Professional Learning Maps
Data Use Survey Instrument

Taking Action with Data and Professional Learning Communities

Data and assessment literacy have become a big part of K–12 education, but it can be difficult to establish a data culture that promotes student growth and supports teacher professional learning. Oftentimes, teachers view data and data analysis as measures of compliance, while administrators see them as added requirements from the district. The learning curve for data and effective data use is huge for many teachers and administrators, as most educators are not taught this important skill in their teacher preparation programs (Morrison, 2008).

In order to move past these obstacles, teachers and administrators need a structure that supports data and assessment literacy. Our Taking Action with Data (TADA) framework addresses this need, while providing a collaborative Professional Learning Community (PLC) for teachers. PLCs set the stage for the TADA framework and provide the ideal environment to break down barriers and reduce anxieties around data analysis, as well as galvanize the community into proactive data use. The TADA framework uses supports like cognitive coaching, data conversations, and action research to seek solutions that will increase student achievement and improve overall instruction.

But in order to employ TADA or any action research-based process, there must be data available for analysis. To acquire it, Professional Learning Maps (PLM) provides a mechanism in the form of a survey for data collection. This diagnostic survey provides a quiet place for educators to reflect on their practice. With the PLM diagnostic survey, educators and administrators can establish customized and specific data for K–12 schools, districts, and states, providing a solid foundation to apply the TADA framework. Access to data provides educators with an entry point to the comprehensive framework, so that they can explore and address the specific needs of the students on their campus.

Creating the Professional Learning Maps Data Use Survey

In order to create the PLM Data Use survey, we analyzed each of the four domains of the TADA framework: data inference, differentiated instruction, cycles of inquiry, and data conversations, as defined below.

Data Inference

In a data-driven culture, the abundance of data can often overwhelm educators. TADA helps educators learn to ask good analytical questions and to use multiple data sources to draw appropriate inferences. At the beginning of the program, many teachers focus on simple, student-specific inferences from data; however, as the program progresses, investigating and analyzing aggregate data from a variety of sources becomes critical. Over time, educators build their capacity to use complex data sets accurately and confidently.

Differentiated Instruction

Facilitated PLCs guide teachers in the process of using the data to determine when to use whole-class, small-group, or individualized instruction and when a lesson needs to be retaught. Teachers create lesson plans for various groups based on skills or other instructional needs illustrated in the data and evaluate those lesson plans based on effectiveness data as well as their own (and their peers') reflection. Through observation and feedback, each teacher learns the pedagogical skills, instructional strategies, and reflective practices necessary to differentiate effectively in their classrooms.

Cycles of Inquiry

During the iterative process of cycles of inquiry, educators analyze data to identify students with similar needs, develop and implement new instructional strategies, assess growth, analyze the results, share findings with colleagues, and begin the process anew. In addition to identifying strategies that work, over time, cycles of inquiry sharpen the ability to quickly make adjustments to instruction based on frequent progress monitoring. Since these inquiry activities are done collaboratively, the atmosphere of experimentation embedded in the process fosters comfort with data sharing and transparency, building a culture of trust and mutual respect, moving teachers from a "my students" mentality to a collaborative "our students" approach to instruction.

Data Conversations

To use data effectively, educators need to engage in frequent, low-stakes, nonjudgmental conversations with students, parents, administrators, and other educators in order to understand results, enlist support, and motivate change. These conversations are critical for promoting data transparency — only when teachers and students believe data is used in a supportive way do they become truly comfortable with its use. Our methodology promotes the drawing of hypotheses from data, followed by conversations that dig deeper into the underlying circumstances that gave rise to the data.

Within each domain are skills critical for successful implementation of the framework, and our survey instrument was crafted to elicit reflection on the extent to which an educator currently implements each of the skills comprised by these four domains. We crafted multiple survey statements that allow educators to reflect on more than one aspect of each specific skill, and that provide opportunities to triangulate the data.

The Need for Survey Instrument Validation

In the development of the Data Use survey instrument, both expert and empirical validation were necessary. These two stages provide a comprehensive method for validating the survey instrument, therefore increasing the reliability and validity of the survey results. The first step in the validation process is expert validation, where experts in the field provide their educated opinions and suggestions for the survey instrument. This paper addresses the importance of expert validation to the instrument development process, the implementation process for the PLM survey instrument, and the next steps for empirical validation.

The Importance of Expert Validation During Instrument Development

When designing an instrument, expert validation is imperative to its success and acceptance in the field of education. Expert validity is defined by Haynes, Richard & Kubany as the degree to which elements of an assessment are relevant to and representative of the targeted construct for a particular assessment purpose (1995). The use of an expert panel to test validity lends legitimacy to the final instrument and its future implementation.

In order to select experts who demonstrate a knowledge base relevant to the areas of concern who can improve the construction and relevancy of the self-assessment, specific selected criteria must be adhered to. He or she must possess the correct background knowledge in the area of focus and be acknowledged by his or her colleagues as competent to critique the intended instrument. To select experts to validate the PLM Data Use survey instrument, we used criteria that select participants with a background relevant to the area of dispositional development, namely professionals with a background in various elements of our TADA framework.

Professional Learning Maps Data Use Survey Instrument Expert Validation Process

The expert validation process uses professionals in the field to assesses how well the instrument focused on the intended content. For the survey instrument, expert validation was employed to examine the use of a data analysis framework in a K–12 setting. Three separate phases were used to thoroughly validate the content using experts during the beginning, middle, and end of the instrument development cycle. The most comprehensive use of expert validation was the final step at the end of the development cycle.

The first phase consisted of a review of the survey items by Amplify coaches working in the field with educators using the TADA framework, and resulted in minor edits. The second phase used Amplify consultants to test whether the survey items were representative of the intended competency. The results found some redundancy and misalignment to intended competencies, which triggered the rewriting and reorganization of some survey items.

During the third phase, a representative sample of educational data analysis and data conversations experts helped design and/or use the data analysis framework to create the survey items. The experts who participated in the expert validation portion of instrument development shared their knowledge in a critical and thoughtful manner. Because these individuals are considered experts in the areas of data analysis, coaching, and data conversations, their opinions provided valuable judgments on the proposed instrument.

These experts focused on whether each item aligned to a particular framework competency and its focus, using their background knowledge of the instrument, a glossary of the framework terminology, and an expert validation questionnaire. This questionnaire was designed to facilitate critical analysis of each survey item in an accessible manner, and asked that the experts answer four questions about each survey item. These four questions were used to determine the presence of certain elemental criteria, examining things like whether or not the item is applicable to the framework component. They also gave the experts an opportunity to make suggestions regarding the wording in the survey, to optimize understanding.

The last phase of expert validation focused on the 42 skills that are housed within the Data Use Professional Learning Map. School and district leaders as well as internal experts participated in this process, looking at each survey statement along with a definition of each concept as it pertained to the survey. Three questions were asked of each item this time around, similar to the last phase of the previous validation experience. When each expert had completed their questionnaire, all results were transferred to a spreadsheet and synthesized for consistency.

These phases of expert validation resulted in revisions to the wording of about half the items to ensure that concepts were explained explicitly to the target audience; others were omitted for redundancy. The third validation phase became the final PLM Data Use survey instrument, although it is possible for expert validation to be revisited at a later date. Survey revisions also continue during empirical validation.

Professional Learning Maps Data Use Survey Instrument Empirical Validation

For the beginning stage of the empirical validation, the Data Use survey instrument underwent a pilot study with K–12 teachers and administrators in four school districts. All participants took the Data Use survey to acquire the data necessary to implement the TADA framework. The results of the survey varied by school depending on the school's focus of TADA in their PLC meetings. The results of the survey for all seven schools demonstrated patterns of need in each of the TADA components, with three schools showing little to no knowledge base of data analysis. Understanding data conversations and how to conduct them, as well as promoting student ownership of data, were seen as areas of need across schools. When Academic Leadership Team members (administrators, instructional coaches, teacher leads selected by the administration to be data experts/lead data professional development) were asked to evaluate the TADA framework process, which includes the PLM Data Use survey data, the general feedback was consistently positive: "We were thrilled to see the map and reflect on what teachers self-reported and what they actually see as reality in classrooms as well as during data conversations." Of the TADA process, another administrator said, "The learning maps gave us great data on what the teachers actually felt they needed. It gave us an idea of what to do with [teachers] in [their] meetings. It

validated that these were areas [we] needed to focus on together."

The administrator reflections and the PLM survey data, along with the results of the expert validation process, demonstrate the value of the survey instrument. Amplify is continuing to work on empirical validation and looking to expand the sample size to further test the reliability of the instrument with K–12 school districts. As these validation efforts continue, TADA and PLM will become a stronger and better system that delivers specific data to guide professional learning decision-making for school districts, campus administrators, and teachers.

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