7-10 HOURS
over multiple
time points

Develop and Analyze a Practical Measure

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Activity Rationale and Aims

Aims

01.

Teams will work together to develop a practical measure

02.

Teams will collectively analyze practical measure data to inform iterations and next steps

Activity Summary

This tool supports collaborators in designing, implementing, and using the results of a practical measurement. This process supports teams to evaluate a small change introduced into the system so as to enhance the outcome in timely and collaborative ways. This practice should be implemented as an iterative cycle that involves enacting a measurable activity, administering the practical measure, analyzing results, making changes to the activity based upon the analysis, enacting the revised activity, and once again administering the survey.

Rationale

Practical measures are short measures, usually a brief survey, that are used to determine whether a change introduced in a particular context is actually an improvement and meets the project's goals. These measures are "practical" in the sense that they are relatively quick to complete, they can be embedded into an existing routine (i.e., used as part of practice), and they are administered frequently. Practical measures should include just a few pointed questions that are specific to the context and customized for the specific population that will be responding. When they are easily scorable (e.g., use of yes-no response formats, or put into a tool like Google Forms), they are more easily used. Practical measures should be directly linked to the objective or goal and should be specific to the intervention or change idea implemented (Yeager et al., 2013).

Data from practical measures are used to inform iterations and next steps (Bryk et al., 2015). Practical measures are distinct from validated measures, and are designed to be contextually dependent and responsive. Collecting and analyzing data as a team provides opportunities for collaborators to evaluate the change introduced, to reflect on their roles as it relates to enacting the change, and to problem-solve if the change does not produce an improvement.

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In Person Steps

PART 1: COLLABORATIVELY DEVELOP A PRACTICAL MEASUREMENT

01.

Introduce the concept of a practical measurement as a way of supporting project goals and positively impacting design.

a. The purpose of a practice measure is to **support improvement**. Practical measures are practical in three senses:
   - They can be embedded into existing routines and practices.
   - They are **quick and easy** to administer and analyze.
   - They are **about** practice, focusing on a change idea or new activity.
   - The kinds of items that are valuable can ask about:
     - What participants *did*
     - How participants *experienced* a practice
     - How a practice relates to an *identity* of the participant

02.

Identify the context and aims of implementing a practical measure. What are the key constructs intended to be measured? Who is the audience?

03.

Collaboratively review previously tested surveys about the topic/construct. (Note: In advance of the meeting, the facilitator identifies relevant survey items to share with the group and adds them to the first column in the Creating our Practical Measure table.)

a. Share the filled in Creating Our Practical Measure document with collaborators.
b. Participants begin by reviewing each item and marking the items they think will yield actionable information (second and third columns).
c. Participants then brainstorm ideas about what they would do if a survey respondent rated an item low (fourth column).
d. Lead a discussion about the group's key noticings and wonderings.
   i. This could include identifying popular items and/or challenging items. It might also include noting what is missing from these items related to your change idea.
   ii. Encourage collaborators to revise items to better fit the specific context. If you are concerned about data quality, discuss what could help improve the quality of data (e.g., giving people sufficient time to respond; framing the purpose for respondents).
   iii. Guide collaborators to also discuss the pros and cons to different question formats (e.g., multiple choice/multiple select are descriptive statistics and easy to aggregate; open-ended responses can be coded).

In Person Steps

PART 1: COLLABORATIVELY DEVELOP A PRACTICAL MEASUREMENT (CONT.)

04.
From the shared notes, develop a draft of key survey items and organize them by construct.

05.
Invite collaborators to comment on the items and suggest which to keep or remove based on the group's goals and what they want to learn about the change idea.

06.
Discuss pros and cons of different formats for distributing the survey (index cards, paper survey, Google forms, Qualtrics).

a. What platform is most accessible given the context and audience?

b. How will the data be analyzed?

c. How will privacy of the data be protected?

d. What is the ideal frequency of data collection?

07.
Decide upon the ideal frequency of data collection and determine when the survey will be distributed (e.g., at the end of a weekly meeting, at the end of a class period). Determine who will be responsible for distributing the practical measure survey and collecting it.

PART 2: IMPLEMENTING A PRACTICAL MEASUREMENT

01.
Distribute the practical measure survey to the groups of people identified in the previous step.

02.
After one round of data collection, the facilitator should prepare visual representations of the data.

PART 3: ANALYZING THE DATA

01.
Ask collaborators to have a brief discussion with a partner before analyzing the data.

- What would count as a successful pattern of responses in the data? What are we hoping to see?
- How will we feel if we don't yet see what we hoped for?
    - What might we do in that case?
    - How might we support one another if we don't yet see what we hoped for?

In Person Steps

PART 3: ANALYZING THE DATA (CONT.)

02.
Then, share the data and visual representations with collaborators. Invite collaborators to review the data on their own first, posing the following prompts to guide their initial analysis. Consider asking collaborators to jot down their reflections, thoughts, and feelings as they review the data.

- Begin by making low inference observations that describe what happened without drawing conclusions or making judgments.
- What stands out to you?
- What are you proud of?
- What would you like to improve?

03.
Ask the group to divide into small groups (3-4 people) to discuss the data and keep notes in a shared document. You may wish to use the following prompts, or adjust them based on your context.

- How did you feel when you saw the data?
- What are you proud of?
- What would you like to improve?
- What, if anything, is confusing in the data?
- What patterns do you notice?
- What are the points of variation that you notice?
- What can we learn from outliers?
- How do these results compare to our hypotheses?

04.
Facilitate a group discussion. Begin by asking groups to summarize their small group discussions. Then, guide the group to think about how they could use the results from the data to iterate on the change idea and/or revise the practical measure survey.

- What can we learn from this analysis?
- Did implementing the change have any unintended effects, and if so what? How might we address these unintended effects?
- What might we want to alter in the design based on this data?
- What do we need to support those alterations?

PART 4: ITERATING ON THE CHANGE IDEA AND THE PRACTICAL MEASURE

01.
Using the analysis and discussion, determine if/how you will revise your design/change idea in the next cycle.

02.
Depending upon the revisions, collaborators could form small groups to work on this within the meeting or the facilitator could make the proposed revisions in between meetings and share them with the group for feedback and approval.

In Person Steps

PART 4: ITERATING ON THE CHANGE IDEA AND THE PRACTICAL MEASURE (CONT.)

03.
Then, implement the updated changes and then distribute the practical measure to collect data on whether or not the change was an improvement.

04.
After data has been collected, repeat the cycle of collectively analyzing the data and iterating on the design.

05.
Repeat the entire process of implementing the revised design, collecting and analyzing data, and iterating on the design.

After several rounds of iterating on the design, lead a discussion about how this process could be sustained.

- Could your group or others in the system continue to use this survey to gauge progress?
- What would that look like?
- Who would implement the survey? How often?
- When would you analyze the data?

MODIFICATIONS AND VIRTUAL ADAPTATIONS:

- Adjust prompts based on your group and context.
- Experiment with how you will share the data with the group. Ask for collaborators' input about what works and what facilitates analysis.

Facilitation Tips

- In the design of the practical measure, it will be important to consider measures that have been used in similar contexts in advance of the meeting.
- Be aware of how looking at the data may impact individuals and groups within your group. People who are intimately connected to the survey respondents or who were responsible for implementing the change, for instance, may find it difficult to look at less-than-perfect results. It's important to be attuned to the affective needs of the group, and to make space for people to acknowledge their feelings and offer one another support. It can be helpful to begin the process of analysis by inviting people to share their affective responses to the data, before interpreting them.
- Because this work may require a certain level of vulnerability, you may also want to discuss within the group the extent to which the data should be anonymous. For instance, is it necessary for the group to know whose classroom the data came from?
- When it is time to discuss the data, you may wish to remind the group that the data represents the thoughts, experiences, and opinions of real people and encourage the group to forefront the humanity of respondents over statistics or numbers within discussions.
- While the results from the practical measure help you to make informed decisions about revisions to the design and next steps, don't overlook the value of practical wisdom and experience. Collaborators and partners who are doing the work within context have valuable insights that might not always be captured in the results of the practical measure. You may decide to add a step that invites the group to reflect on what they noticed about the change idea and/or their experiences enacting the design in the field and take these reflections into account alongside the survey data when making adjustments.

Facilitator Preparation

MATERIALS

- [ ] Facilitator identifies measures in advance of the meeting, here is a template that can be used.

HANDOUTS OR SLIDES

- [ ] Facilitator identifies relevant survey items and adds them to the first column of the Tool for Creating Our Practical Measure table

Example from the field

A team of three high school language arts teachers and a researcher collaborated with the goal of creating more caring and inclusive classroom environments. To determine if the new daily routine they created made progress towards their goals, they developed a student survey as a practical measure. Every couple of weeks, teachers distributed the brief digital survey to students at the end of class to learn about students' experiences within their classrooms related to the new routine. Students spent 1-2 minutes completing the survey, agreeing or disagreeing with statements such as, "Today the routine made me feel like I matter in this classroom." The team then met to review and discuss the student survey data. Analyzing the practical measure data together provided opportunities for teachers to investigate their teaching practice and to problem-solve together as they worked toward the shared goal of cultivating caring classroom communities. The team used the data to determine modifications to the routine to support more caring and inclusive classrooms. In addition, the team refined the practical measure through revising, adding, or removing survey items based on their data discussions.

Additional Reading

Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better.* Harvard Education Press.

Penuel, W. R., & Potvin, A. S. (2021). Design-Based Implementation Research to support inquiry learning. In C. Chinn, R. Duncan, S. Goldman, & M. Kapur (Eds.), International Handbook of Inquiry and Learning (pp. 74-87). Dordrecht, the Netherlands: Springer.

Penuel, W. R., Van Horne, K., Jacobs, J., & Turner, M. (2018). Developing a validity argument for practical measures of student experience in project-based science classrooms. Paper presented at the Annual Meeting of the American Educational Research Association, New York.

Penuel, W. R., & Watkins, D. A. (2019). Assessment to Promote Equity and Epistemic Justice: A Use-Case of a Research-Practice Partnership in Science Education. *The ANNALS of the American Academy of Political and Social Science,* 683(1), 201–216. https://doi.org/10.1177/0002716219843249

Potvin, A. S. (2021). "Students speaking to you": Teachers listen to student surveys to improve classroom environment. Learning Environments Research, 24, 239-252. https://doi.org/10.1007/s10984-020-09330-1

Takahashi, S., Jackson, K., Norman, J., Ing, M., & Krumm, A. (2022). *Measurement for Improvement.* In Peurach, D., Russell, J., Cohen-Vogel, L., & Penuel W. (Eds.), The Foundational Handbook on Improvement Research in Education. Rowman & Littlefield Publishers, Lanham, MD.

Yeager, D., Bryk, A., Muhich, J., Hausman, H., & Morales, L. (2013). *Practical measurement.* Retrieved from https://labs.la.utexas.edu/adrg/files/2013/12/Practical-Measurement.pdf of Political and Social Science, 683(1), 201–216. https://doi.org/10.1177/0002716219843249

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Bryk, A. S., Gomez, L. M., Grunow, A., & LeMahieu, P. G. (2015). *Learning to improve: How America's schools can get better at getting better.* Cambridge, MA: Harvard University Press.

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Commitments to Equity and Wellness

Collaboratively designing research, curriculum, and shared experiences with an orientation towards equity necessitates procedures that can ensure that all voices are elevated, respected, and accounted for. Developing a practical measure collaboratively ensures that systems of iteration reflect the interests, needs, and perspectives of all partners. Distributing a practical measure, such as a survey, to people impacted by the design or change idea ensures that their experiences are centered in the design and iteration. Analyzing data collaboratively invites different perspectives and worldviews when making sense of data and translating results into action. This process provides an opportunity to cultivate care and community amongst the collaborators through attuning their affective experiences and relationships to the feedback being received.