs of American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10c) is the professional development you receive aligned with the needs of your school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10d) is the professional development you receive inclusive of a variety of stakeholders (for example, teachers, administrators, parents, tribal members/leaders)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10e) are you as a teacher provided with sufficient professional development to use culturally competent strategies for teaching American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10f) I would like to see more professional development in: *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Supporting students' mental health
- Other (please specify): _____

10g) What type of professional development has your school or district offered that has been the most effective for connecting with and supporting American Indian students? *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Supporting students' mental health
- Other (please specify): _____

10h) What type of professional development does your school or district provide during new teacher induction? *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Supporting students' mental health
- Other (please specify): _____

Other

11) Do you have other comments about supporting American Indian students in your school?

Thank you!

Once again, thank you so much for participating in the Needs Assessment Survey for American Indian Students!

APPENDIX B. NEEDS ASSESSMENT SURVEY FOR AMERICAN INDIAN STUDENTS: ADMINISTRATOR VERSION

Respondent demographics

1a) Which of the following most closely matches your primary job responsibility?

- Superintendent
- Assistant superintendent
- Principal
- Assistant principal
- Curriculum director
- Other (please specify): _____

1b) How many years have you been in your current school district? _____

1c) What is your ethnicity?

- Hispanic or Latino
- Not Hispanic or Latino

1d) What is your race? *(Check all that apply)*

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Pacific Islander
- White
- Other (please specify): _____

School location

2) On average, how much time do your students spend on a school bus to get to and from school?

- Less than 30 min
- Between 30 and 59 min
- Between 60 and 90 min
- More than 90 min

Culturally responsive instruction

3a) What methods for specifically supporting American Indian students are offered at your school or district?

(Check all that apply)

- Instructional interventions (literacy or mathematics)
- Tutoring
- Before/after school care, including extended learning opportunities
- Clubs
- Mentoring
- Reliable transportation
- Sports
- Individualized support from teachers
- Engaging parents in ways to support their child at home
- Social-emotional learning
- Mental health services
- Other (please specify): _____

3b) What have you found to be the most effective method(s) at your school or district for increasing the achievement of your American Indian students? *(Check all that apply)*

- Tutoring
- Before/after school care
- Clubs
- Mentoring
- Reliable transportation
- Sports
- Individualized support from teachers
- Engaging parents in ways to support their child at home
- Social-emotional learning
- Mental health services
- Other (please specify): _____

3c) What have you found to be the most effective instructional method(s) at your school or district for increasing the achievement of your American Indian students? *(Check all that apply)*

- Cultural responsiveness
- Individualized learning plans
- Student choice
- Alternative assessments
- Group projects
- Hands-on learning activities
- Social-emotional learning
- Other (please specify): _____

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
3d) do you participate in local tribal events?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3e) does your school or district engage the community to connect youth to culturally appropriate American Indian culture and tradition?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How often...	Daily	Twice a week	Weekly	Monthly	Annually
3f) do teachers at your school or district integrate culturally appropriate American Indian culture and tradition into their instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3g) do teachers at your school or district integrate current/contemporary issues affecting American Indian people and communities into their content areas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3h) does your school or district engage in a productive dialogue with the American Indian communities, including elders, tribal government, and/or parents/families?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3i) does your school or district teach American Indian languages?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3j) do teachers at your school or district provide opportunities for student engagement and/or connections to American Indian culture and community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3k) How does your school or district provide opportunities for students to connect to traditional knowledge and practices of American Indian culture and community?

State-specific American Indian instruction (North Dakota Native American Essential Understandings)

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
4a) are you aware of the North Dakota Native American Essential Understandings (NDNAEU) project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4b) do teachers at your school or district prioritize NDNAEU content in their classrooms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4c) do teachers at your school or district integrate the NDNAEU in their curriculum and instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4d) are teachers at your school or district confident in implementing the NDNAEU in their classrooms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4e) with regard to the NDNAEU, do teachers in your school or district participate in the professional development offered by the North Dakota Department of Public Instruction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4f) What are the greatest challenges to implementing the NDNAEU? *(Check all that apply)*

- Unfamiliarity with resources
- Inability to access resources
- Concern for the authenticity of content
- Concern for appropriateness of content
- Lack of confidence
- Lack of resources
- Lack of administrative support
- Lack of community support
- Lack of background knowledge
- Lack of professional development opportunities
- Lack of interest
- Uncertainty about how to integrate with teachers' content areas
- Other (please specify): _____

School climate

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
5a) do teachers at your school or district feel valued and respected by students, parents, and administrators?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5b) do teachers at your school or district establish caring and trusting relationships with students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5c) do teachers at your school or district hold high expectations for all students (for example, providing all students with challenging tasks)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5d) are teachers in your school or district culturally responsive to the needs of students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5e) do teachers at your school or district seek to engage parents and family members in supporting their children's learning?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5f) does your school or district offer professional development opportunities so that teachers can better support American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5g) does your school or district use assessment data constructively to better support students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5h) does your school or district support and promote collaborative leadership between teachers and administrators?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Equity

To what extent...	To no extent	To a minimal extent	In the middle	To a great extent	To a great extent
6a) is the climate in your school or district safe and positive for everyone?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6b) do teachers at your school or district use instructional practices to promote educational equity (for example, differentiated instruction, instructional supports, accommodations, interventions)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6c) does your school or district provide instructional materials (for example, textbooks, handouts) that reflect students' cultural background, ethnicity, and identity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6d) do all of your students have access to technology (for example, computers, Internet) to complete homework?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6e) do adults working at your school or district treat all students respectfully?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6f) are all students treated equitably in your school or district, regardless of their race or ethnicity?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Student attendance

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
7a) does your school or district monitor student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7b) does your school or district use data to identify patterns in student attendance in order to proactively address absenteeism?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7c) does your school or district engage with families to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7d) does your school or district identify causes to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7e) does your school or district implement programs and interventions to support student attendance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7f) What practices does your school or district have in place to support high attendance rates? *(Check all that apply)*

- Tribal support
- Tribal council
- Athletics/activities
- Post-high school goal-setting
- Teacher encouragement/support
- Smaller class sizes
- Guidance programs
- Positive school climate
- Access to transportation
- Peer support
- Parent engagement
- Other (please specify): _____

Bullying

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
8a) is your school's or district's bullying prevention policy effective?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8b) does your school or district use evidence-based methods to reduce bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8c) does your school or district partner with parents and the community to reduce bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8d) does your school or district understand the prevalence of bullying on campus?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8e) do students in your school or district feel safe reporting bullying?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Addressing mental/behavioral/social-emotional well-being

9a) Does your school provide students with the following? *(Check all that apply)*

- School-based mental health services (for example, in-person or telehealth)
- School counselors
- School nurse
- Community-based mental health services
- Services provided by a school psychologist
- Services provided by an interventionist
- Trauma-informed practices by school staff
- Mentorships
- Cultural supports (for example, Native ceremonies, language classes)
- Other (please specify): _____

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
9b) do the mental health services offered by your school or district support students' needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9c) does your school or district use culturally responsive behavioral interventions such as trauma-informed practices or restorative justice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9d) does your school or district engage the community/local tribes in an attempt to connect youth to culturally responsive mental and physical health care services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9e) do you implement or does your school or district have programs to support students' noncognitive skills (for example, motivation, resilience, curiosity)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9f) does your school or district partner with parents to understand what might cause students' stress or trauma (for example, family unemployment, relationship with peers, changes in living situation)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9g) do counselors and other staff effectively provide mental health support at your school or district?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9h) Please describe effective ways in which you support the social-emotional learning or mental health of students at your school or district?

Professional development

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
10a) is the professional development at your school or district culturally appropriate and responsive to the needs of American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10b) does your school or district offer teachers professional development opportunities so that they can most effectively support the unique needs of American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10c) is the professional development you receive aligned with the needs of your school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10d) is the professional development you receive inclusive of a variety of stakeholders (for example, teachers, administrators, parents, tribal members/leaders)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10e) are teachers in your district provided sufficient professional development to use culturally competent strategies for teaching American Indian students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10f) I would like to see more professional development in: *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Supporting students' mental health
- Other (please specify): _____

10g) What type of professional development has your school or district offered that has been the most effective for connecting with and supporting American Indian students? *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Supporting students' mental health
- Other (please specify): _____

10h) What type of professional development does your school or district provide during new teacher induction? *(Check all that apply)*

- Culturally responsive instruction
- Multi-tiered systems of support
- Supporting students' social-emotional learning
- Implementing the NDNAEU
- Bullying prevention
- Drop-out prevention
- Understanding the communities of my American Indian students
- Trauma-informed training
- Other (please specify): _____

Teacher recruitment and retention

To what extent...	To no extent	To a minimal extent	In the middle	To some extent	To a great extent
11a) is the recruitment of high-quality educators a concern for your school or district?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11b) is the retention of high-quality educators a concern for your school or district?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11c) does your school or district have a specific program for recruiting and retaining high-quality educators?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11d) What strategies does your school or district use for recruiting and retaining teachers?

Other

12) Do you have other comments about supporting American Indian students in your school?

Thank you!

Once again, thank you so much for participating in the Needs Assessment Survey for American Indian Students!

APPENDIX C. SURVEY DEVELOPMENT PROCESS

This guide was the result of an ongoing, iterative collaboration between the Regional Educational Laboratory (REL) Central and the North Dakota Department of Public Instruction. As part of the state’s needs assessment cycle, the REL Central and the department decided to develop surveys to help North Dakota educators identify and focus improvement efforts in schools serving American Indian students. The survey team collaborated with stakeholders to identify important academic and social-emotional topics that could be used to develop culturally relevant comprehensive needs assessment surveys for teachers and administrators (see appendix A for the teacher survey and appendix B for the administrator survey). Although the surveys were developed in and for North Dakota, they can be adapted to other contexts (see the section on identifying research questions in the main report).

A high priority was placed on ensuring technical quality and cultural relevance in the surveys. Because the survey team could not locate any existing needs assessments for American Indian populations, it reviewed the literature on needs assessment for general student populations, including Corbett and Redding (2017), Southwest Comprehensive Center at WestEd (2008), and U.S. Department of Education (2001). Reviewing the literature helped build the survey team’s understanding of potential goals of a needs assessment. The survey team then consulted the literature on developing culturally responsive surveys (Ramos et al., 2015) and on collaborating with American Indian communities (for example, Hall et al., 2011; Hood et al., 2015; Kirkhart, 2010; LaFrance & Nichols, 2009; Rainie et al., 2017). The knowledge gained from reviewing this literature was applied during the creation of the current surveys to ensure that they were culturally appropriate and grounded in current theories.

Stakeholder participants and North Dakota context

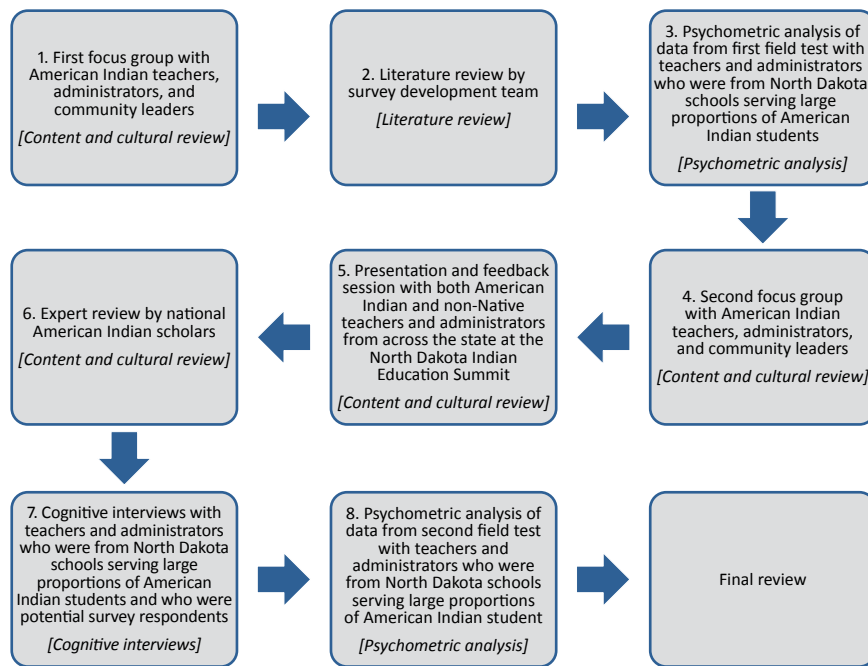
Supporting the education of American Indian students is a priority for North Dakota. The state has one of the largest proportions of American Indian students in the United States: 9.4 percent of North Dakota students identify as American Indian compared with 1.2 percent nationally (National Center for Education Statistics, 2012). Some 13 schools in North Dakota either are operated by or receive funding from the U.S. Department of Education Bureau of Indian Education, and 16 public schools have large concentrations of American Indian students (40 percent or higher). North Dakota is also home to five tribes—Mandan, Hidatsa, and Arikara (Three Affiliated Tribes); Sisseton-Wahpeton Oyate Nation; Spirit Lake Nation; Standing Rock Sioux Tribe; and Turtle Mountain Band of Chippewa Indians—and an Indian Community—Trenton Indian Service Area (North Dakota Indian Affairs Commission, n.d.). Each has a unique cultural perspective.

Considering North Dakota’s unique context in the survey development process allowed for diverse perspectives at each stage (figure C1). The following sections describe each stage in detail.

Content and cultural review

The survey team prioritized cultural validity by engaging American Indian educators and community members throughout survey development in order to build relevancy and sensitivity (Kirkhart, 2016). The content and cultural review stages included two focus groups with American Indian stakeholders (educators from schools and districts with large proportions of American Indian students from across the state who were also community leaders, leaders of tribal higher education organizations, and parents) from different tribal entities across

Figure C1. Stages of the development of the Needs Assessment Surveys for American Indian Students



Source: Authors' analysis based on data from North Dakota Department of Public Instruction (2017).

North Dakota (for example, Standing Rock Sioux Tribe and Turtle Mountain Band of Chippewa Indians). The first concentrated on identifying areas that would be important to include in the surveys. Participants discussed the contexts of their schools and the challenges they faced, including how those challenges should be represented in the surveys. After the psychometric analyses, the surveys were revised. A second focus group reviewed the revised items to provide feedback on wording, additions, and deletions.

In 2018 the survey development team presented the surveys at two sessions during the North Dakota Indian Education Summit, which attracts a range of educators from across the state, including teachers and administrators from large schools, Bureau of Indian Education schools, and tribal colleges. Approximately 60 people, representing a diverse set of schools and organizations, attended the sessions and provided suggestions that were incorporated into the surveys. In general, attendees believed that the surveys covered all the main issues that they would be interested in understanding about their schools.

To ensure the survey's relevance to schools and districts outside North Dakota, three national experts in American Indian education reviewed them: Dorothy Aguilera Black-Bear (Choctaw), Susan Faircloth (Coharie), and Martin Reinhardt (Anishinaabe Ojibway). They provided feedback on survey items and on how the surveys might be used in different contexts, such as other geographic locations.

Literature review

The survey team reviewed the research base to support the surveys' content validity (see appendix D). This review helped identify potential survey items and define the content of each topic with regard to the research on schools with American Indian students (Carjuzaa, 2012; Fryberg et al., 2013; Kana'iaupuni et al., 2010). The survey team used the compiled literature and needs assessment instruments to build a framework for the two surveys. Both surveys included the same topics, except teacher recruitment and retention, which was included only in

the administrator survey, and included items on culturally responsive instruction, state-specific American Indian instruction, school climate, equity, student attendance, bullying, addressing mental/behavioral/social-emotional well-being, and professional development.

Psychometric analyses

North Dakota schools with large proportions of American Indian students, including Bureau of Indian Education, public, and charter schools, participated in field tests of the surveys. The field test data were analyzed using classical test theory, Rasch, and confirmatory factor analyses methods to understand the technical quality of the surveys and the survey items. The purpose of the analyses was to flag items that might not be measuring the intended content. The survey team revised items after examining results across the analyses.

Classical test theory analyses consider internal consistency—a form of reliability—to measure whether a group of survey items consistently assesses the same topic across items. If a set of items has low reliability, it may mean that participants are confused about wording or have a different understanding of the items from what was intended. It may also mean that the items are measuring more than one concept. The reliability coefficients for topics ranged from .70 to .93, which exceeded the What Works Clearinghouse (2017) standard of .50 (table C1). Of the seven items flagged across all analyses, six were flagged by the classical test theory analyses because they were reducing the reliability of a topic (see the end of this section for summary information on all of the items that were flagged across all the psychometric analyses).

The Rasch analysis provided evidence on how the item responses along a continuum were being used (for example, whether respondents could differentiate between the rating scale options from “to no extent” through “to a great extent”) and to what degree individual items fit the model (for example, items with poor fit might be redundant or have unclear wording; Green & Frantom, 2002; Linacre, 2017). The survey team analyzed only the teacher survey because the administrator survey had an insufficient sample size. The results showed that there

Table C1. Classical test theory analyses of the Needs Assessment Survey for American Indian Students

Topic	Number of items ^a	Reliability (on a scale of 0–1)	
		Teacher survey	Administrator survey
Culturally responsive instruction	7	.86	.86
State-specific American Indian instruction	5	.91	.78
School climate	8	.74	.74
Equity	6	.76	.81
Student attendance	5	.93	.85
Bullying	5	.91	.88
Addressing mental/behavioral/social-emotional well-being	6	.90	.76
Professional development	5	.87	.85
Teacher recruitment and retention	2 ^b	na	.70

na is not applicable because the topic is not included in the survey.

Note: The results are based on analyses of the field test data and are not final reliabilities.

a. Only scaled items were included in these analyses.

b. The final version of the survey has three items.

Source: Authors' analysis based on data from North Dakota Department of Public Instruction (2017).

were sufficient numbers of items for each topic, that there were generally high discrimination indices (between 0.5 and 2.0), that rating scales were functioning as intended, and that the reliability for each topic exceeded preset criteria. However, two items did not meet the pre-established discrimination criteria and were flagged for review.

The confirmatory factor analyses indicated the degree to which the observed data were represented in the specified latent topics. Because the sample size was small, the survey team used results from the analyses for initial, exploratory purposes and examined them in conjunction with the findings from the classical test theory and Rasch analyses. Factor loadings indicate the degree to which an item correlates with the latent construct. Higher loadings indicate stronger relationships between the survey items within a topic. The factor loadings for individual items generally ranged from .6 to .9 (table C2). Items with a factor loading below .4 were flagged and reviewed. For example, in the topic of school climate, most items related strongly with one another and had high factor loadings. However, four items did not have high factor loading, which may indicate that they measured a different topic.

The survey team examined the results from the three analyses jointly to thoroughly understand the functioning of the items. Although the overall reliabilities were high across topics, the analyses identified seven items that, if removed or revised, could improve the surveys’ reliability and validity (table C3). The survey team reworded four of the seven items to make them more specific or clearer to respondents. For example, item 6b, “To what extent do you as a teacher use instructional practices to ensure educational equity?” was changed to “To what extent do you as a teacher use instructional practices to promote educational equity (for example, differentiated instruction, instructional supports, accommodations, interventions)?” The wording of three items was unchanged. For example, item 3i, “How often does your school teach American Indian languages?” was rated fairly low by respondents, but the survey team determined that it was still important to include and might become more relevant as schools increased their instruction in Native languages.

To improve the reliability of the topic with a coefficient of .70 (teacher recruitment and retention), the survey team added another item. Typically, when items are added carefully and purposefully to an instrument, reliability improves (Allen & Yen, 2002). In this case, the survey team split an existing item—“To what extent is the recruitment and retention of high-quality educators a concern for your school?”—into two separate items because educators felt that recruitment and retention were two separate issues. Another item—“To what extent does your school or district have a specific program for recruiting and retaining high-quality educators?”—was not split because most schools have one program for addressing both issues.

Table C2. Factor loadings for the Needs Assessment Survey for American Indian Students

Topic	Loading range	Number of flagged items
Culturally responsive instruction	.45–.96	0
State-specific American Indian instruction	.53–.96	0
School climate	.09–.83	2
Equity	.08–.92	2
Student attendance	.74–.94	0
Bullying	.74–.94	0
Mental, behavioral, and social-emotional well-being	.68–.84	0
Professional development	.46–.87	0

Note: Only scaled items were included in these analyses.

Source: Authors’ analysis based on data from North Dakota Department of Public Instruction (2017).

Table C3. Items flagged during analyses

Item (wording from teacher survey)	Classical test theory (items that reduced reliability)	Rasch (items with low discrimination values)	Confirmatory factor analyses (items that had a factor loading below .4)	Revised wording
3d) To what extent are you an active resident of the local tribal community?	✓	✓		To what extent do you participate in local tribal events?
3i) How often does your school teach American Indian languages?	✓	✓		No change.
5b) To what extent do you as a teacher establish caring and trusting relationships with students?	✓		✓	No change.
5c) To what extent do you as a teacher hold high expectations for all students?	✓		✓	To what extent do you as a teacher hold high expectations for all students (for example, providing all students with challenging tasks)?
6b) To what extent do you as a teacher use instructional practices to ensure educational equity?	✓		✓	To what extent do you as a teacher use instructional practices to ensure educational equity (for example, differentiated instruction, instructional supports, accommodations, interventions)?
6c) To what extent does your school provide instructional materials (for example, textbooks, handouts) that reflect students' cultural background, ethnicity, and identity?			✓	No change.
10e) To what extent do you as a teacher feel culturally competent in teaching American Indian students?	✓			To what extent are you as a teacher provided with sufficient professional development to use culturally competent strategies for teaching American Indian students?

Source: Authors' analysis based on data from North Dakota Department of Public Instruction (2017).

Cognitive interviews

To understand the functionality and interpretability of the survey items, the survey team conducted cognitive interviews with several potential survey respondents. The interviewees included North Dakota teachers and administrators, including a teacher who was a tribal elder, in schools across the state with large proportions of American Indian students. Individuals were guided through a structured interview protocol to gather information about the clarity of the survey terminology, the usefulness of the response scale, and the appropriateness of the survey items.

As a final step, the survey development team conducted one more general review of the items (see figure C1). For several items the response scale was revised to better correspond with the item stem. For example, the scale for item 3f, “How often do you integrate culturally appropriate American Indian culture and tradition into your instruction?” was changed from “To no extent,” “To a minimal extent,” “In the middle,” “To some extent,” and “To a great extent” to ““Daily,” “Twice a week,” “Weekly,” “Monthly,” and “Annually.”

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APPENDIX D. OVERVIEW OF LITERATURE

The survey team used research literature to frame the relevant issues in each topic to ensure that the appropriate survey items were included. When possible, the literature was derived from Alaska Native, American Indian, and Native Hawaiian Native perspectives and research.

Culturally responsive instruction

Culturally responsive instruction can support student learning by engaging American Indian youth in content that is relevant and that acknowledges and supports American Indian history, worldviews, culture, and events. Similarly, pedagogy should be engaging and use a range of methods to promote individual student understanding. Students' learning can be facilitated when their culture is embraced and acknowledged in classroom practices. For example, Ladson-Billings (1995, p. 466) cites studies indicating that reading levels can improve when teachers use "language interaction patterns" that are similar to those in students' culture.

In addition, building on students' existing knowledge and connecting that knowledge to their communities can confirm to them that their experiences are valued (Morrison et al., 2008). By thoughtfully including culture, schools can improve the relevancy of education to American Indian students, work to mend trust in schools, and encourage engagement (Carjuzaa, 2012).

State-specific American Indian instruction

Many states with large proportions of American Indian students are implementing state-specific curricula and instruction that embody Native wisdom, history, and culture. For example, Hawaii, Montana, Oregon, and South Dakota have worked closely with tribal members and Native communities to bring indigenous perspectives and history into their classrooms. Hawaii's Kūpuna program offers all students opportunities to learn about Native Hawaiian language and culture and to promote stewardship of the environment (Hawaii State Department of Education, n.d.). Similarly, Montana's Indian Education for All program provides teachers with culturally relevant classroom resources about Native heritage and worldviews (Montana Office of Public Instruction, 2012). These resources help ensure that all students across the state have a common understanding of American Indian culture, as mandated by Montana's constitution. The goal of state programs is to promote awareness and equity, but implementing the programs can be challenging when teachers are unfamiliar with the content and practices.

Specific items are included in the teacher and administrator surveys as examples of how this curriculum and instruction might be measured. The survey items use the wording of the North Dakota Native American Essential Understandings. This program is similar to Montana's Indian Education for All program in that the state provides instruction resources to teachers so that all students in North Dakota learn important Native cultural and historical content.

School climate

School climate measures "the overall social and physical environment that a school creates for its teachers, students, parents, and community members" (Eight Northern Indian Pueblos Council, 2010, p. 14). Climate reflects the ways in which a school builds a culture of acceptance, respect, and community. Within Native communities, a strong school climate that includes effective leadership, strong student and teacher relationships, a welcoming climate, and respect for diverse cultures can contribute to success for American Indian students (DeVoe & Darling-Churchill, 2008; Synergy Research Group, 2011).

Equity

A critical area for schools is the degree to which they promote equity across all students in order to support improved outcomes. Structural inequities (such as differential academic and behavioral expectations) in schools can contribute to racial gaps in student achievement (Martin et al., 2016). In addition, disparities in opportunities and stereotypes have direct implications for student outcomes (Martin et al., 2016). The equity topic in the surveys focuses on access to high-quality instruction and resources as well as a positive school environment for all students, regardless of race/ethnicity or socioeconomic status.

Student attendance

Attendance presents distinct challenges for American Indian schools. First, immediately identifying students who may be at risk for low attendance is critical, as is considering the reasons that students are at risk for dropping out. Second, schools and districts should set goals and monitor the progress of interventions that seek to improve attendance, graduation, and achievement (Faircloth & Tippeconnic, 2010; Knoster, 2016).

Bullying

Definitions of bullying can vary, but the surveys employ a broad definition that involves students being exposed to negative actions, including one person imposing social or physical power over another. The actions tend to be persistent, offensive, abusive, intimidating, and threatening. Bullying can be influenced by historical trauma, family environment, and school dynamics (Campbell & Smalling, 2013; Melissa Institute for Violence Prevention and Treatment, n.d.; U.S. Department of Health and Human Services, n.d.).

Addressing mental/behavioral/social-emotional well-being

Mental health issues such as trauma, substance abuse, and suicide occur at higher rates for American Indian students than for other students (Lechner et al., 2016). Targeted interventions can improve students' social-emotional health and classroom behavior (Jones et al., 2010). Research in Native communities also indicates connections between social-emotional health (including self-efficacy and identity) and improvements in education outcomes (Fryberg et al., 2013; Kana'iaupuni et al., 2010).

Professional development

The key professional development issue for stakeholders in North Dakota was supporting teachers in implementing appropriate practices, such as culturally responsive instruction, social-emotional health, and bullying prevention. In addition, professional development should be targeted to the needs of the school (Darling-Hammond et al., 2017; Montana Office of Public Instruction, 2012; Northwest Regional Educational Laboratory, 2002).

Teacher recruitment and retention (administrator survey only)

Stakeholders in North Dakota expressed concern about recruiting and retaining high-quality teachers at schools in predominately American Indian communities. Although there is limited research that specifically addresses recruitment and retention in American Indian schools, research in rural schools suggests that effective practices include partnering with higher education, providing specific incentives, engaging the community, and sustaining efforts over time (Dwyer, 2007; Hammer et al., 2005; National Comprehensive Center for Teacher Equality, 2007).

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APPENDIX E. SAMPLE SURVEY CORRESPONDENCE

Good afternoon!

Thank you so much for agreeing to participate in the Needs Assessment Survey for American Indian Students! By completing this survey, you will help us identify and understand the needs of American Indian students across the state. The results of this survey will also help us provide the most relevant strategies, resources, and services to meet those needs. Your participation in this survey is completely voluntary, and you may skip any question or stop at any time. In addition, your responses will be kept confidential. The reports prepared for this study will summarize findings across all respondents and will not contain any information that will personally identify you to ensure anonymity. This survey should take approximately 15–20 minutes to complete.

Please complete the survey by [INSERT DATE] so that we can examine the results and provide the information to our state improvement team in a timely manner. Click on this link to access the survey [INSERT LINK].

Thank you so much for your dedication to Native students across the state!

Sincerely,

[INSERT NAME AND DATE]

APPENDIX F. ADDITIONAL INFORMATION ON RESPONSE RATES

You should take care to understand how low response rates might impact the generalizability of your survey results. Whenever response rates are low, the data may not be representative because unmeasured differences could exist between the respondents and the population of potential respondents. Missing data fall into two general categories: low numbers of responses from your population and participants skipping items in the survey. If less than 85 percent of your target population respond to the survey or to any item, consider how these missing data might impact your results.

If you have low overall participation, look at the demographic data of your respondents. Determine whether the individuals who responded represent the overall population. If your response rate was proportional across respondent groups, consider analyzing the data, but be cautious in drawing definitive conclusions. If this examination results in a determination that there are systematic differences, you may need to resurvey to obtain a higher response rate. For example, if you have a low number of responses from an elementary school in your district, you might extend the time period for those teachers to participate.

If the individuals who responded do not look like the full population in terms of demographic characteristics, you could draw conclusions specific to the educators who responded but might not be able to draw definitive conclusions about the population of educators in your school or district. For example, if you have high response rates for teachers from elementary schools but not for teachers from high schools, consider focusing your analysis on elementary schools. Always be transparent with stakeholders about response rates and any potential bias that may impact the interpretation of your results.

Next, look at the response rates to each survey item because sometimes respondents will skip items or not complete the entire survey. As with the overall population, the response rate for each item should be at least 85 percent. There could be multiple reasons that participants do not respond to an item. For example, a lower response rate for items near the end of the survey may indicate fatigue on the part of respondents. Consider whether this pattern is systematic and the degree to which it might impact the generalizability of the results. Consider eliminating items with a low response rate or interpreting them with caution. Discuss this limitation when reporting your findings.

For additional information on survey response rates, see *2012 Revision of NCES Statistical Standards: Final* (National Center for Education Statistics, 2012).

Reference

National Center for Education Statistics. (2012). *2012 revision of NCES statistical standards: Final*. U.S. Department of Education. Retrieved December 3, 2019, from <https://nces.ed.gov/statprog/2012/>.

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