Demystifying Data: The Relationship Between Data Attitudes

and Data Use Among After-School Practitioners

by

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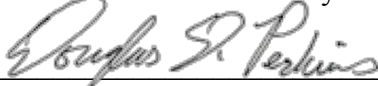MASTER OF EDUCATION

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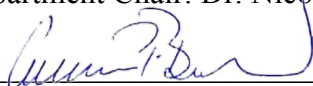
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Though many children attend after-school programs, these programs seldom undergo the level of observation and evaluation as schools do, especially regarding the incorporation of data into practice. Previous studies have shown that after-school programs have an overall positive effect on students' achievement and development (Harding et al., 2012; Seitz et al., 2021; Fusco, 2008). However, after-school programs often do not regularly use data to inform their practices (Dagenais et al., 2012; Mahoney, 2016), which can prevent them from meeting the diverse needs of their students in equitable ways (Datnow & Park, 2018; Garner et al., 2017). Many conditions lead to increased data use, but a frequently-cited condition is having a positive attitude toward using data (Luo et al., 2022; Schildkamp & Datnow, 2022). While scholars have increasingly examined teacher and school administrator data use, few studies have investigated data use among after-school program practitioners. These practitioners often work with youth development organizations that offer educational and recreational programming for students in their communities. Their roles include tutoring students in school subjects and monitoring students as they complete their schoolwork. Though they do not usually hold formal education degrees, they work with youth in a mentor-student relationship, which can be quite impactful on students' personal and academic achievements.

The purpose of this mixed-methods study is to investigate the ways in which practitioners' attitudes affect their data use. Because after-school program practitioners work in unique contexts with both schools and non-profit organizations, practitioners face different challenges than school-based staff when accessing data. Understanding the meanings that after-school program practitioners attribute to data use and their barriers to data use enables

organizations to proliferate data-informed practices. This study will further explore the meanings that practitioners attribute to their data use practice, as well as the conditions that foster their data attitudes and practices.

Literature Review

Understanding the Context

Schools embedded within underserved communities often struggle to meet the diverse needs of their students. Students who attend schools where the majority of students are from lower socioeconomic backgrounds learn slower than students in schools of middle- and upper-class backgrounds (Palardy, 2008). A commonly cited challenge for under-resourced schools is the ability to hire and retain experienced teachers to meet the learning needs of the students (Palardy, 2008; Riordan, 2022). Moreover, schools serving vulnerable students are often required to meet extra accountability requirements set by education departments, leaving school practitioners with less flexibility to solve problems within their buildings (Klein, 2017; Riordan, 2022). These compounding challenges lead schools and families to seek additional resources for their students from outside organizations or government-funded programs.

Out-of-school programs, such as after-school care and pre-schools, can lead to both improved academic achievement in school and improved child development. When studying students who had participated in Supplemental Educational Services, Harding et al. (2012) found that students significantly increased their reading and math scores. Seitz et al. (2022) learned that when youth are consistently engaged in an after-school program, they are more likely to have positive academic outcomes. Furthermore, both preschool and after-school programs have additional developmental opportunities for students and can help mitigate developmental disadvantages that students from lower socioeconomic backgrounds face (Epstein, 1999; Fusco,

2008). However, only 18% of Tennessee students attend an afterschool program; of the 18% of students attending, 12% attend a program that is Federally funded through 21st Century Community Learning Centers (Tennessee Afterschool Network, 2019). Overall, previous research shows that out-of-school youth programming has a positive impact on students, but most research is done with the small minority of Federally funded afterschool programs. Additional research is needed to understand the experiences of students who attend the diverse afterschool programs that are unregulated by the federal government.

While many programs serving youth and families are effective and produce positive outcomes, parents and school practitioners continue to have a hard time finding quality services. For example, Klumpner and Woolley (2021) found that students who were eligible for government-subsidized after-school programs often did not have access to them. In Tennessee, of the 82% of students not enrolled in an after-school program, 31% would like to be enrolled (Tennessee Afterschool Network, 2019). Furthermore, research suggests wide disparities in the education quality of early childcare programs across for-profit centers, non-profit centers, public school centers, and government subsidized programs (Epstein, 1999; Bayly et al., 2021). Many out-of-school programs fail to incorporate empirical research and data-driven practices into their work (Dagenais, 2012; Mahoney, 2016). While out-of-school programs can lead to positive developmental outcomes and increased academic achievement for students, the lack of regulation prevents an accurate measurement of impact.

Current Data-Driven Practices

While many school district leaders promote data-driven practices, practitioners and administrators report barriers to accessing necessary data. Stalnecker et al. (2022) found that administrators often wished that they received more data reports from social workers in their

schools to understand the impact of social services on students. Moreover, schools have the highest access to student data, though that data is not frequently passed to district administrators who are the main decision-makers (Wohlstetter et al., 2008). Levin and Datnow's (2012) study found that principals must be data-literate themselves in order to promote data-driven practices among teachers; if principals are not data-literate, then they cannot interpret data findings for their staff. For schools to have data-driven practices, the data must be accessible at all levels.

Even when school practitioners have adequate access to data and research, they will often look to other places for evidence and will not necessarily modify their practices. Mahoney (2016) found that after-school practitioners did not use empirical research or student data to inform their practice; instead, they learned from other programs, attended trainings, and observed other practitioners. Ross and Morrison (2021) also found that practitioners preferred learning from other programs and local studies to using empirical evidence. Furthermore, teachers do not often feel as though they have enough agency to change their practices based on data, especially when they have high accountability requirements in their schools (Lockton et al., 2019). Having access to data and research alone does not change practitioner behavior; if the goal is to have data-driven practices, school leaders must examine additional influences on data use.

The Importance of Data Use

Negative Outcomes

Though data use can have many positive outcomes, data can also be used in harmful ways. Practitioners often use student assessment data and grades to place students in different learning groups, such as advanced placement or remedial courses; however, these classifications can allow teachers to reduce students to their assigned groups while not taking into account the various environmental factors that contribute to their learning (Datnow et al., 2018; Datnow &

Park, 2018; Park et al., 2016). Categorizations based on student data can also lead to practitioners making assumptions about students' abilities and modifying students' educational paths based on those assumptions (Datnow & Park, 2018; Schildkamp & Datnow, 2022; Datnow & Hubbard, 2015a). Without an intentional equity lens on data-informed practices, practitioners run the risk of using data to escalate educational inequities (Garner et al., 2017; Datnow & Park, 2018). Assessment data should not be the only evidence used to make educational decisions for students, as data do not tell the whole picture of students' abilities.

Not only can data-driven practices harm students, but they can harm practitioners as well; using data to promote strict accountability practices often has harmful consequences for practitioners. Having an accountability-only lens can lead to practitioners feeling restricted and unable to problem-solve based on the needs of their students (Schildkamp & Datnow, 2022; Garner et al., 2017). Cultures of accountability often use data against teachers by highlighting deficits, rather than prompting them to make instructional changes based on the data (Datnow & Hubbard, 2015b; Lockton et al., 2020). Promoting accountability systems for teachers based on student data can leave teachers with negative attitudes toward data use and unlikely to use data to modify their practices (Datnow & Hubbard, 2015b). Though schools must adhere to student achievement outcomes set by state-level departments of education, administrators holding practitioners to high accountability measures can set schools back.

Positive Outcomes

When used appropriately, data can inform policies and practices to improve learning and developmental outcomes for students. Previous studies show that school practitioners who feel compelled to incorporate student data into their lesson planning will modify their lessons to meet the diverse learning needs of their students (Prenger & Schildkamp, 2018). Specifically, when

school leaders focus on taking a continuous improvement approach, rather than accountability only, teachers feel more empowered to examine data and research than make changes based on evidence (Datnow & Park, 2018). When school policies allow for practitioners to meet and discuss student data regularly, they dug deeper into the students' backgrounds and learning (Datnow et al., 2018). Datnow et al. (2012) found that teachers who were open to interacting with data also sought input from other practitioners and students to make their lessons more impactful and effective. Data-driven decision-making aids practitioners in tailoring learning for their students, which leads to improved academic achievement.

Depending on the ways in which data are used, they can boost equity among students. As previously discussed, student data can sometimes reinforce practitioners' perceptions of students' abilities, which can disproportionately impact students of color and/or of lower socioeconomic backgrounds. Datnow et al. (2018) found that school practitioners utilized data discussions to move beyond the state assessment data as their sole evidence for categorizing students' abilities; they discussed the students' circumstances and strengths with other teachers to form tailored educational plans. Moreover, when school leaders promoted data use by focusing on the strengths and growth of students, schools implemented more equitable practices for their students (Park, 2018; Park et al., 2017). Park and Datnow (2017) found that teachers are also able to spot patterns in their students' data to see whether their students are understanding the materials equally; if not, they can then modify their instructional practices to meet the learning needs of all students. As long as schools promote equitable data use, school practitioners are able to break pre-conceived notions of students' abilities and establish more equitable teaching practices.

Conditions that Promote Data Use

Positive Attitudes

While many factors influence practitioner data use, one of the most commonly cited conditions that promotes data use is a positive attitude. Schmidt and Datnow (2005) found that teachers' emotions play an important role in the sense-making process of school policy changes; when implementing policy changes in their classrooms, teachers often need reforms with "shared, consistent, informed definitions" in order to feel positive about making changes in their classrooms (p. 955). Moreover, Schildkamp and Datnow (2022) discovered that when teachers have negative attitudes toward the ways that data can be implemented to improve classroom practices, data becomes ineffective at changing teachers' practices. Having a positive attitude coupled with intention to improve leads teachers to incorporate data-informed practices in their classrooms (Luo et al., 2022; Schildkamp & Datnow, 2022; Prenger & Schildkamp, 2018; Wayman et al., 2010). To improve practitioners' attitudes toward data use, schools can focus professional development on building positive beliefs toward using data, increasing capacity to incorporate data, and placing less emphasis on external accountability (Datnow & Hubbard, 2015). Facilitating positive attitudes toward data use is one of the best ways schools and organizations can promote data-informed practices among their practitioners.

In addition to positive attitudes toward using data, practitioners' relationships with other practitioners affects their likelihood to incorporate data into their practice. Passion and a positive attitude can be spread through work-place relationships (Ho et al., 2021). Luo et al. (2022) found that teachers who have supportive relationships with other teachers are more likely to use data to inform their practices. Furthermore, schools that facilitate trusting relationships among teachers and staff are more likely to have practitioner buy-in to using data-informed practices (Levin & Datnow, 2022; Wayman et al., 2010). When schools do not have trust between administrators

and practitioners, their data use intentions often fail (Schildkamp & Datnow, 2022). Teachers who lack supportive relationships in schools have a more challenging time interpreting student data and the ways in which they can use data to inform their practice (Datnow et al., 2012). A supportive work environment can foster data-driven initiatives by promoting positive attitudes and relationships among staff.

Organizational Practices

An important way that schools and organizations can promote data use among staff is by introducing data use policies. Dagenais et al. (2012) found that schools that utilize research-based practices often encourage and support research initiatives by intentionally allocating resources toward the initiatives. Moreover, organizational culture can be vital to increasing data-driven policies. An internal organizational culture that demystifies data and removes barriers toward using data, such as lack of access, leads to increased data-driven decision-making (Kline & Dolamore, 2019; Wayman et al., 2010). Datnow et al. (2012) explained, "Systems and schools enabled teachers to use data by establishing structural supports and creating cultures of continuous improvement" (p. 262). However, schools need to be careful in the research and data use they promote. When schools promote using outdated research or data-informed practices without also including explicit ways to apply research and data, teachers may not improve their instruction or could change their instruction for the worse (Riordan, 2022). Overall, studies show that schools need to be clear and explicit in their data-use policies to facilitate positive data-informed practices.

Teachers often struggle to have enough capacity for new initiatives due to being overworked and under-supported, which leads to them being less likely to incorporate data-driven practices. Wohlstetter et al. (2008) found that building capacity to incorporate data into

practice is a necessary, though not sufficient, condition to successfully facilitate data-driven decision-making. Schools can use professional developments geared toward building staff's capacity by focusing on their beliefs about their data abilities to boost data use (Datnow & Hubbard, 2015b). For example, Park (2018) observed that teachers felt more capable of using data to inform practices when administrators intentionally formed data discussion groups for staff. Additionally, at the school level, administrators can put resources, such as funding and training, toward data-informed practices in order to improve their staff's capacity (Marsh & Farrell, 2015). If a school lacks resources and time dedicated to data, staff are unlikely to adopt data-informed practices.

As mentioned previously, professional development and training on data-informed practices are an important aspect of elevating staff's abilities, capacities, and attitudes around data use. Teachers often report that they lack the skills to implement data practices in the ways that their school policies require of them (Datnow & Hubbard, 2015b). When practitioners lack the skills to interpret research, they are less likely to utilize research to modify their practices (Ross & Morrison, 2022; Wayman et al., 2010). Mahoney (2016) argues that practitioners need to be trained in translating research into practice, starting as early as undergraduate programs, and that organizations need to invest in hiring research-trained practitioners. Furthermore, Datnow and Hubbard (2015a) learned that a lack of professional development often decreases practitioners' implementation of data practices as well as their data attitudes. To ameliorate the gap between research/data and practitioner, organizations need to provide training to their staff; without the proper training, staff are unable to meet the data policies' goals.

Theory

The main theory informing my study is the systems framework for understanding social settings from Tseng and Seidman (2007), shown in Figure 1. Tseng and Seidman (2007) highlight the importance of social processes, resources, and the organization of resources when examining social settings around programmatic interventions. Tseng and Seidman (2007) explain how the model operates: "Changes in resources and the organization of resources also can operate as levers, stimulating change in the social processes and hence setting outcomes" (p. 218). Social processes are made up of the norms within the social setting, relationships among participants in the setting, and the participation of activities when in the setting (Tseng & Seidman, 2007). Based on the model, after-school practitioners would need access to student data as well as training and organizational infrastructure to support data use to modify social processes. For social processes to change, practitioners would also need to address their own data attitudes as well as build relationships with coworkers who have positive data attitudes and practices. Once these conditions are met, organizations can expect to see data-informed practices from their practitioners.

Current Study and Research Questions

Most of the research about data-informed practices centers around teachers and administrators, with few studies examining out-of-school program contexts. Given that nearly one-fifth of Tennessee students attend an afterschool program (Tennessee Afterschool Network, 2019), these spaces play a potentially important role in students' educational outcomes. Educational experts increasingly view afterschool programs as contexts that can support student academic achievement, especially for students who are struggling to meet basic grade-level academic benchmarks. However, compared to schools, it is less clear that out-of-school programs have the resources to meet these demands. In particular, afterschool program leaders

may or may not have a background in teaching or youth development and may not have the training or experience to use data. Furthermore, little is known about data-use practices of those programs. This study will begin to fill this gap in the literature examining the data use attitudes and practices of after-school program practitioners. Specifically, using a mixed-methods design, it will investigate the following questions:

- Are practitioners' attitudes toward using data associated with reported data use?
    - o Do participants who report positive attitudes towards using data also report high data use?
    - o Do participants who report negative attitudes towards using data also report low data use?
- Are there places where participants have conflicting data attitudes and data use?
- How do practitioners explain the dissonance between their data attitudes and data use?

Upon reviewing literature on data use in schools, I hypothesize that positive attitudes toward data use will be associated with increased data use. Additionally, based on literature, I believe organizational and interpersonal factors will moderate participants' data use, such as training/professional development opportunities (Wohlstetter et al., 2008), school staff and practitioner capacities (Marsh & Farrell, 2015), and school data policies (Datnow et al., 2012).

Methods

The data I use in this study were collected by Dr. Kimberly Bess, the principal investigator (PI) and her team in the spring of 2016. Dr. Bess' data collection goals were to investigate social network connections, organizational learning, and data use culture among Nashville After Zone Alliance (NAZA) practitioners.

Setting

The focus of the PI's data collection was the Nashville After Zone Alliance (NAZA) and their data-sharing partnership with Metro Nashville Public Schools (MNPS). NAZA describes their work: "…NAZA has invested public and private funding in afterschool and summer programs to ensure that all youth have access to high-quality programs at no cost" (Nashville After Zone Alliance [NAZA], 2022a, para. 2). NAZA's funded partners receive access to "programs space, meals and snacks, transportation, and student data to inform programming" through MNPS (Nashville After Zone Alliance [NAZA], 2022b, para. 2). Additionally, NAZA has affiliated partners, who do not receive funding but do still receive access to data-sharing with MNPS (NAZA, 2022b). Some NAZA practitioners host their programs on school grounds and others bus the students to off-campus locations. Within the data-sharing partnership, after-school practitioners were able to access student data through "data designees", who were usually MNPS staff members.

Participants

The PI and research assistants conducted interviews with NAZA practitioners in various positions: Zone Directors, Program Managers, Site Coordinators, and NAZA Leadership. The PI used non-probability sampling methods by reaching out to NAZA employees who work with MNPS via email and phone call. Participants were compensated for their time with a $50 gift card. For my analysis, I only analyzed data from participants who were Program Managers and Site Coordinators (n=39), as I wanted to analyze the program practitioners rather than the leadership team who all had positive attitudes toward data use. For the qualitative analysis, I analyzed approximately half of the Program Manager and Site Coordinator participant interviews (n=19). Participant demographics can be found in Table 1.

Materials

The PI and research assistants collected data by conducting semi-structured interviews to measure social network connections, organizational learning, and data use culture. The interview consisted of 76 questions, not including demographic questions, and lasted around 90 minutes (see Appendix for the interview script). Of the 76 questions, approximately 25 are open-ended, and approximately 50 are Likert scales. For my quantitative analysis, I examined two questions that used Likert scales. To operationalize my data use frequency dependent variable, I examined the question: "How frequently do you use MNPS data?" Participants responded on a six-point scale ranging from "never" to "a few times a week." To operationalize my data attitude independent variable, I examined the question: "To what extent do you agree with the following statement: I like to use data?" The level of agreement was on a four-point scale ranging from "strongly agree" to "strongly disagree." For my qualitative analysis, I examined the responses to the open-ended questions and the probing follow-up questions.

Procedure

The interviews were conducted in-person and captured with audio recordings. The recordings were then transcribed using Rev. For my qualitative analysis, I did thematic coding of the interview transcriptions using Microsoft Word and Excel. I started examining interview transcriptions of participants that responded to "I like to use data" with either "strongly agree" or "strongly disagree," then randomly selected participants who responded "agree" or "disagree" until I reached saturation.

The quantitative data was stored in SPSS and Microsoft Excel files. To conduct my quantitative analysis, I used Stata version 17.0. To prepare my data for analysis, I retained the ordinal version of the data attitude variable, though for the ordinal data use variable, I combined participants who responded, "I do not have access to MNPS data" with those who responded,

"never," creating a larger "never" category. The participants who reported that they did not have access to data did have access to MNPS data through the data-sharing partnership; however, they did not access the data for a variety of reasons (such as lack of awareness or inability to meet with their designees). The participants who responded, "never" gave similar reasons for not using data; thus, I combined these two groups for my quantitative analysis. Moreover, I created a binary version of the data attitude variable by transforming the "I like to use data" scale by combining "strongly agree" with "agree" and "strongly disagree" with "disagree," with "strongly agree" and "agree" labeled as "positive attitude" and "strongly disagree" and "disagree" labeled as "negative attitude." To create a binary version of my data use frequency variable, I labeled "never" as "no use," and I combined "less than once a month," "once or twice a month," "weekly or almost weekly," and "a few times a week," labeled as "some use." Because many participants did not have regular access to data, I decided to group them by use based on whether they used data at any amount. When examining the binary versions of the independent and dependent variables, I ran a test of proportions. To analyze the ordinal versions of the independent and dependent variables, as well as ordinal-binary combinations, I ran Goodman and Kruskal's gamma and Fisher's exact test due to the small sample size and uneven distribution (Goodman & Kruskal, 1954; Fisher, 1922).

Results

I have organized the results by the research question that I am trying to answer. My first research question only used quantitative analysis to examine the statistical relationship between data attitudes and data use rates. The second and third research questions were analyzed through qualitative analysis to better understand the ways that participants' reported data attitudes in Q1 were either confirmed or contrasted by participants' open-ended responses.

Q1. Are practitioners' attitudes toward using data associated with reported data use?

Of the 39 participants in my sample, one participant had missing data. I performed a listwise deletion, resulting in a final sample of 38 participants. Descriptive statistics for both the ordinal and binary versions of the data use frequency variable and the data attitude variable can be found in Table 2. Overall, the majority of participants held a positive attitude toward using data (50%; see Figure 2) and used data less than once a month (34%; see Figure 3). To see binary versions of the data attitude and data use variables, see Figure 4 and Figure 5, respectively.

Test of Proportions

I found a significant difference between the data use rates for participants with positive data attitudes (79%) and negative data attitudes (50%). I can reject the null hypothesis that participants with positive data attitudes will use data at the same rates or less frequently than participants with negative data attitudes (z=-1.710; p=0.043). See Table 3 and Figure 6 for the test of proportions results.

Goodman & Kruskal's Gamma and Fisher's Exact Tests

Because of the small sample size and uneven distribution, I ran four iterations of the gamma coefficient and Fisher's exact test using combinations of the binary and ordinal versions of the data attitude independent variable and the data use dependent variable. None of the tests yielded significant results.

Binary IV x Binary DV. See Table 4 and Figure 7 for the gamma coefficient and Fisher's exact test result for data attitude (binary) and data use (binary) variables. The gamma shows a moderate positive correlation between data attitude and data use, meaning that as data attitude becomes positive, participants' data use increases from no use to some use (gamma=0.571). The relationship between data attitude and data use is not significant (p=0.098).

Ordinal IV x Binary DV. See Table 5 and Figure 8 for the gamma coefficient and Fisher's exact test result for data attitude (binary) and data use (ordinal) variables. The gamma shows a mild positive correlation between data attitude and data use, meaning that as data attitude becomes positive, participants' data use increases (gamma=0.378). The relationship between data attitude and data use is not significant (p=0.378).

Binary IV x Ordinal DV. See Table 6 and Figure 9 for the gamma coefficient and Fisher's exact test result for data attitude (ordinal) and data use (binary) variables. The gamma shows a mild positive correlation between data attitude and data use, meaning that as data attitude becomes more positive, participants' data use increases (gamma=0.120). The relationship between data attitude and data use is not significant (p=0.063).

Ordinal IV x Ordinal DV. See Table 7 and Figure 10 for the gamma coefficient and Fisher's exact test result for data attitude (ordinal) and data use (ordinal) variables. The gamma shows a very mild positive correlation between data attitude and data use, meaning that as data attitude becomes more positive, participants' data use increases (gamma=0.072). The relationship between data attitude and data use is not significant (p=0.296).

Q2. Are there places where participants have conflicting data attitudes and data use?

To answer my second question, I used participants' qualitative interviews to examine how they described their data use rates and their attitudes toward using data in their work. Based on their responses, I mapped participants on a 2x2 matrix where the horizontal axis represents data attitude from negative to positive (left to right) and the vertical axis represents data use rates from low to high (bottom to top). This matrix was created using Miro and can be viewed in Figure 11. Using this matrix to map participants into four groups based on their data use rates and data attitudes, I found that 9 out of 19 qualitative interviewees (47%) had conflicting data

attitudes and data use behaviors, with four participants having negative data attitudes and high data use and five participants having positive data attitudes and low data use. I examined the trends of these nine participants compared to the participants who had congruent data attitudes and data use to examine my final question.

Q3. How do practitioners explain the dissonance between their data attitudes and data use?

Overall, participants had thematically varying answers as to why they liked or disliked using data, facilitators and barriers to using data, and additional data trends, such as definitions of data, previous experience using data, and data sources. The thematic codes and frequencies can be found in Table 8. The two groups of participants that held congruent data use rates and data attitudes (high use/positive attitude and low use/negative attitude) represent what would be expected when examining the relationship between data use and data attitudes, based on previous research. An average participant with high data use and a positive attitude toward using data would have the following traits and conditions: previous experience using data; a well-rounded definition of data, including attendance rates, academic performance, and program metrics; source their data from data designees, Zone Directors, and MNPS staff; like using data to track academic performance, inform practice, and gain student insights; no reasons to dislike data; many data facilitators, including professional development, Zone Directors, helpful coworkers, and a positive data culture; few barriers, such as not enough training, a negative data culture, and not enough access to data. One high use/positive attitude participant explained why they enjoy using data in their after-school programming:

> "Then it helps in programming, as far as I'm actually catering to your needs. I think that's the kind of cool thing, even though I have a rather large program, to be able to get the kind of information that I need, to kind of tailor it to be one-on-one makes it super valuable, which is why I use it. [...] It gives insight into my students as far as their grades and their behavior. Some things happen at home that affect school, you can see those, you

can see that in the data. It helps you formulate a plan on how to handle your students and how to set them up for success."

As for participants with low data use and a negative data attitude, an average participant would have the following traits and conditions: little previous experience working with data; a mixed definition of data; somewhat likes data to track academics and inform lesson planning; few data sources; dislikes data because it does not represent the full picture, is not helpful, and is difficult to use; few data use facilitators, including the data designees and Zone Directors; many data barriers, such as lack of training, no or little access, and lack of knowledge on how to access and implement data. One participant with low use/negative attitude explained why they did not like to use data:

> "Sometimes I just don't trust it. I feel like our culture manipulates data so much that you can make it say whatever you really want it to say. I know there's an alien inside of me that's like, 'I know your bar graph is skewed somehow. I don't like the way you're presenting it,' because all it is to me is this biased piece of information. I could make one too. That's how I feel. You want me to make one too that shows my perspective, and how you should listen to me? As if data is like this god, you know, but it's not."

These participants with congruent data use rates and data attitudes act as a control group with which the groups with conflicting data use rates and data attitudes (high use/negative attitude and low use/positive attitude) can be compared.

Differing Definitions of Data

In general, participants held similar definitions of data regarding the kinds of data they used for their program, but there was not a shared definition of data used by all participants. This trend is the same across all four groups of participants. The types of data mentioned by participants include school attendance, academic performance, personal student data, programmatic data, and others. 16 participants mentioned that they use attendance data, and 15 participants said that they look at students' academic performance through grades (via progress

reports and report cards) or state-level tests, such as the Tennessee Comprehensive Assessment

Program (TCAP). As for programmatic data, 14 participants said that they measure students'

participation in the program or measure specific program outcomes, such as reading

comprehension or math skills. One participant who had high data use and a positive data attitude

explained how they incorporated students' reading scores into their program:

> "The data helps us in terms of what focus areas to hone in on in terms of what we deliver
> to the kids, especially in the after-school programs. If the data is suggesting low reading
> scores, then it makes us have a stronger emphasis in terms of our lesson planning and do
> more around reading and literacy, and those kinds of things. So those scores will kind of
> dictate what it is that we need to provide more of and less of, that kind of thing."

Some programs mentioned having specified requirements, such as being below a certain income

level, to participate. About half of participants looked at personal student data, such as mental or

physical health conditions or home life circumstances, such as poverty rates. Lastly, only three

participants mentioned using additional data sources, such as neighborhood-level trends,

academic articles, and studies done with other programs.

Differing Data Sources

Under the NAZA-MNPS data-sharing partnership, participants should have been able to

access data by reaching out to their "data designee," who was usually a school employee that had

access to student data. This process was put in place to comply with FERPA guidelines. In the

interviews, participants identified many different data sources that they had gone to previously.

The two most frequently accessed data sources across all participants were the data designees

and the NAZA Zone Directors, each reported by about half of the participants. The Zone

Directors sometimes worked with participants to access and interpret student data. Almost half of

the participants stated that they accessed data from general MNPS staff, such as counselors,

secretaries, or principals. At some schools, the counselors were the data designees, but not

always. Moreover, eight participants explained that they gathered data from the students directly, usually by asking to see their report cards and progress reports. Four participants reported that they were able to access MNPS' data system directly and gather information that way. Less common data sources included direct observations of the students by tracking behaviors, students' parents and caregivers, or their coworkers who had better access to data. These data source trends did not vary between groups.

Data Experience

One of the largest differences in participants who used data frequently versus those who did not was whether they had previous experience with data. Overall, 14 participants had previous data experience. All of the participants who fell into the "high data use" category had previously worked with data, regardless of their attitude toward data. Less than half of the participants in the "low data use" category reported any previous experience using data, regardless of their attitude. One participant with high data use and a positive data attitude explained that having experience using data is helpful in their current work: "I already have a little awareness and background with using data, so it's just a little easier when it comes to kids." The experience levels ranged from reading occasional newsletters about other programs' outcomes to taking statistics courses in college and implementing those skills in their current programs.

Data Attitudes

When looking at reasons why participants liked data, the three themes were that they can track students' academic needs, use data to inform their programming (i.e., lesson planning), and gain insights to students' experiences. Participants who used data at high rates but had negative data attitudes had the fewest comments on why they liked data. Half of high use/negative attitude

participants said they liked that data allows them to track students' academic performances and modify their lesson plans; a quarter of them said that they found data insightful to students' experiences. However, one participant explained that these insights could also be harmful to their practice due to the potential for bias:

> "…when I have a suspicion about how a student is performing, or if I have a suspicion about a student's, like, mental or health condition, I personally sometimes don't want to know unless it becomes disruptive or really an issue where this underlying issue is becoming a focus in the program. I usually try not to focus on these kinds of things because then, I think, I develop a mindset of how the student will behave because of underlying… said underlying mental or health conditions or academic performance. I usually try not to lean on data in this sense."

Furthermore, when examining the response of participants who had low data use and positive data attitudes, many of them reported the same three themes. Four of the low use/positive attitude participants reported that they liked that student data can be useful in tracking academic performance and lesson planning; two said that data provided insights to students and their families as well. One participant explained that data could be helpful in serving their students and families:

> "If data informs after school program practice, then staff can know things that students, especially middle schoolers, aren't always going to tell them or be able to tell them. Also that parents don't know. […] We work with immigrant families, and so parents in our community aren't as informed because of language barriers or other things that help them be able to navigate the school system. Our staff are bilingual and bi-cultural and can navigate that system and be a real link between students and parents, and schools and parents. The more that our staff can have information, the more effectively they can serve in that role."

When examining the reasons that participants disliked using data, the three dominant themes for both groups were that data does not always show the full picture of students' experiences, data is not helpful to their work, and relationships are more important than using data. Of participants who had high data use but negative data attitudes, half reported that data was not the full picture and was unhelpful, and one reported that they preferred relationships as

sources of information to examining data. Some high use/negative attitude participants did not

report any reasons for disliking data; they saw some benefits of using the data but simply did not

enjoy the process themselves. One participant felt that while data can be helpful at times, data are

not always valid:

> "The thing with surveys is that it gives you a general idea, but it's just all… People can say whatever, or they can say never, never, never, but it's not, so there's value in it, but at the same time, I can't see how it helps me with my day-to-day stuff."

Moreover, participants who had low data use and positive attitudes toward data often did not

have access to data; but, the data they did have access to did not always serve their data needs.

These participants explained that they preferred relationships to using data, the data they did

have access to was not helpful, and that data did not always accurately represent their students.

One participant explained that data did not serve their programming and that they preferred

planning lessons based on their relationships with the students:

> "I just base the activities and the things that we do in our program off of the vibe of the students or the way I see that they need help. Just depending on what they're interested in or how they're feeling. That's the way that we do our activities."

Facilitators for Data Use

Participants in all groups listed many facilitators for data use. The facilitator trends were

similar for both low use/positive attitude participants and high use/negative attitude participants.

A high majority of participants in both groups stated that their Zone Directors were positive

influences on their data use practices, which was the most common response by far. For

example, one participant described that the data partnership between NAZA and MNPS was a

step in the right direction for implementing data practices:

> "You know, there's a lot of work that could happen with data when it comes to NAZA. I think the fact that the data-sharing agreement exists, and they've been able to figure that out, I think if we were operating a stand-alone after school program, it would be a lot

harder for an organization like ours to get to that level of access. I'm glad the potential is there at least."

Many participants described ways in which their coworkers helped them with accessing and understanding data, including coworkers within their own organizations, the NAZA leadership, or MNPS staff members. Four participants said that their data designee was a data facilitator by providing them with the data for their programs. Additionally, three of the participants with low data use/positive attitudes said that professional development and training sessions involving data enabled them to view and analyze student data. Several less commonly cited facilitators for data use included a positive data culture, meaning that participants were encouraged to use data by other staff and organizational policies, and being self-motivated to incorporate data into practice.

Barriers to Data Use

Overall, participants with low use/positive attitudes reported more barriers than participants with high use/negative attitudes. The two most common barriers reported by both groups were having no access or not enough access to specific data and not having enough training and professional development on the ways to best incorporate data into program practices. A participant with low data use/positive attitude explained that they enjoy data professional development sessions and using student data, but they do not receive enough training or access to be able to use data at a higher level:

> "We get some data during the data-dive each year. That's always helpful to be with the, hopefully, administrators or other people at the school who can help think about what data looks like for their particular school community, but I think beyond that, there's a lot of space to get data or to get more timely data on an ongoing basis that could really help our staff make programmatic decisions accordingly."

The training opportunities are additionally important because three participants reported that a barrier for their data use is that they do not know how to incorporate data into practice.

Moreover, three of the low use/positive attitude participants and two of the high use/negative attitude participants reported that the data systems were difficult to use and prevented them from accessing data. A participant who had high data use but a negative data attitude explained that while they did use data in their work, the system made the process more difficult and turned them off of using data:

> "Yes, well, I would say what we have is useful, too. It's more like functionality, it's definitely a detriment, I think. It's not just that it's not really, it's lacking, but it is kind of a detriment because this is something that comes up a lot in how we can go about, in our daily lives, using the data system. I hate to be the luddite who always favors non-machine over the machine, but, in this case, those who have sufficiently trained themselves to use the data system are still… They find a kind of aggravation, I should probably put myself in this category as well, in its use and functionality."

Two participants in each group found that finding time to meet with their data designees or other staff members to access data was a large barrier, usually because many of the data designees and MNPS staff were no longer working when the after-school programs took place or because of high employee turnover in data designee positions. One participant with low data use and a positive data attitude explained that data access for after school practitioners did not seem like a priority for data designees, especially when turnover was high:

> "I know at least at one of our sites, there's been quite a bit of turnover with that data designee position. Whenever staff turnover happens, just like with anything, it's hard to establish relationships and to get that information. I think that probably… I don't think it's actually somebody not being willing to give us data, it's just that there's a lot going on and organizationally and logistically, that, probably for a lot of really understandable reasons, isn't a priority."

Furthermore, two of the high use/negative attitude participants and three of the low use/positive attitude participants described that the negative data culture prevented them from being able to effectively use data and have a good experience doing so. As described by participants, the negative data culture usually meant that the staff around them made accessing data more difficult and did not explicitly promote data use. One participant who had low data use but a positive

attitude toward data explained that while they did not have anyone telling them not to use data, the data culture was discouraging:

> "I know other programs where I work, they have access to things at schools that I don't have access to. I don't feel like anyone's discouraging me and telling me not to use data, because that seems very counter-productive. But the fact that I don't have access to something is discouraging. I don't know how much I would really look at stuff. Actually, I would. To see when kids are in school and not, or how they're really doing in school. But there's not an entity that is telling me I can't access it, that I shouldn't be."

Lastly, several less frequently mentioned barriers included the lack of desire to use data, being unaware of the data partnership, and parents not approving of practitioner data access (in addition to FERPA regulations).

Discussion

With this study, I sought to investigate the relationship between data attitudes and data use rates among after-school practitioners, examine whether there were any instances of dissonance between data attitudes and data use among practitioners, and understand the ways in which practitioners made sense of that dissonance. I found that having a positive attitude toward data is associated with increased data use when compared with having a negative attitude toward data use. Moreover, about half of the qualitative interviews I examined showed that participants had dissonant data attitudes and data use rates, which was frequently due to contextual facilitators and barriers toward data use.

Quantitative vs. Qualitative Discrepancies

Few studies have quantitatively examined the relationship between data attitudes and frequency of data use, especially among after-school program practitioners. With my quantitative analyses, I found that having a positive attitude towards data is significantly correlated with higher rates of data use. Four out of five of my tests were not significant. Binarizing data attitudes allowed me to have more distinct groups of participants based on their attitudes, which

led to significant differences. While the quantitative analysis was an effective way to examine the interaction between data attitude and data use, I found that the qualitative analysis added context and explanation that the quantitative analysis alone did not provide.

Most participants "agreed" that they liked to use data, even though their qualitative interviews indicated that they did not have as strong of a positive attitude towards data as they had indicated on the scale. Several participants indicated that they liked using data on the scale, however, they followed up with comments about distrusting data or not understanding data. This discrepancy is likely due to social desirability. Data collection and analysis are important aspects of measuring program outcomes and impact; many nonprofits have been increasingly pushing their practitioners towards data-based practices. Thus, it is likely that the participants have heard the same message that data is important and useful to after-school programs, and in-turn, they likely over-reported the extent to which they actually like using data.

Dissonant Data Attitudes and Use

The participants who used data at high rates but had negative attitudes towards data seemed to understand that data was important and useful to their practice, though they did not like using data themselves. They seemed to have had previous negative experiences with using data, especially experiences where they had seen data being used in a harmful way or in a way that misconstrued the truth. Previous negative experiences with data led to a mistrust in data and belief that data do not represent the students. Furthermore, these participants reported having limited access to the data they needed, and thus they often had to gain access to data through sources other than their data designees.

The participants who used data at low rates but had positive data attitudes mostly lacked access to data and training on the ways in which data can be utilized to inform practice. Only a

couple of these participants had previous experience working with data, which seemed positive. The others who did not have previous experience still spoke highly of the ways that their coworkers and supervisors used data. Many of these participants mentioned that while the annual professional development and training sessions were extremely helpful, they were not frequent enough to give better access to data and provide them with the skills they needed to analyze it. For this group of participants especially, the data designees were an unreliable access point to data, and the participants felt they did not have many other sources. For some programs, the participants' only source of data were the students themselves.

Overall, data use was highest when participants had both previous experience using data and few contextual barriers to accessing data. The data-sharing partnership provided more access to student data than organizations would have had otherwise, and when participants did have stable access to data through their data designees, data use was frequent and impactful for program practitioners. However, the data-sharing system often was not as effective as intended, with many participants not having adequate access to the data they needed.

Implications

My findings, both qualitative and quantitative, support previous research that emphasized the importance of data attitudes when using data and that contextual barriers are often more impactful than attitude alone. Additionally, these findings support the theoretical framework for understanding social settings by Tseng and Seidman (2007), as shown in Figure 12. Participants often lacked the resources (data access) and organization of resources (training and staff support) to lead to a full change in the social process. Participants' experiences highlighted the importance of developing social processes through relationships, especially with Zone Directors and coworkers, norms around data use, and data use activities, like professional development

sessions to examine student data. When participants had data access, training and experience using data, and staff support, they participated in positive social processes around data use; when participants engaged in positive social processes around data use, they implemented data-informed practices.

Prior literature showed that having a positive attitude towards using data is one of the most impactful determinants of data use (Schildkamp & Datnow, 2022; Datnow & Hubbard, 2015b). However, this study's findings contend that while attitude does impact data use practices, additional contextual and personal factors can more significantly impact practitioners' data use practices. Barriers to data access often limit data use, regardless of a participants' attitude. Moreover, previous experience using data was a surprisingly important factor for whether participants were likely to use data at higher rates. My qualitative analysis showed that previous experience was a moderating variable that I had not seen in prior research, aside from suggestions to offer additional data training. Previous experience, whether positive or negative, led to participants using data at higher rates, and previous experience affected participants' attitudes as well. This could be because some of the organizations required their employees to have previous experience in using data or research, whereas others did not place as much emphasis on data literacy.

Previous research recommended that schools promote data use among staff by removing barriers (Kline & Dolamore, 2019), offering opportunities to discuss and interpret data (Park, 2018), and providing adequate professional development on understanding data (Datnow & Hubbard, 2015a). While these studies focused on the school setting, this study maintains that their recommendations can be applied to after-school program settings. All three of those recommendations were mentioned many times by the participants during their interviews,

especially that participants felt that they had too many barriers to access data and not enough training. This study showed that providing adequate training and education on how to use data to inform practice is a large factor in whether people will use data, even more so than their attitudes. Because previous experience affects both data attitudes and data use, it is an important factor to consider when addressing data-informed practices amongst practitioners.

Recommendations

Research

Because much of the previous literature on data use looked at teachers and school-based practitioners, it is challenging to discern whether previous data experience is a factor unique to after-school program practitioners. Further research should be conducted to establish the relationship between previous experience with data and data attitudes and use, among both in-school practitioners and after-school practitioners. Additional practitioner contexts should also be examined to better understand the various influences on data use rates among after-school program practitioners, such as data-sharing agreements and network-wide data overview sessions. School-based nonprofits and after-school programs are unique contexts to examine, as practitioners are often required to work in different environments with contrasting policies and cultures. Because these spaces can vary so greatly across districts and even schools, it is imperative that further studies examine the many ways that practitioners interact with data.

Policy & Practice

For after-school programs trying to promote data-informed practices among their practitioners, organizational leaders should focus on eliminating barriers to data access, providing professional development opportunities around data, and promoting regular data use activities and spaces for staff. These recommendations are founded in both previous literature

(Kline & Dolamore, 2019; Park, 2018; Datnow & Hubbard, 2015a) and the outcomes of the current study. Practitioners, especially those working under multiple organizational umbrellas, frequently face many challenges around gaining access to resources they need and finding time to communicate with school staff. While having previous experience working with data should not necessarily be a requirement for after-school practitioners, it is important for organizations to provide adequate support in learning to use data for their employees and a positive data culture as to avoid negative associations with data (Datnow & Hubbard, 2015b). Findings from the current study highlighted that practitioners appreciate having the time and space allocated to discussing student data and the ways that the data affect programming. Scheduling intentional time with practitioners to discuss data can create a positive impact on practitioners' data-informed practices.

Limitations

This study is not without limitations. While I was able to find some significance, my quantitative results would be difficult to generalize due to the small sample size, social desirability bias, and barriers to data access. Particularly, the small sample size and narrow context reduce the reliability and statistical power of my results. Because of the strong discrepancies between the qualitative and quantitative reporting around data attitudes, the quantitative results may have reduced validity as well. My qualitative findings have a higher validity for understanding my research questions, as I was able to capture a range of feelings and experiences that led to data use. Furthermore, participants may have also felt less comfortable giving their honest opinions about using data knowing that the interviewers were researchers from a local university.

Conclusion

This study adds to the growing literature on the factors that influence data-use practices among school-based practitioners by examining the experiences of after-school program practitioners. Though having a positive attitude toward data was associated with increased rates of data use, previous experience using data and contextual barriers can have a greater impact on whether practitioners use data to inform their practice. If data-informed practices are a goal for an organization, leadership must consider the barriers preventing their practitioners from reaching that goal, as desire to use data is often not a strong, singular predictor for data use. Data can be a powerful tool when used thoughtfully and systematically, and practitioners will need continual support and training in order to fully implement data-informed practices.

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Table 1

Demographic Characteristics of Participants (N=38)

	Mean/Prop.	Freq.	SD	Min.	Max.
Participant Years of Experience in the Field (higher=more)	9.50		8.47	.50	31.00
Participant NAZA Role (Site Coordinator=1)	.71				
Participant NAZA Zone					
South Center	.18	7			
Northwest	.16	6			
Mid Center	.34	13			
Southeast	.11	4			
Northeast	.16	6			
All Zones	.05	2			
Participant Race/Ethnicity					
Asian	.03	1			
Black	.50	19			
Latine	.08	3			
White	.39	15			
Participant Highest Level of Education					
Associate's Degree or Trade School	.08	3			
Bachelor's Degree	.61	23			
Professional Degree	.03	1			
Master's Degree	.29	11			
Participant Gender (Woman=1)	.74				

Table 2

Descriptive Statistics (N=38)

	Mean/Prop.	Freq.
Participant Attitude Towards Using Data - Ordinal		
Very Negative	.11	4
Negative	.16	6
Positive	.50	19
Very Positive	.24	9
Participant Attitude Towards Using Data - Binary (1=Positive)	.74	
Participant Frequency of Data Use - Ordinal		
Never	.29	11
Less than Once a Month	.34	13
Once or Twice a Month	.21	8
Weekly or Almost Weekly	.13	5
A Few Times a Week	.03	1
Participant Frequency of Data Use - Binary (1=Some)	.71	

Table 3

Test of Proportions, Proportion who Used Data than Did Not Use Data by Attitude Toward Data

Use, Bess, 2016 (N=38)

	Frequency	Proportion who used data	z	p-value
Negative Attitude	10	0.500	-1.710	p=0.043
Positive Attitude	28	0.786		

Table 4

Analysis of Relationship between Data Attitude (Binary) and Data Use (Binary), Bess, 2016

(N=38)

Data Attitude	Data Use Frequency and *Percent*		
	None	Some	Total
Negative	5	5	10
	45.45	*18.52*	*26.32*
Positive	6	22	28
	54.55	*81.48*	*73.68*
Total	11	27	38
	100.00	*100.00*	*100.00*

Fisher's exact=0.098; gamma=0.571

Table 5

Analysis of Relationship between Data Attitude (Ordinal) and Data Use (Binary), Bess, 2016

(N=38)

Data Attitude	Data Use Frequency and *Percent*		
	None	Some	Total
Very Negative	2 *18.18*	2 *7.41*	4 *10.53*
Negative	3 *27.27*	3 *11.11*	6 *15.79*
Positive	*4* *36.36*	*15* *55.56*	*19* *50.00*
Very Positive	2 *18.18*	7 *25.93*	9 *23.68*
Total	11 *100.00*	27 *100.00*	38 *100.00*

 Fisher's exact=0.378; gamma=0.371

Table 6

Analysis of Relationship between Data Attitude (Binary) and Data Use (Ordinal), Bess, 2016 (N=38)

Data Attitude	Data Use					
	Frequency and *Percent*					
	Never	Less than Once a Month	1-2 Times a Month	About Once a Week	A Few Times a Week	Total
Negative	5	1	1	3	0	10
	45.45	*7.69*	*12.50*	*60.00*	*0.00*	*26.32*
Positive	6	12	7	2	1	28
	54.55	*92.31*	*87.50*	*40.00*	*100.00*	*73.58*
Total	11	13	8	5	1	38
	100.00	*100.00*	*100.00*	*100.00*	*100.00*	*100.00*

Fisher's exact=0.063; gamma=0.120

Table 7

Analysis of Relationship between Data Attitude (Ordinal) and Data Use (Ordinal), Bess, 2016 (N=38)

Data Attitude	Data Use					
	Frequency and *Percent*					
	Never	Less than Once a Month	1-2 Times a Month	About Once a Week	A Few Times a Week	Total
Very Negative	2	1	0	1	0	4
	18.18	*7.69*	*0.00*	*20.00*	*0.00*	*10.53*
Negative	3	0	1	2	0	6
	27.27	*0.00*	*12.50*	*40.00*	*0.00*	*15.79*
Positive	4	8	5	2	0	19
	36.36	*61.54*	*62.50*	*40.00*	*0.00*	*50.00*
Very Positive	2	4	2	0	1	9
	18.18	*30.77*	*25.00*	*0.00*	*100.00*	*23.68*
Total	11	13	8	5	1	38
	100.00	*100.00*	*100.00*	*100.00*	*2.63*	*100.00*

Fisher's exact=0.296; gamma=0.072

Table 8

Qualitative Themes and Frequencies (N=19)

Themes	Prop.	Freq.	Themes	Prop.	Freq.
Previous Experience	0.74	14	*Facilitators to Data Use*		
Data Definition			Zone Director	0.84	16
Attendance	0.84	16	Helpful coworkers	0.68	13
Academic	0.79	15	Professional development/training	0.63	12
Programmatic	0.74	14	Data Designee	0.53	10
Personal	0.53	10	Positive data culture	0.26	5
Other	0.16	3	Self-motivation	0.16	3
Data Sources			Easy access	0.16	3
Data Designee	0.53	10	*Barriers to Data Use*		
Zone Directors	0.53	10	Lack of professional development/training	0.68	13
MNPS Staff	0.47	9	No access or not enough access	0.68	13
Students	0.42	8	Negative data culture	0.47	9
Coworkers	0.21	4	Difficult system	0.42	8
MNPS System	0.21	4	Scheduling/availability challenges	0.37	7
Direct Observation	0.16	3	Don't know how to use it	0.32	6
Parents	0.16	3	Don't want to use it	0.16	3
Reasons for Liking Data			Parents denied access	0.16	3
Inform practice	0.74	14	Unaware of data partnership	0.05	1
Track students' academic needs	0.68	13			
Insightful to students' experiences	0.37	7			
Reasons for Disliking Data					
Not a full picture	0.32	6			
Not helpful for practice	0.26	5			
Relationships are better	0.21	4			
Don't know how to use data	0.11	2			

Figure 1

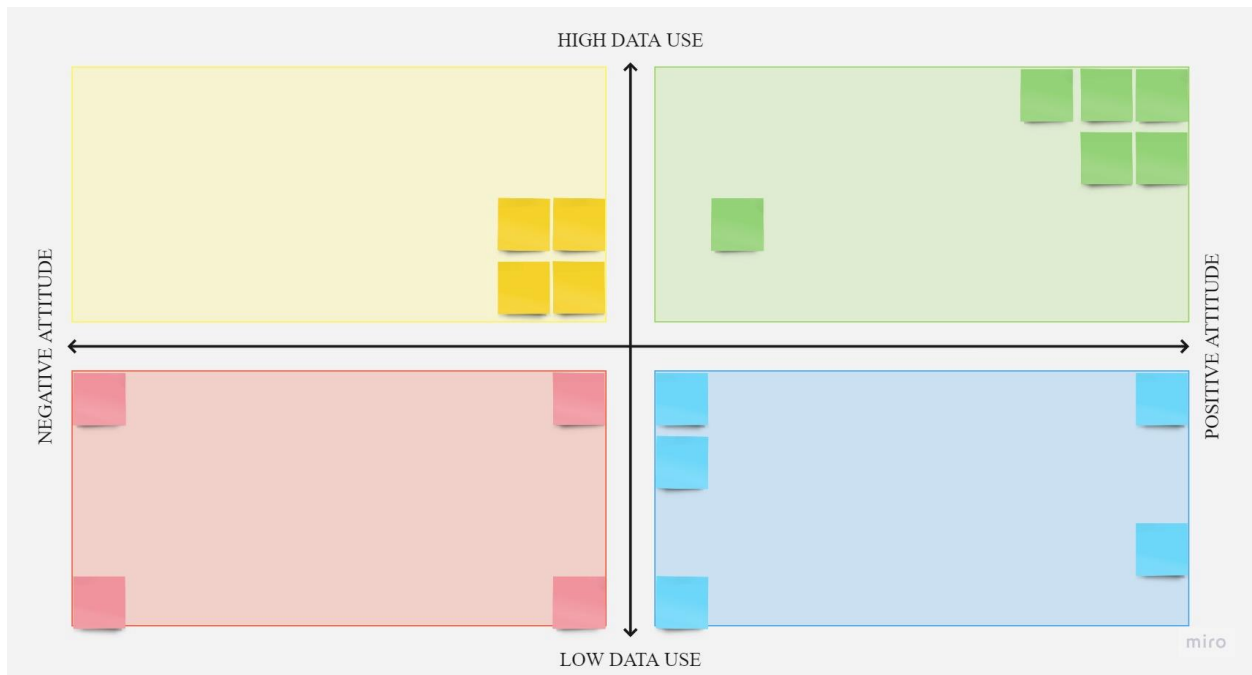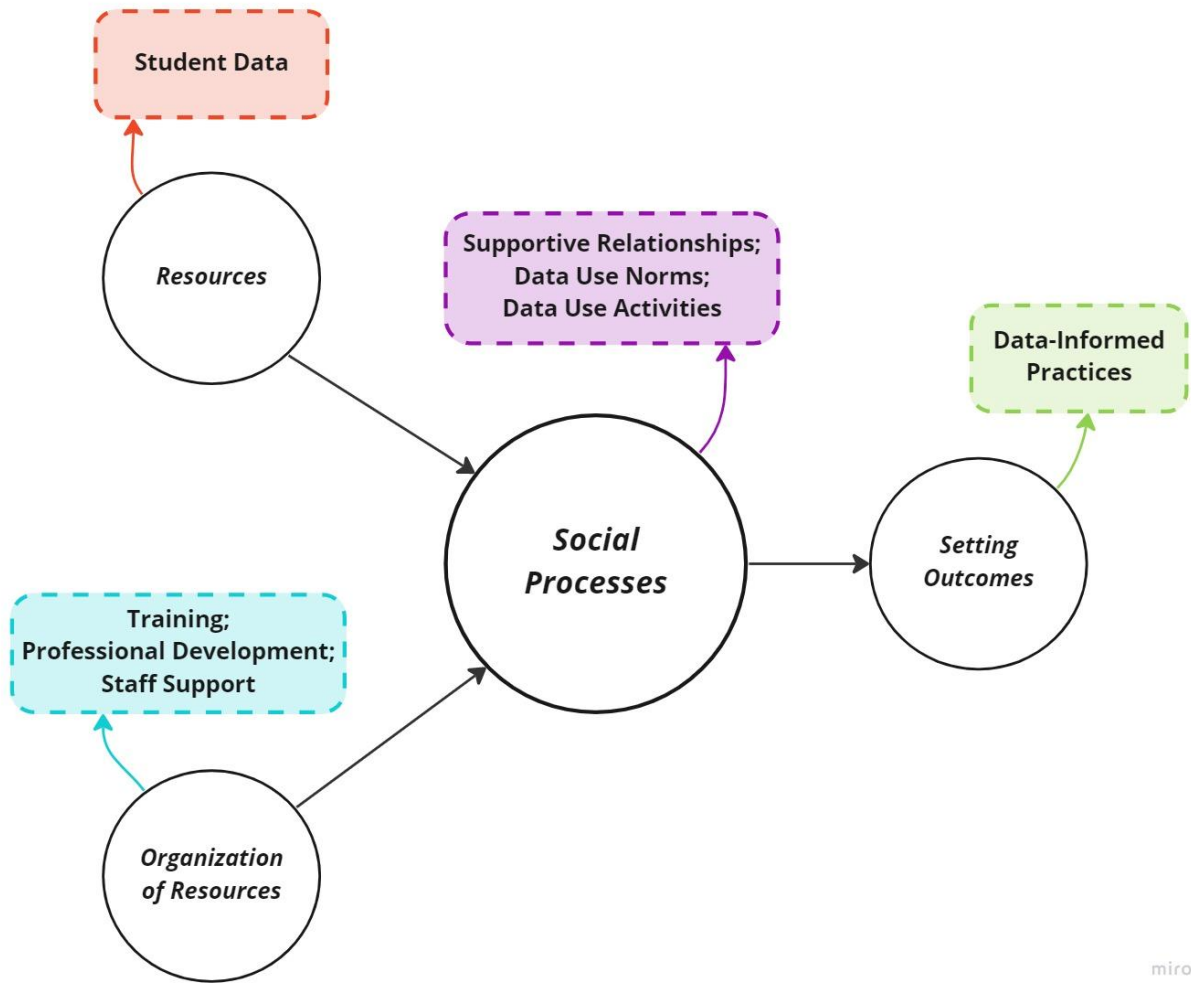*Tseng & Seidman's Theoretical Framework for Understanding Social Settings*
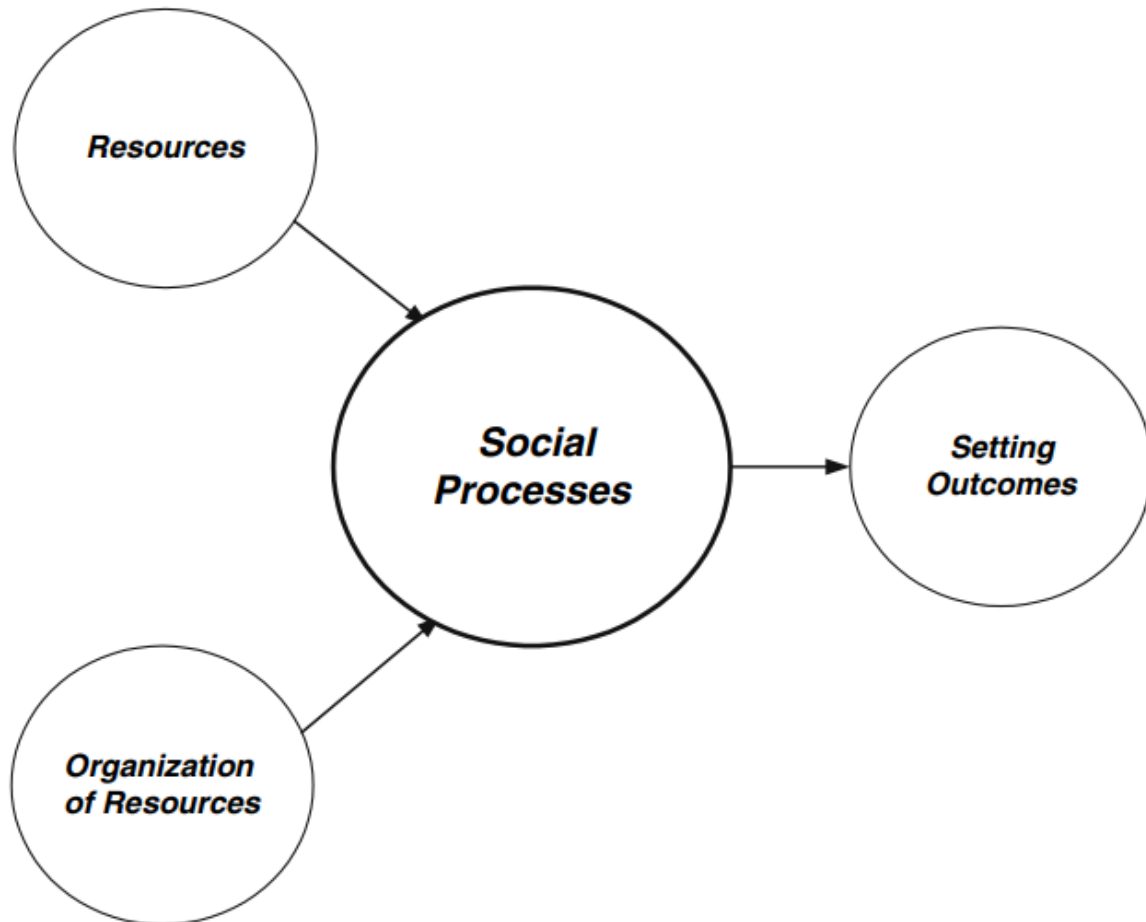
From "A systems framework for understanding social settings," by V. Tseng & E. Seidman, 2007, *American Journal of Community Psychology*, *36*, p. 218. Copyright 2007 by Springer Science + Business Media, LLC.

Figure 2

Participant Attitude Toward Data Use – Ordinal

Figure 2. Participant Attitude Towards Data Use - Ordinal
Bess (2016), N=38
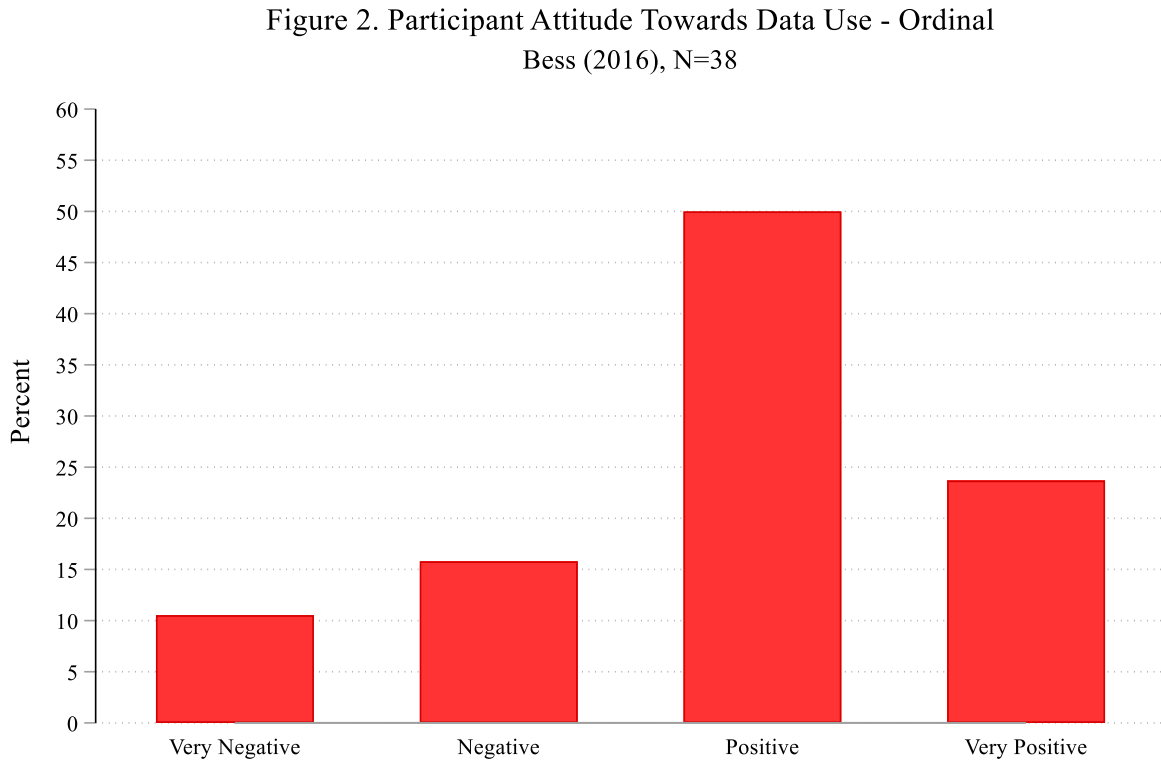
Figure 3

Participant Data Use Frequency – Ordinal

Figure 3. Participant Data Use Frequency - Ordinal
Bess (2016), N=38
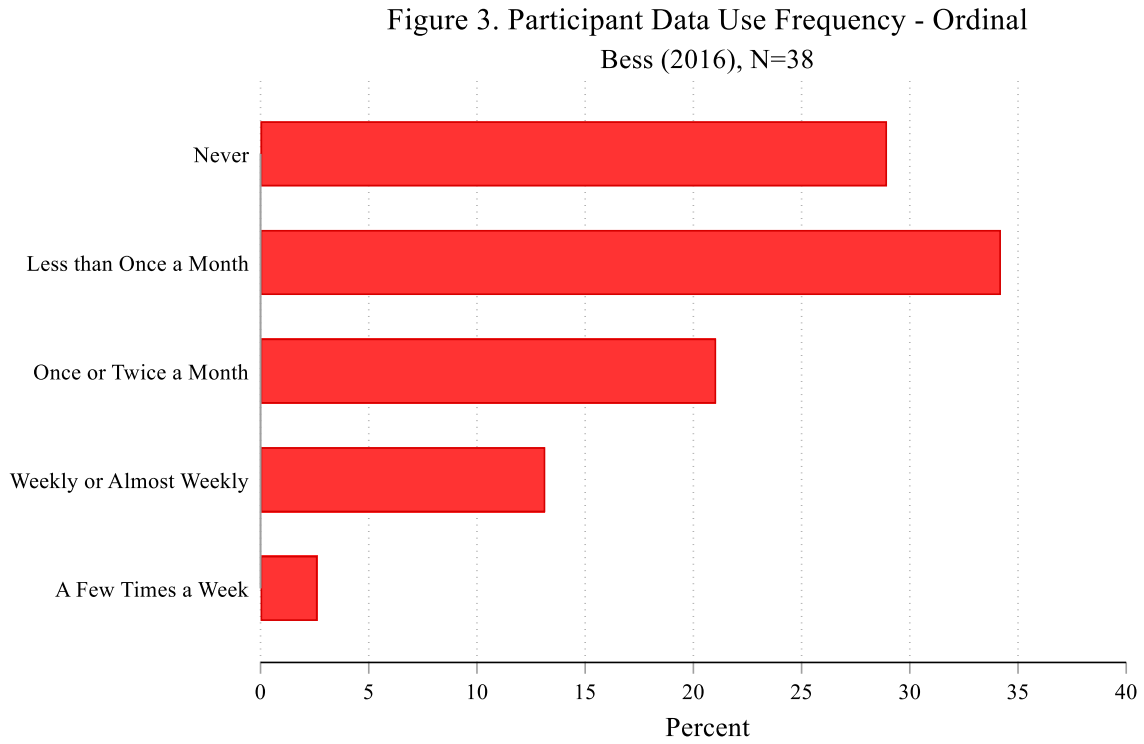
Figure 4

Participant Data Attitude – Binary

Figure 4. Participant Attitude Towards Data Use - Binary
Bess (2016), N=38
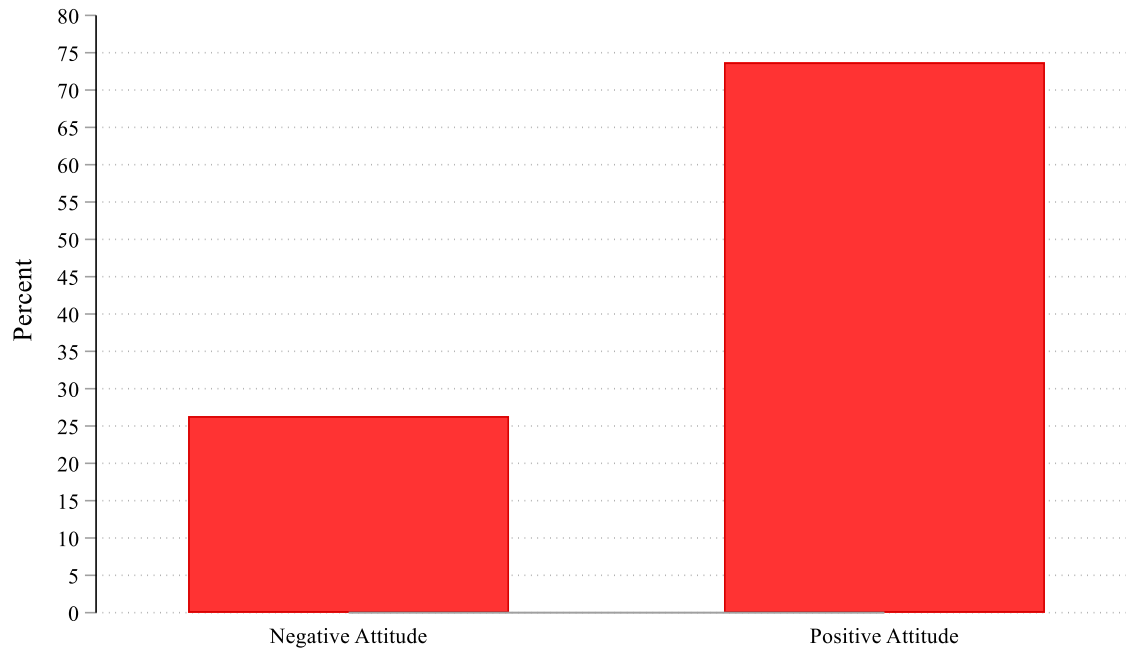
Figure 5

Participant Data Use Frequency – Binary

Figure 5. Participant Data Use Frequency - Binary
Bess (2016), N=38
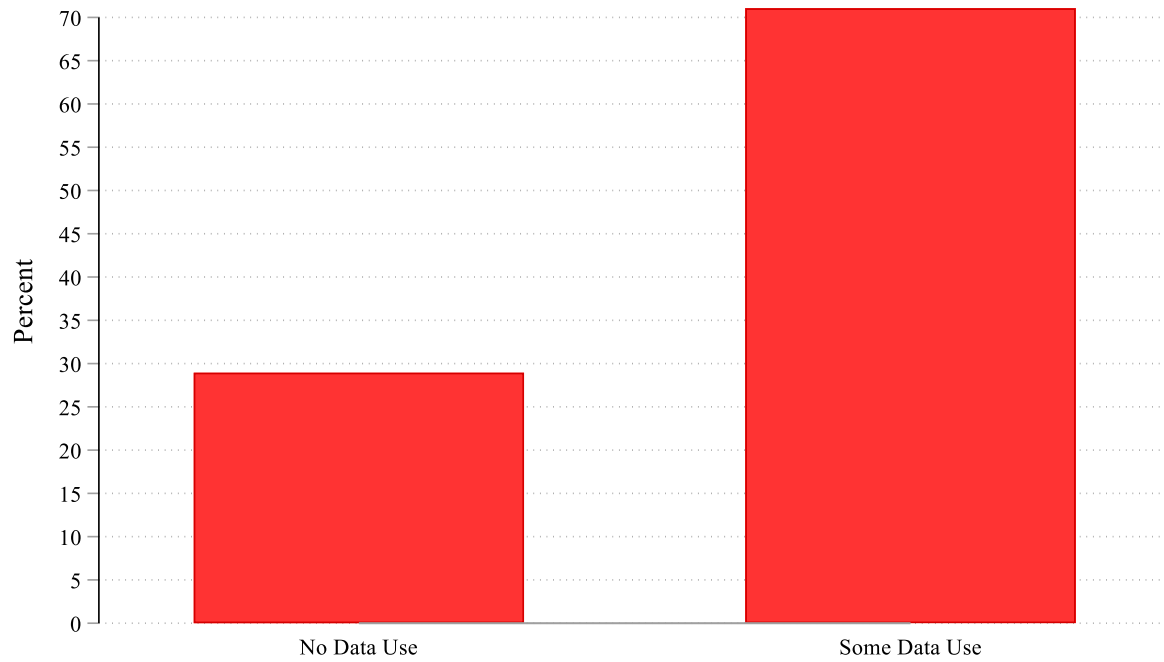
Figure 6

Proportion of Data Use by Data Attitude

Figure 6. Proportion of Data Use by Data Attitude
Bess (2016), N=38

Some data use refers to using data at least once a year.
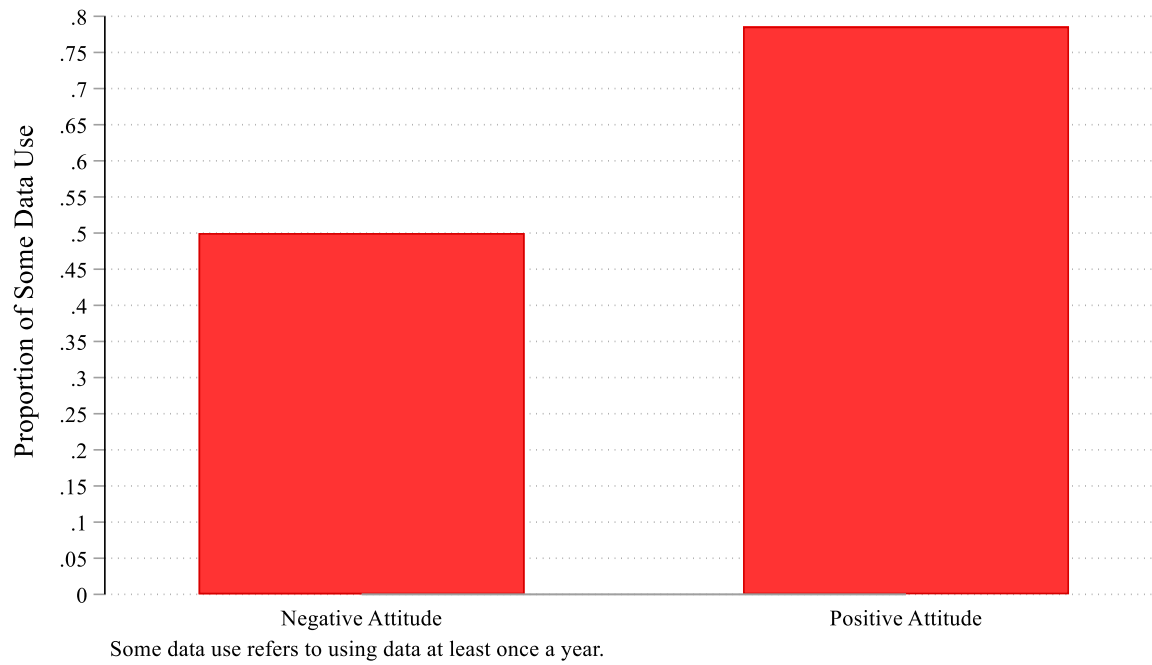
Figure 7

Data Attitude (Binary) by Data Use (Binary)

Figure 7. Data Attitude by Data Use
Bess (2016), N=38
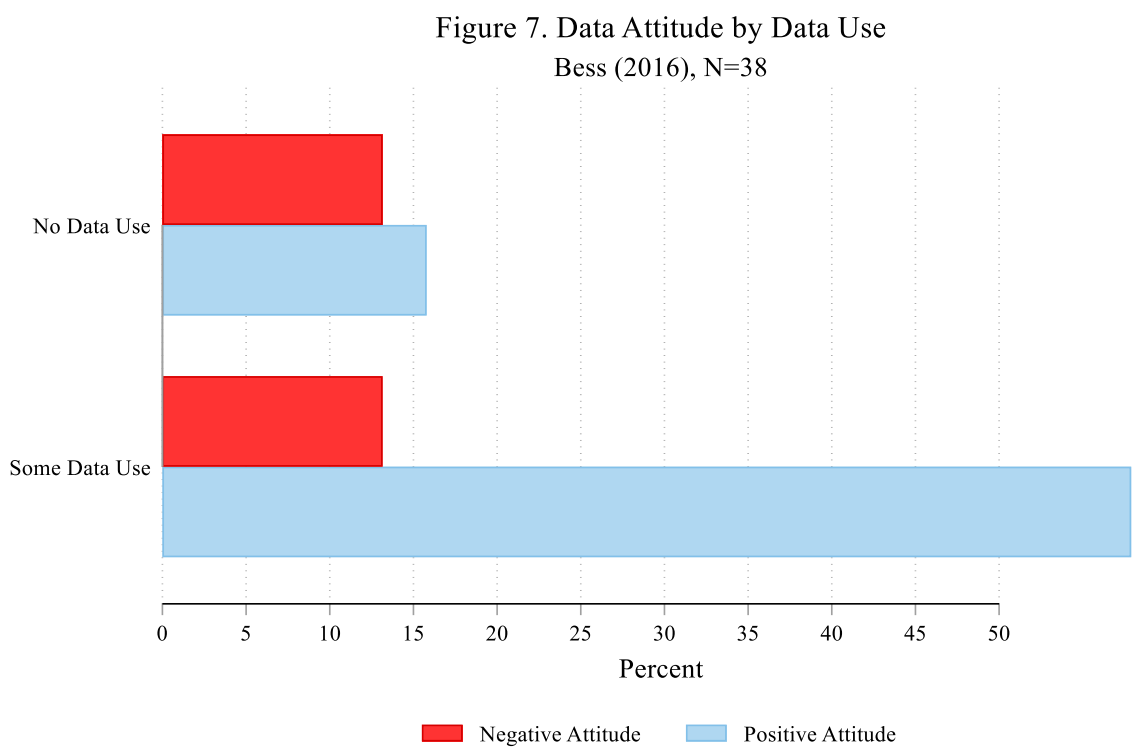
Figure 8

Data Attitude (Ordinal) by Data Use (Binary)

Figure 8. Data Attitude by Data Use
Bess (2016), N=38
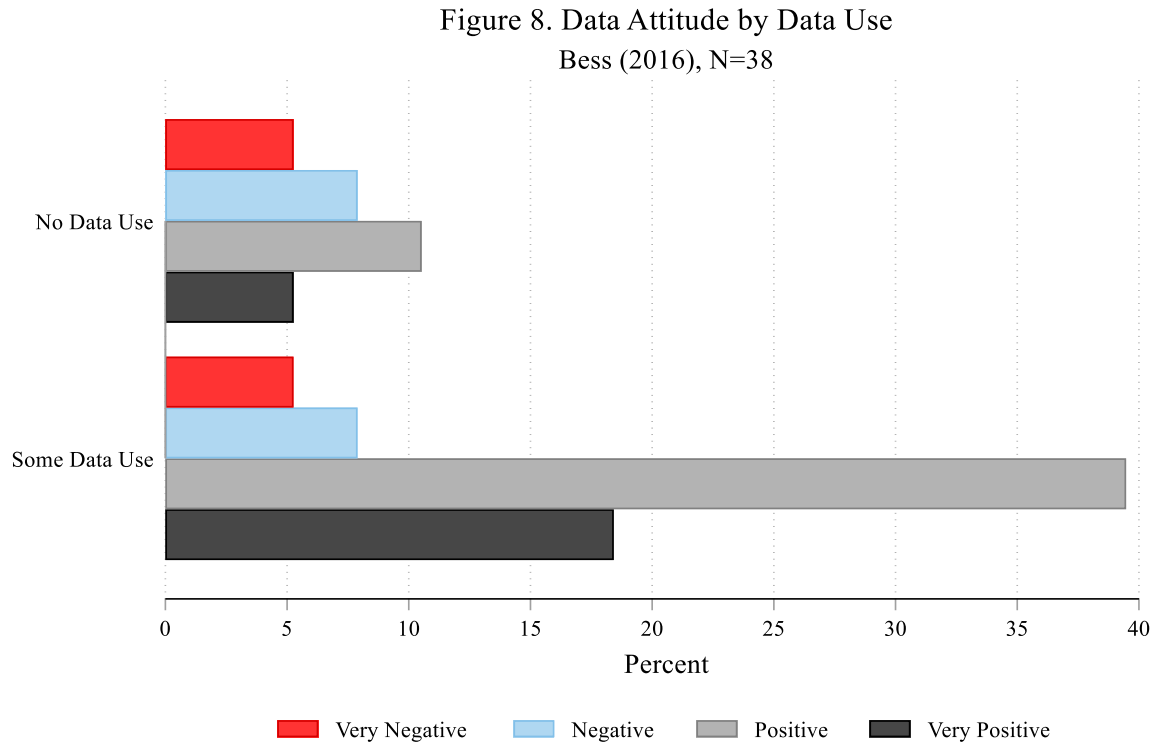
Figure 9

Data Attitude (Binary) by Data Use (Ordinal)

Figure 9. Data Attitude by Data Use
Bess (2016), N=38
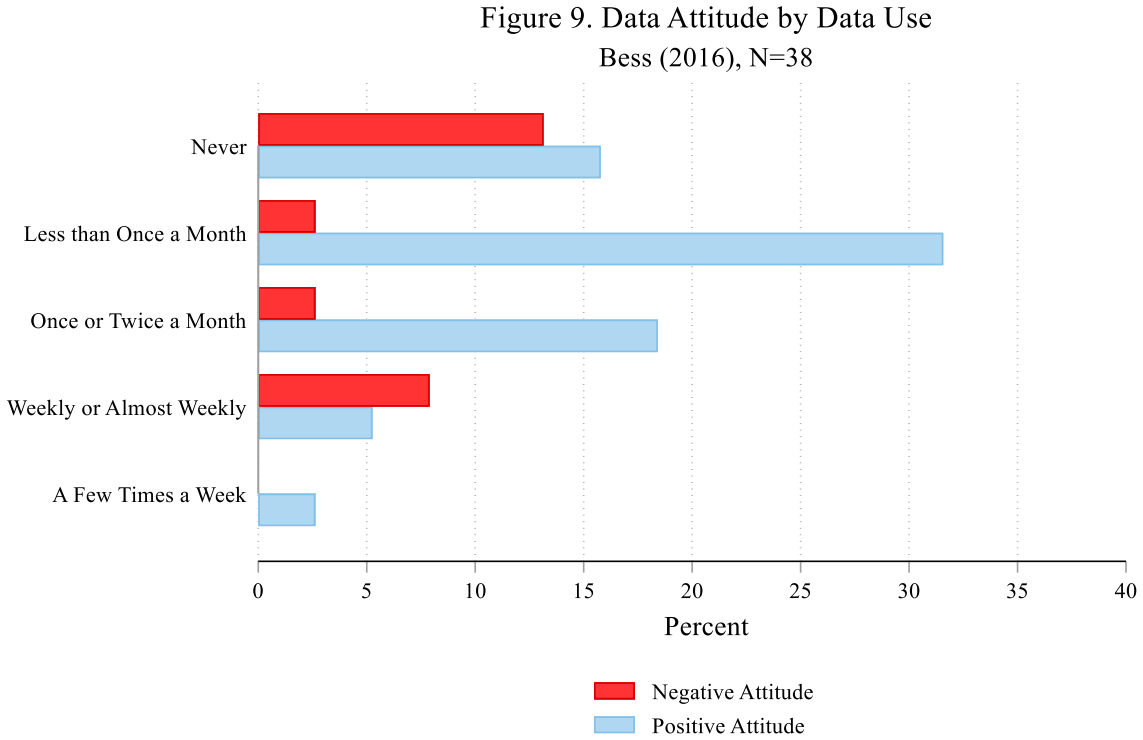
Figure 10

Data Attitude (Ordinal) by Data Use (Ordinal)

Figure 10. Data Attitude by Data Use
Bess (2016), N=38
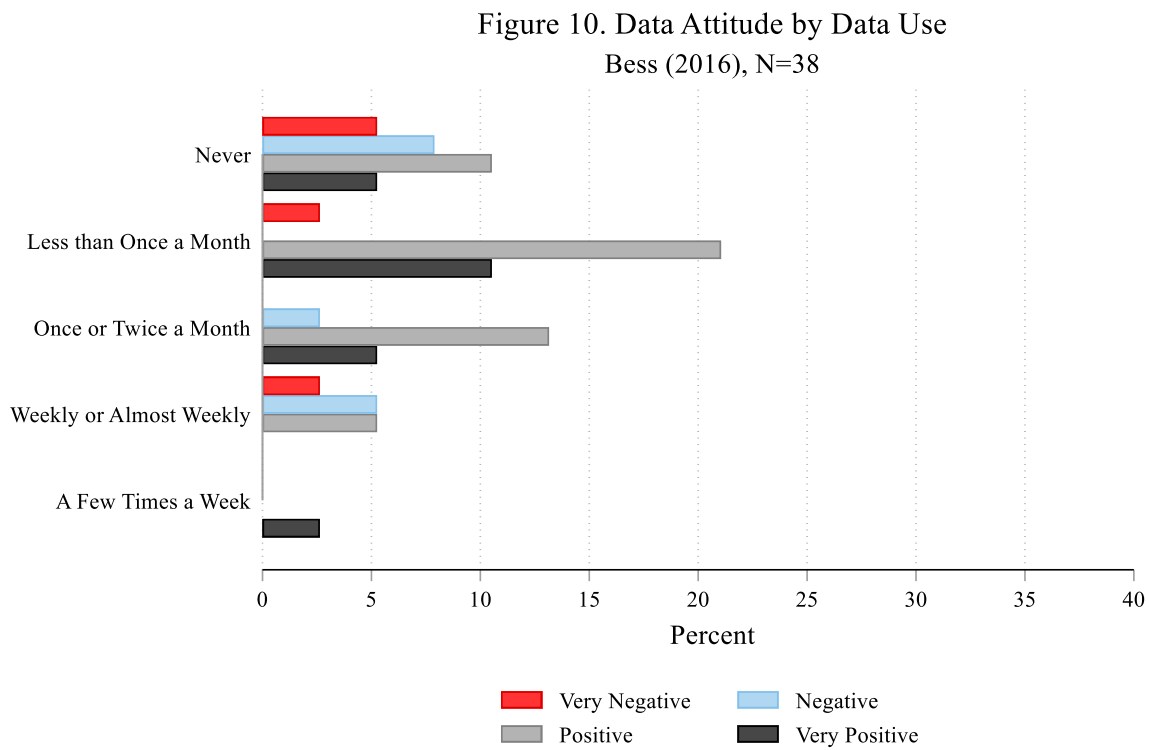
Figure 11

Qualitative Mapping of Participants' Data Attitudes and Data Use

Figure 12

Applied Theoretical Framework for Understanding Social Settings

Adapted from "A systems framework for understanding social settings," by V. Tseng & E.

Seidman, 2007, *American Journal of Community Psychology*, *36*, p. 218.

Appendix

Participant interview protocol developed and implemented by Dr. Kimberly Bess

(Introduction) Thank you for agreeing to meet with me and take part in this interview. Today I am going to ask you some questions about your experiences using data and information to help you make decisions about your work with NAZA. I will ask you questions about people you go to for information and advice and who you talk to about using data and information. Before we start talking about your experiences using data I would like to learn more about you.						
PART A: Demographic Information						
1. Name of organization or primary affiliation:						
2. What is your role?						
3. How many years have you been with your current organization?						
4. What do you consider as your field (e.g. youth development)?						
5. How many years have you been working in the [insert name] field?						
6. What NAZA Zone is your work affiliated with?	❑	Northeast	❑	South Central	❑	Northwest
	❑	Southeast	❑	McGavock	❑	All
7. What is your NAZA role?	❑	Site Coordinator	❑	Program Manager	
	❑	Zone Director	❑	Other NAZA	
8. How many years have you worked with NAZA?						
9. Which MNPS middle school(s) do you directly partner with as part of your NAZA work?						
10. What do you consider your race?	❑	Asian	❑	Black	❑	Latino
	❑	White	❑	Other	❑	
11. What do you consider your gender?	❑	Female	❑	Male	❑	Other
12. What is your highest level of education?	❑	High School or GED	❑	Associates Degree or Trade School	❑	College
	❑	Professional Degree	❑	Master's Degree	❑	Doctoral Degree

PART B General Information and Data Use
Thank you. I want to start by asking you about your general experiences accessing and using data in your NAZA work.
1. Some people have a lot of experience working with data to help them make decisions about their work, while others have less experience using data. How would you describe yourself in this regard?
2. Can you describe to me the types of information and data that you use to inform your NAZA work?

MNPS DATA USE						
We understand that NAZA and MNPS have established a data partnership that allows NAZA practitioners to access data about those students who are in their program.						
3. (IF MNPS DATA ARE <u>NOT</u> MENTIONED ABOVE ASK:) Have you ever accessed MNPS data? (IF YES go to 6 & 7, if NO go to 8)						
FREQUENCY OF DATA USE:	Never	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week	MNPS data is not available to me.
4. How frequently do you use MNPS data?	❑	❑	❑	❑	❑	❑

5. Can you tell me about that experience?
   a) What made you decide to access MNPS data?
   b) Can you tell me about the process?
      i) Probe: What steps did you have to take to obtain the data?
      ii) Probe: What did you do with the data once you obtained it?						

6. Is there a reason why you haven't done so? iii) Are there barriers that you have encountered that make it difficult or discourage you from accessing MNPS student data?						

If either "MNPS data is not available to me" or "never" is selected, skip to 17.					
HOW OFTEN DATA IS USED IN THE FOLLOWING WAYS:	Never	Less than once a month	Once or twice a month	Weekly or almost weekly	A few times a week
7. How often do you use MNPS data to identify instructional content to use in your program?	❑	❑	❑	❑	❑
8. How often do you use MNPS data to tailor instruction to individual needs?	❑	❑	❑	❑	❑
9. How often do you use MNPS data to form small groups for targeted instruction?	❑	❑	❑	❑	❑
10. How often do you discuss MNPS data with a parent or guardian?	❑	❑	❑	❑	❑
11. How often do you discuss MNPS data with a student?	❑	❑	❑	❑	❑
12. How often do you meet with an MNPS teacher or administrator about MNPS data?	❑	❑	❑	❑	❑
13. How often do you meet with program staff to discuss MNPS data?	❑	❑	❑	❑	❑
14. How often do you meet with a specialist (e.g., NAZA Zone Director or literacy specialist) to discuss MNPS data?	❑	❑	❑	❑	❑

USEFULNESS OF MNPS DATA:	Not useful	Somewhat useful	Useful	Very useful	MNPS data is not available to me.
15. Overall, how useful is MNPS data to your practice? * *Why & How*	❑	❑	❑	❑	❑

Factors in Accessing and Using Data
18. Thinking about the types of data and information available to you, are there people or other factors in your environment that either make it easier or encourage you to **access** data?
19. Similarly are there people or other factors in your environment that make it difficult or discourage you from **accessing** data?
20. Again, thinking about the types of data and information available to you, are there people or other factors in your environment that either make it easier or encourage you to use data to inform your NAZA work?
21. Similarly are there people or other factors in your environment that make it difficult or discourage you from using data to inform your NAZA work?
PART C – MAPPING DATA & INFORMATION SHARING RELATIONSHIPS
Thank you. I am now going ask you about your connections with other people who are part of the NAZA network, people who work for MNPS, and people in your organization. As we talk about these connections, we are going to do a mapping activity. We will use colored stickers to represent different types of people in your network and colored lines to represent different kinds of relationships you have with different people. The map will help us think about what your network is like.
NAZA Network
I am going to begin by showing you a list of individuals who are part of the NAZA Network and ask you to identify people who you know and have had a personal interaction with at least once in the last year.
(Instructions) For each person you know, put his or her initials on a <u>YELLOW STICKER</u>, if the person's role is <u>Site Coordinator or Program Manager,</u> and a <u>BLUE STICKER,</u> if the person is a <u>Zone Director or serves in an administrative or support capacity (Candy, Louisa, literacy specialist, coach assessor)</u> for NAZA. If you interact with this person <u>about once a week</u>, place the sticker in the inner circle. If you interact <u>a couple of times a month</u>, place the sticker in the middle circle. If you interact less frequently but <u>at least once per year</u>, place the sticker in the outer circle.
1.   Can you tell me who among the NAZA members you've identified you knew before NAZA?
(Instruction) I am now going to ask you questions describing your connections with each of these people.
(Fill in responses on NAZA Alter Network Data Collection Sheet). For each of the individuals that you have identified, do you **strongly agree, agree, disagree or strongly disagree** with the following statements:

2. I am aware of the skills and areas of knowledge that [INSERT INITIALS] brings to the work of NAZA and its partnership with MNPS. (Allow for Don't know)
3. I believe that [INSERT INITIALS] has expertise in areas that are important to promoting better outcomes for middle school students in MNPS. (Allow for Don't know)
4. I believe that [INSERT INITIALS] has expertise in using data to inform NAZA program practice.

One issue in getting information or advice from others is your ability to gain access to their thinking. The extent to which you can access another person's thinking and knowledge is a continuum. At one end of the spectrum are people who do not make themselves available to you quickly enough to help solve your problem. At the other end of the spectrum are those who are willing to engage actively in problem solving with you in a timely fashion.

5. On a continuum from 1 to 4, with <u>1 = extremely weak and 4 = extremely strong</u> how would you rate your overall ability to access people's thinking and knowledge for people you identified in you network?

Draw a RED LINE that connects you each person that you rate your ability to access as STRONG AND EXTREMELY STRONG with an arrow pointing toward that person.

6. Thinking about the accessibility of people on your map, what factors do you believe make it easier to access people's thinking and knowledge?
7. Similarly, can you tell me about things that make accessing people's thinking and knowledge difficult?

MNPS Network

(Instructions). Now I would like you to list up to 8 names of any MNPS teachers, administrators, or staff members with whom you have been in contact though your NAZA work during the past year and you see as important for your NAZA work. <u>For each person, put his or her initials on a RED STICKER.</u> If you interact with this person <u>about once a week</u>, place the sticker in the inner circle. If you interact <u>a couple of times a month</u>, place the sticker in the middle circle. If you interact less frequently but <u>at least once per year</u>, place the sticker in the outer circle.

8. (For each person ask the following and complete <u>alter information form</u>.)
    a. What is [insert person's name] role in MNPS?
    _____Teacher   _____School Leadership   __ School Staff   __ District Staff _____ Other
    b. Did you meet this person through NAZA?
9. Can you tell me about how you are connected with each?
    a. Probe: Can you describe to me how these relationships contribute to your NAZA work?
    b. Probe: Are there particular relationships that important to your work? What makes them important?
10. In general, how do you think MNPS teachers, administrators, and staff view NAZA and its programming?

Organizational Network (DO NOT ASK FOR NAZA ONLY EMPLOYEES)

(Instructions). **Now I would like you to list up to 8 names of members of [X organization_____] that have supported you in your NAZA work during the past year (If ego works exclusively for NAZA skip this question). <u>For each person, put his/her initials on a GREEN STICKER.</u>** If you interact with this person **about once a week,** place the sticker in the **inner circle**. If you interact **a couple of times a month, place the sticker in the middle circle**. If you interact less frequently but **at least once per year**, place the sticker in the outer circle.

11. (For each person ask the following and complete <u>alter information form</u>.)
    a. What is [insert person's name] role in [insert organization name]?
    b. Did you meet this person through NAZA?
    c. Can you tell me how you are connected with this person?

12. Looking at **all of the people** in your network, identify those who work in the **same location** as you and place a **green circle around their sticker**.

<div align="center">Questions about Network Connections</div>

I am now going to ask you a few questions about your interactions with people in your network. (Instructions: For each question, start with the top of the list and ask about each alter. Record the response on appropriate network data form.)

<div align="center">

INFORMATION AND ADVICE

</div>

13. Thinking about everyone in your network, to whom have you turned [INSERT INITIALS] for <u>information or advice</u> on work-related topics in the past year?
For each person identified, please draw a <u>GREEN LINE</u> that connects you to that person with an arrow pointing toward [INSERT INITIALS]. Let's start with the yellow stickers….

14. Thinking about everyone in your network, who has turned to you for <u>information or advice</u> on work-related topics in the past year?
For each person identified, please draw a <u>GREEN LINE</u> that connects you to that person with an arrow pointing toward you. Let's start with the yellow stickers….

15. When you go to people in your network for information or advice, what kinds of information or advice are you seeking?
    a. Probe: Is the information or advice you seek from MNPS personnel different from the information and advice you seek from members of NAZA or your organization? If so, how?
    b. Probe: What kinds of information or advice are most helpful to you?
    c. Probe: Can you tell me about a time when you sought information or advice from someone in your network?

16. When people in your network come to you, what types of information or advice are they typically seeking?
    a. Probe: Can you tell me about a time when someone in your network came to you for information or advice?

17. Can you tell me about a time when information or advice you received from a person in your network influenced a decision you made related to your NAZA work?

<div align="center">

PROBLEMS AND CHALLENGES

</div>

18. With whom do you discuss <u>problems or challenges</u> you are facing in your work? **Draw a <u>BLUE LINE</u> that connects you with each person identified with an arrow pointing toward that person.**

19. Thinking about the people on your map, can you tell me about what kinds of problems or challenges you talk about with them?
a. Probe: Do the kinds of problems or challenges you discuss with MNPS personnel differ from those you discuss with members of NAZA or your organization?
<center>Qualitative Questions</center>
20. Thinking about your connections, can you tell me about factors that have facilitated the development and maintenance of those relationships?   a. Probe: Are there specific factors that have made it easier to develop relationships with MNPS teachers, administrators, or staff?
21. Similarly, can you tell me about any challenges you have encountered in developing or maintaining those relationships?   a. Probe: Are there specific factors that have made it more difficult to develop relationships with MNPS teachers, administrators, or staff?
22. Finally, during the past year can you tell me about any changes in your network that you have experienced and how these have affected you or your work?

INTERVIEW PART D: SUPPORT & ATTITUDES

SUPPORT:	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I am adequately supported in the effective use of data	❑	❑	❑	❑
2. I am adequately prepared to use data * HOW	❑	❑	❑	❑
3. There is someone who answers my questions about using data	❑	❑	❑	❑
4. There is someone who helps me change my practice based on data	❑	❑	❑	❑
5. NAZA provides enough professional development about data use	❑	❑	❑	❑
6. NAZA's professional development is useful for learning about data use * WHAT is present or absent	❑	❑	❑	❑

NETWORK SUPPORT

7. Looking at your network, please identify any individuals who HELP YOU make sense of MNPS or other kinds of data. **For each person identified, please draw an ORANGE LINE that connects you to that person with an arrow pointing toward you.**
8. Looking at your network, please identify those individuals that YOU HELP to make sense of MNPS or other kinds of data. **For each person identified, please draw an ORANGE LINE that connects you to that person with an arrow pointing toward that person.**
9. Can you describe to me they ways in which you help others or others help you make sense of MNPS data?

ATTITUDES ABOUT DATA USE:	Strongly Agree	Agree	Disagree	Strongly Disagree
10. Data help afterschool providers plan programming.	❏	❏	❏	❏
11. Data offers information about students that was not already known.	❏	❏	❏	❏
12. Data help practitioners identify learning goals for students.	❏	❏	❏	❏
13. Students benefit when afterschool programming is informed by data.	❏	❏	❏	❏
14. I think it is important to use data to inform afterschool program practice. *WHY	❏	❏	❏	❏
15. I like to use data. *WHY	❏	❏	❏	❏
16. Data is useful.	❏	❏	❏	❏
17. Using data helps me be a better afterschool program provider. *HOW	❏	❏	❏	❏

INTERVIEW PART E: LEARNING CULTURE				
ORGANIZATIONAL CULTURE:	Never	Rarely	Sometimes	Often
In your organization…				
1. People are rewarded for learning.	❏	❏	❏	❏
2. People spend time building trust with each other.	❏	❏	❏	❏
3. Teams/groups revise their thinking as a result of group discussions or information collected.	❏	❏	❏	❏
4. Leaders continually look for opportunities to learn.	❏	❏	❏	❏
5. Leaders encourage data use as a tool to support effective practice.	❏	❏	❏	❏
6. Leaders provide many opportunities for providers to use data.	❏	❏	❏	❏
Your Organization…				
7. Makes lessons learned available to all partners.	❏	❏	❏	❏
8. Recognizes members for taking initiative.	❏	❏	❏	❏
9. Works together with the outside community to meet mutual needs.	❏	❏	❏	❏
10. Encourages people to get answers from across the organization when solving problems.	❏	❏	❏	❏

NAZA CULTURE:	Never	Rarely	Sometimes	Often
In NAZA…				
11. People are rewarded for learning.	❏	❏	❏	❏
12. People spend time building trust with each other.	❏	❏	❏	❏
13. Teams/groups revise their thinking as a result of group discussions or information collected.	❏	❏	❏	❏

	Strongly Agree	Agree	Disagree	Strongly Disagree
14. Leaders continually look for opportunities to learn.	❑	❑	❑	❑
15. Leaders encourage data use as a tool to support effective practice.	❑	❑	❑	❑
16. Leaders provide many opportunities for providers to use data.	❑	❑	❑	❑
NAZA…				
17. Makes lessons learned available to all partners.	❑	❑	❑	❑
18. Recognizes members for taking initiative.	❑	❑	❑	❑
19. Works together with the outside community to meet mutual needs.	❑	❑	❑	❑
20. Encourages people to get answers from across the organization when solving problems.	❑	❑	❑	❑

DATA-USE CULTURE:	Strongly Agree	Agree	Disagree	Strongly Disagree
21. Members of my NAZA Zone trust each other.	❑	❑	❑	❑
22. It's OK to discuss feelings and worries with other members of my NAZA Zone.	❑	❑	❑	❑
23. Members of my NAZA Zone respect colleagues who lead NAZA program improvement efforts.	❑	❑	❑	❑
24. Members of my NAZA Zone respect those colleagues who are experts in their craft.	❑	❑	❑	❑
25. My Zone Director fosters a trusting environment for discussing data in teams. ***HOW**	❑	❑	❑	❑

NETWORK ROLE MODELS
26. Looking at your network, please identify those individuals who you see as role models for data use. **Please place a BLUE CIRCLE around those individuals.**
27. Can you describe to me what makes these individuals good role models?
28. Thinking about the partnership between NAZA and MNPS, do you have any suggestions about steps that could be taken to further strengthen relationships between NAZA members and school personnel?

WRAP UP QUESTIONS
Thank you so much for all of your time. Looking back on the process of completing your network map, what surprised you about the process. What did you learn through this experience?