
Interpreting
Evaluation Data
Unlocking Insights for
Project Improvement
ATE PI Conference
Workshop 2023

1


Asking Important
Questions and
Answering Them
With Solid Evidence
ATE PI Conference
Workshop 2023

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EvaluATE

TRAINING COMMUNITY RESEARCH ATE SURVEY

www.evalu-ate.org

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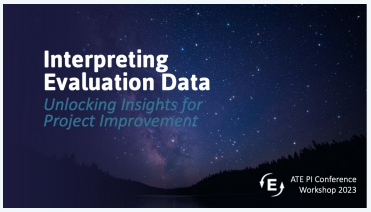
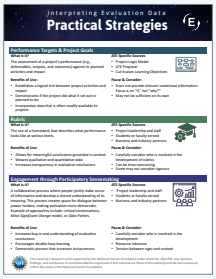
Materials



Slides



Additional Materials

bit.ly/ate-pi-2023

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Introductions

Megan
López

Lyssa
Wilson Becho

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Special Thank You

Kelly
Robertson

Maureen
Green

Lori
Wingate

Samantha
Hooker

Erika
Sturgis

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This material is based upon work supported by the National Science Foundation under Grants No. 1841783. The content reflects the views of the authors and not necessarily those of NSF.

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WORKSHOP

Agenda

- Welcome
- Evaluation Interpretation
- Practical Strategies
- Putting It Into Action
- Questions

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INTRODUCTIONS

At Your Tables

- Introduce yourself
- What could you give a 30-minute presentation about with no advance preparation?

10:00

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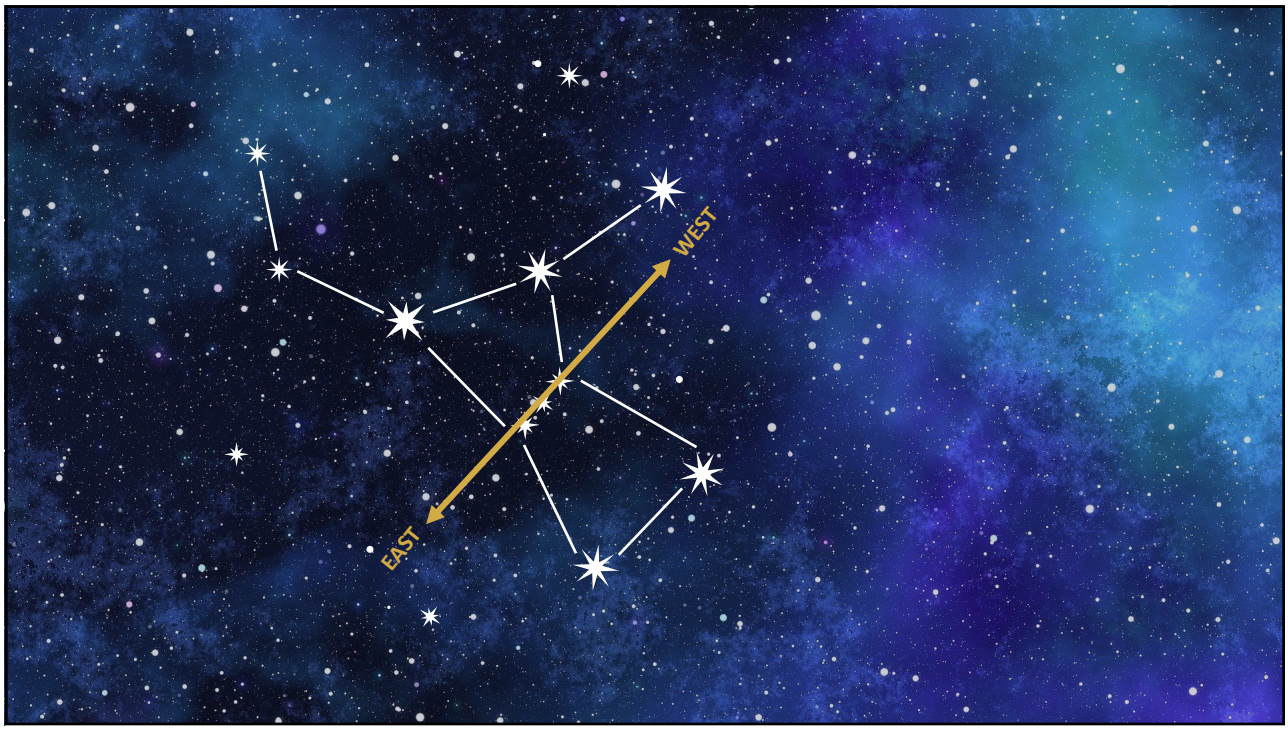

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Evaluation as an Argument

Evidence →	Values →	Conclusions
What kinds?	*Whose values?*	*How well did the project do?*
From who?	*How were they considered?*	*To what extent did the project meet its objectives?*
Was the collection legitimate?		*Was the project successful?*
Is the data trustworthy?		

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BASIC STEPS OF
Evaluation
Ask important questions
Gather evidence
Interpret data
Use and report conclusions

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BASIC STEPS OF
Evaluation
Ask important questions
Gather evidence
Interpret data
Use and report conclusions

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QUESTION FOR YOU

What would you do with this finding?

Evaluation Findings

In 2023, the project served 95 students who identified as Hispanic.

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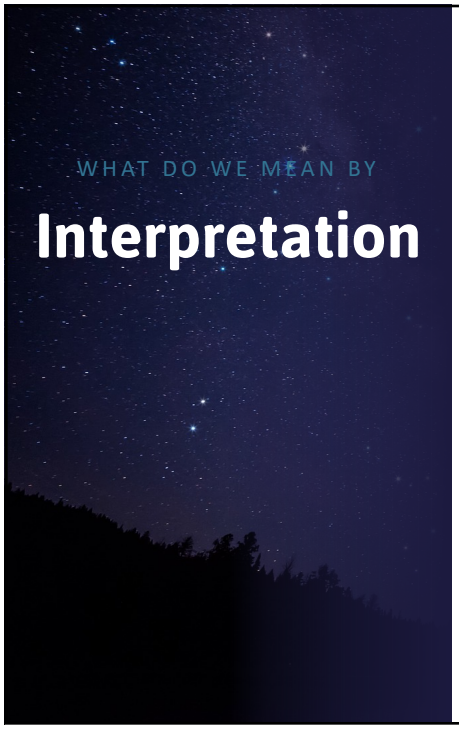

WHAT DO WE MEAN BY

Interpretation

- Meaning making
- Sense making
- Target setting
- Comparison to a benchmark

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INTERPRETING
EVALUATION DATA
Practical Strategies
Using performance targets or project goals
Measuring against meaningful comparisons
Developing evaluative rubrics
Engagement through participatory sense-making sessions

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Questions?

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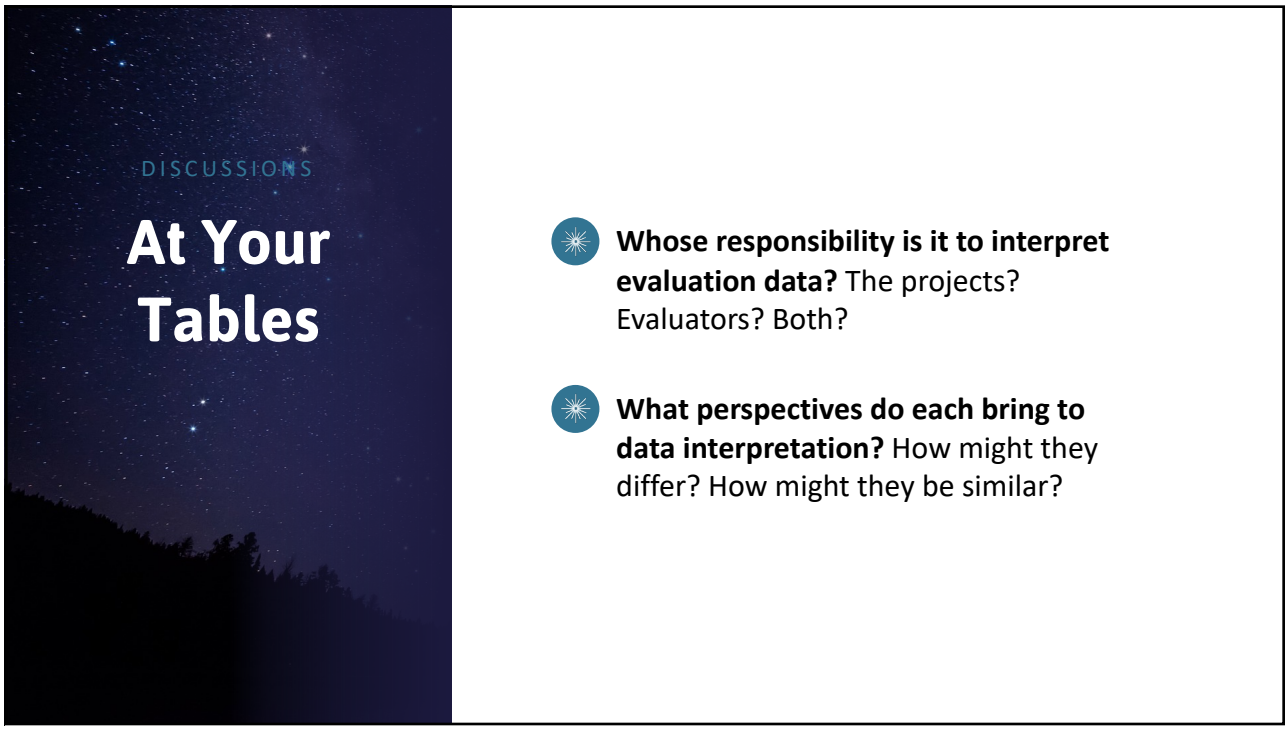
DISCUSSIONS
At Your Tables
Whose responsibility is it to interpret evaluation data? The projects? Evaluators? Both?
What perspectives do each bring to data interpretation? How might they differ? How might they be similar?

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Practical Strategies

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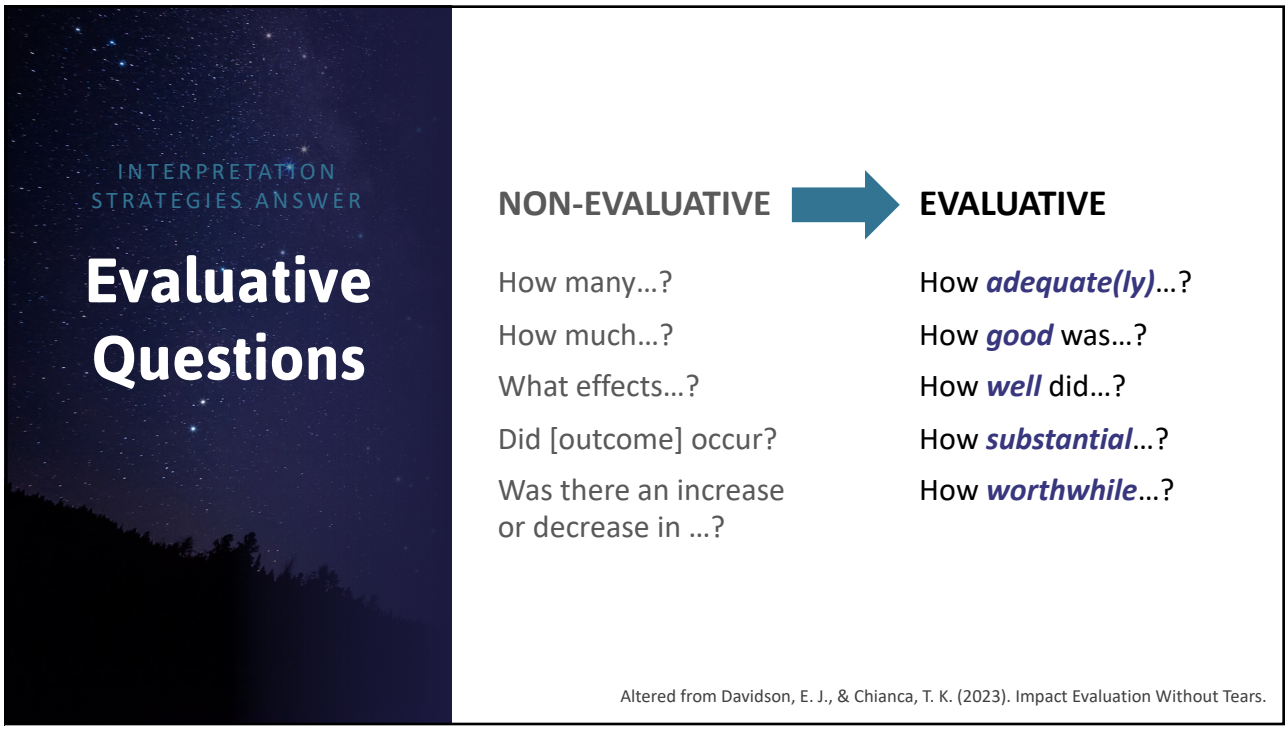
INTERPRETATION STRATEGIES ANSWER
Evaluative Questions
NON-EVALUATIVE
EVALUATIVE
How many…?
How much…?
What effects…?
Did [outcome] occur?
Was there an increase or decrease in …?
How adequate(ly)…?
How good was…?
How well did…?
How substantial…?
How worthwhile…?
Altered from Davidson, E. J., & Chianca, T. K. (2023). Impact Evaluation Without Tears.

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INTERPRETING EVALUATION DATA
Practical Strategies
Using performance targets or project goals
Measuring against meaningful comparisons
Developing evaluative rubrics
Engagement through participatory sense-making sessions

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Case Example

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PRACTICAL STRATEGIES

Performance Targets & Project Goals

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Performance Targets & Project Goals

- Assessment of a **project's performance** against its **planned activities and impact.**
- Consider your project's **outputs**, **deliverables**, and **outcomes**

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Performance Targets & Project Goals

- Assessment of a **project's performance** against its **planned activities and impact.**

Table #. Progress toward EvaluATE's implementation goals between 2018—22

- Activity was not offered
- Project goal not met
- Project goal met
- Project goal exceeded

Activity	Project Goal	2018	2019	2020	2021	2022
Webinars	4 per year	▲	▲	⊖	✓	▲
Resources	4 per year	⊖	✓	✓	⊖	▲
Conference presentations	3 per year	▲	▲	▲	▲	▲
Conference workshops	1 per year	▲	▲	✓	✓	▲
ATE evaluation coaching	96 PIs or evaluators per year 2020-22	-	-	⊖	⊖	⊖
Newsletter	Quarterly in 2018-19; monthly 2020-22	✓	✓	✓	✓	▲
Blog	12 per year	✓	✓	✓	✓	⊖
Webchats	12 per year May 2020-22	-	-	✓	▲	▲
Outstanding ATE Evaluation Award	Awarded annually since 2021	-	-	-	✓	✓

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PERFORMANCE TARGETS & PROJECT GOALS

ATE-Specific Sources

- Project Logic Model
- ATE Proposal
- Curriculum Learning Objectives
- Others?

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USING PROJECT GOALS IN OUR CASE EXAMPLE

Case Example

Evaluation Question

*How substantially did student **enrollment** and **retention** increase in manufacturing classes that implemented the new classroom?*

Activities	Outputs	Outcomes
• New Curriculum Implemented • Alternative forms of education delivery will be offered	• 60 students will enroll at the start of 2022. • 70% of first year students will enroll the following year	• Increased ***enrollment*** and ***retention*** in manufacturing program

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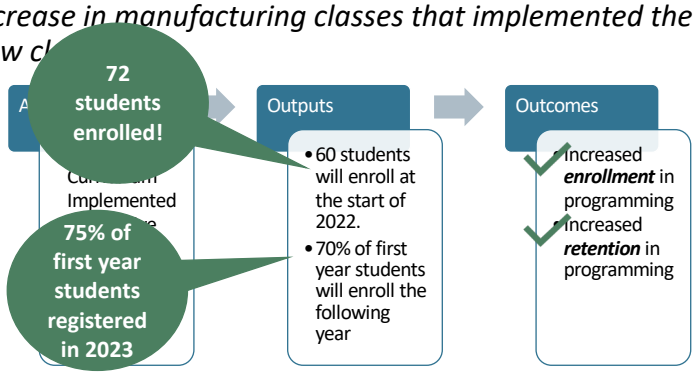
USING PROJECT GOALS IN OUR CASE EXAMPLE

Case Example

Evaluation Question

*How substantially did student **enrollment** and **retention** increase in manufacturing classes that implemented the new cl*



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PERFORMANCE TARGETS & PROJECT GOALS

Use & Considerations

BENEFITS

- Establishes a **logical link** between project activities and impact
- Demonstrates if the project did **what it set out to do**
- Incorporates data that is often **readily available**

PAUSE & CONSDIER

- Does not provide **relevant contextual information**. Focus is on "if," not "why?"
- May not be sufficient on its own

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PRACTICAL STRATEGIES
Comparative Methods
Historical or Baseline Data
Comparison Groups
Similar Programs
Benchmarking

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PRACTICAL STRATEGIES
Comparative Analysis against Historical or Baseline Data
Comparison Groups
Similar Programs
Benchmarking

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Comparative Analysis against Historical or Baseline Data

- Comparing **project data at various intervals** to make evaluative judgements.
- Compares what **happened *before* and *after*** the project was implemented.

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HISTORICAL OR BASELINE DATA

ATE-Specific Sources

ATE Proposal Project Description

Institutional Research Office

Grants Management Office

Others?

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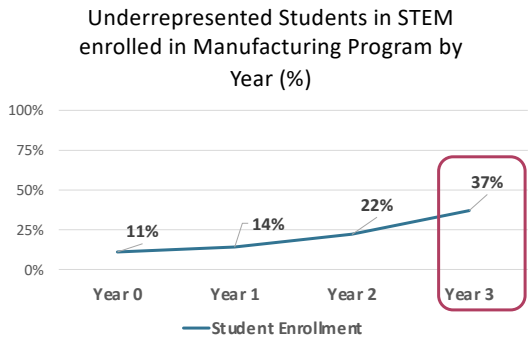
USING HISTORICAL DATA IN OUR

Case Example

Evaluation Question

*How adequately did the **proportion of underrepresented students in STEM increase** in the manufacturing program?*



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HISTORICAL OR BASELINE DATA

Use & Considerations

BENEFITS

- Situates data and findings in **project context**
- Easy to identify **if progress or change has occurred**
- You don't get hung up on setting benchmarks

PAUSE & CONSDIER

- How will you know if change is **significant**?
- Requires **planning** and/or **access** to data
- Collection **methods may vary** over time

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PRACTICAL STRATEGIES

Comparison Groups

Historical or Baseline Data

Similar Programs

Benchmarking

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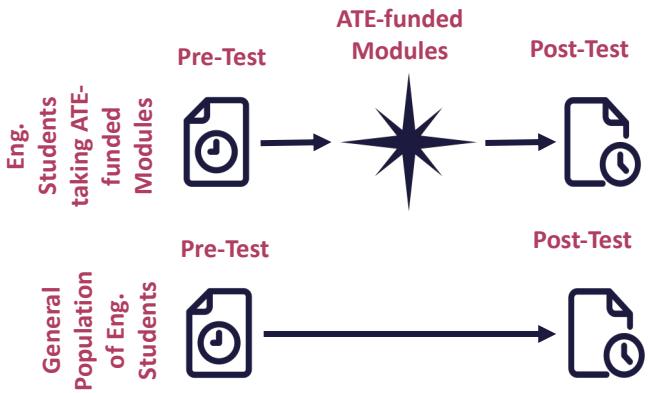
Comparison Groups

Comparing **project data against a similar group** that was *not* involved in the project.



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COMPARISON GROUPS

ATE-Specific Sources

Institutional Research Office

Grants Management Office

Others?

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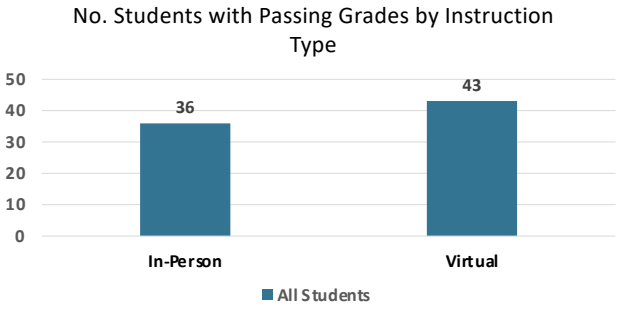
USING COMPARISON GROUPS IN OUR

Case Example

Evaluation Question

*Are there **differences in the effectiveness** of the new curriculum and lab activities across **student identities**?*



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USING COMPARISON GROUPS IN OUR

Case Example

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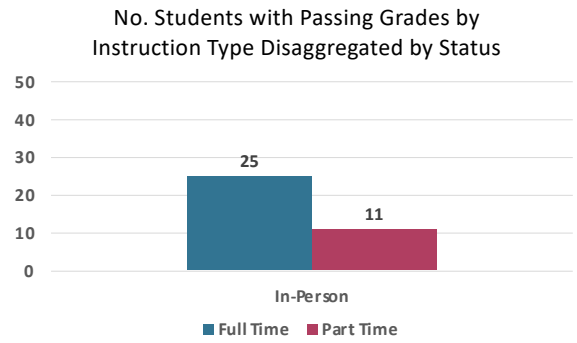

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USING COMPARISON GROUPS IN OUR

Case Example

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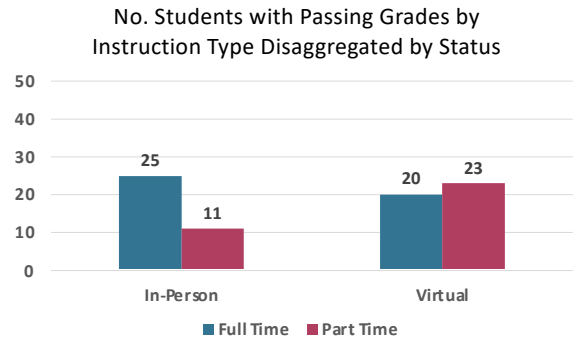

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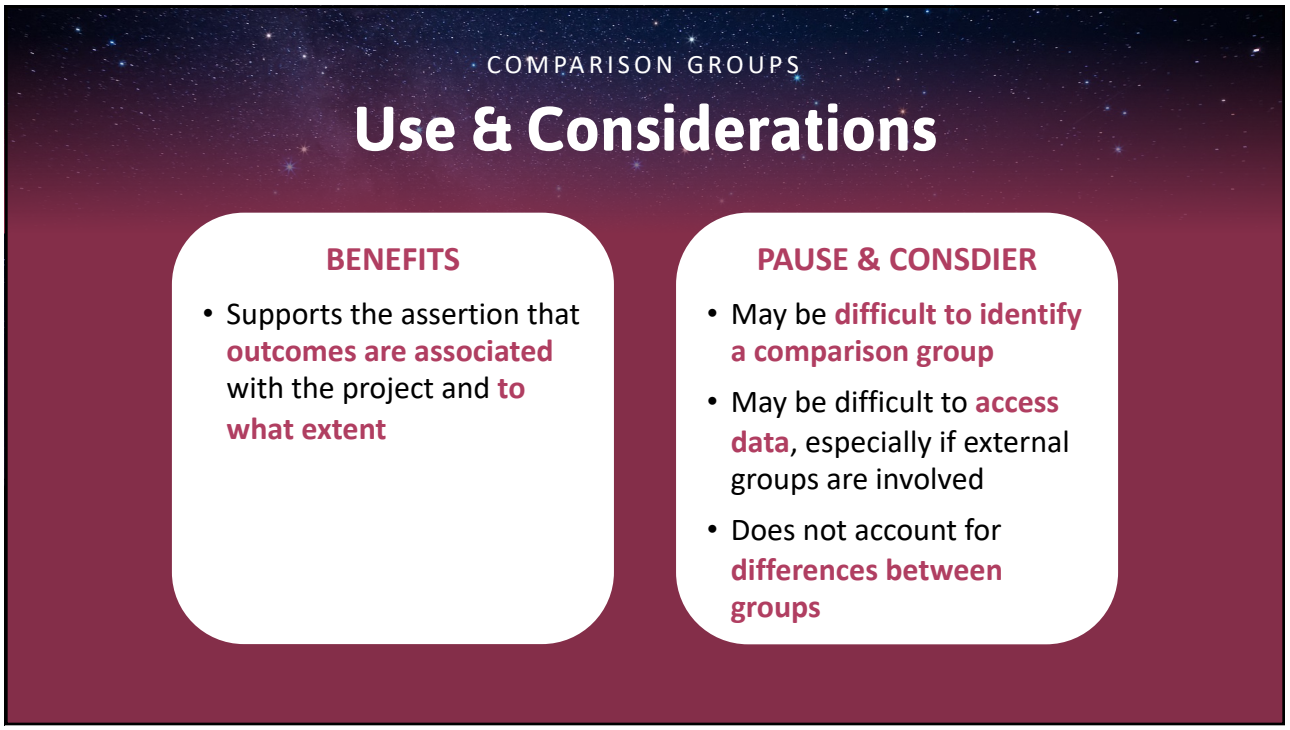
COMPARISON GROUPS
Use & Considerations
BENEFITS
• Supports the assertion that outcomes are associated with the project and to what extent
PAUSE & CONSDIER
• May be difficult to identify a comparison group
• May be difficult to access data, especially if external groups are involved
• Does not account for differences between groups

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PRACTICAL STRATEGIES
Similar Programs
Historical or Baseline Data
Comparison Groups
Benchmarking

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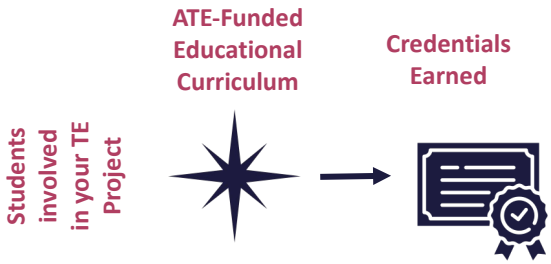
Similar Programs

- Comparing **project data against a project with similar activities or intended outcomes**.



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Similar Programs

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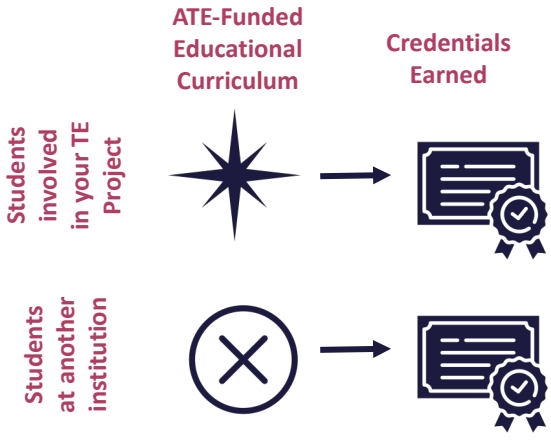

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SIMILAR PROGRAMS

ATE-Specific Sources

- EvaluATE's ATE Survey Report
- ATE Central Archives
- Research articles or publications
- Others?

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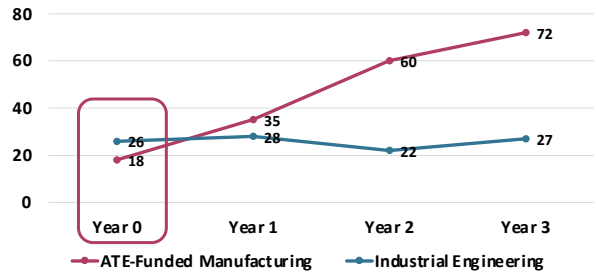
COMPARING TO SIMILAR PROGRAMS WITH OUT

Case Example

Evaluation Question

*How well were students able to **access** and* engage *with new curriculum and lab activities?*

No. Students Enrolled in STEM Programs by Year



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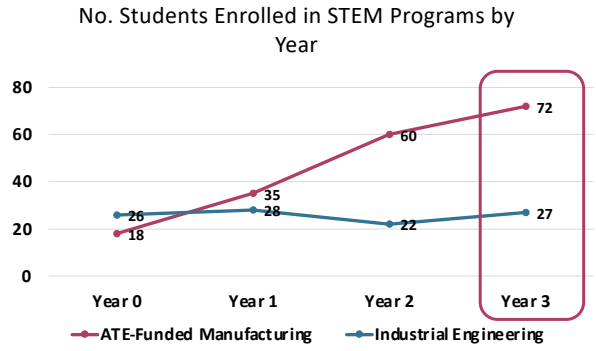
COMPARING TO SIMILAR PROGRAMS WITH OUT

Case Example

Evaluation Question

*How well were students able to **access** and* engage *with new curriculum and lab activities?*



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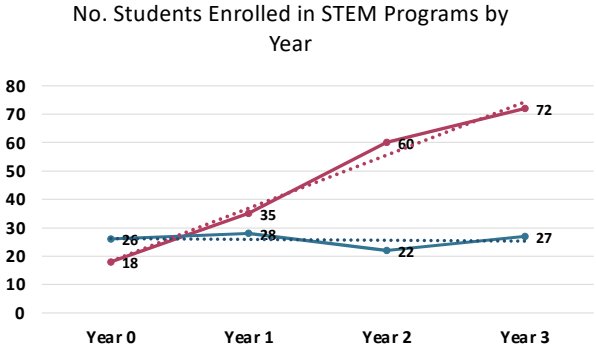
COMPARING TO SIMILAR PROGRAMS WITH OUT

Case Example

Evaluation Question

*How well were students able to **access** and* engage *with new curriculum and lab activities?*



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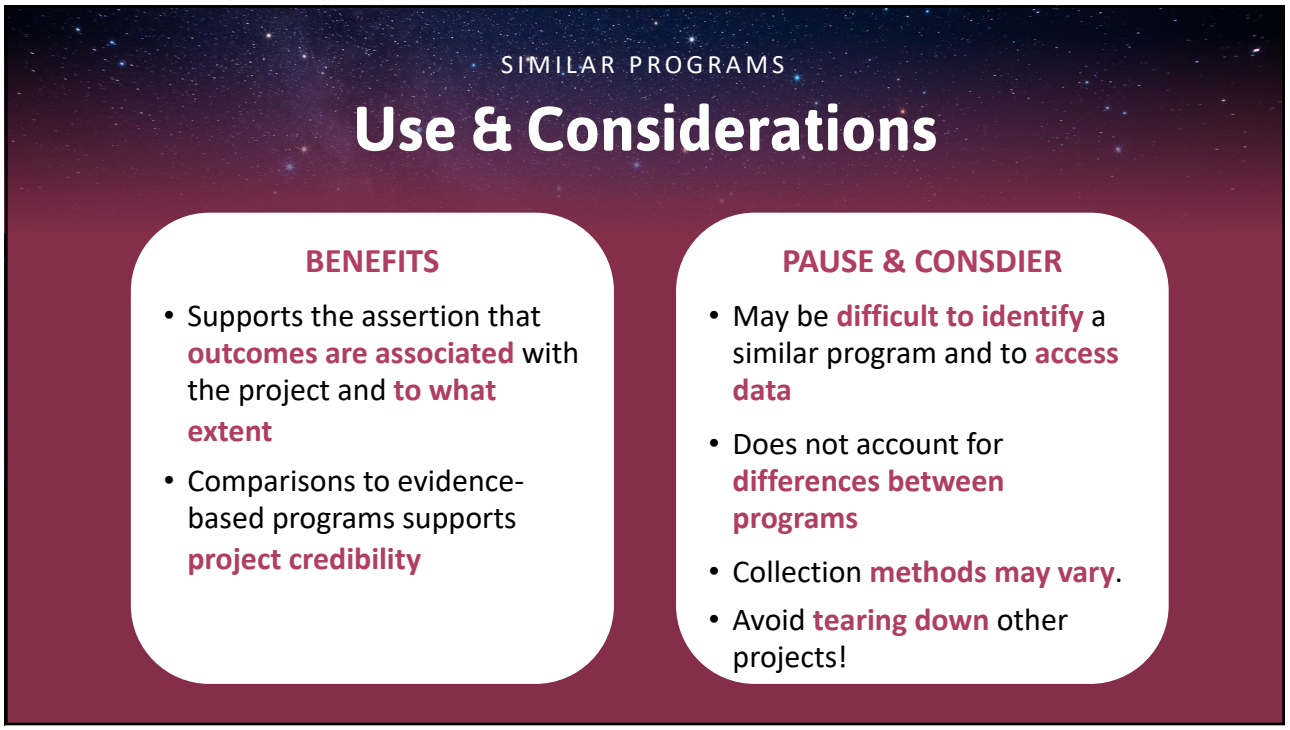
SIMILAR PROGRAMS
Use & Considerations
BENEFITS
• Supports the assertion that outcomes are associated with the project and to what extent
• Comparisons to evidence-based programs supports project credibility
PAUSE & CONSDIER
• May be difficult to identify a similar program and to access data
• Does not account for differences between programs
• Collection methods may vary.
• Avoid tearing down other projects!

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PRACTICAL STRATEGIES
Benchmarking against National Data Sets
Historical or Baseline Data
Comparison Groups
Similar Programs

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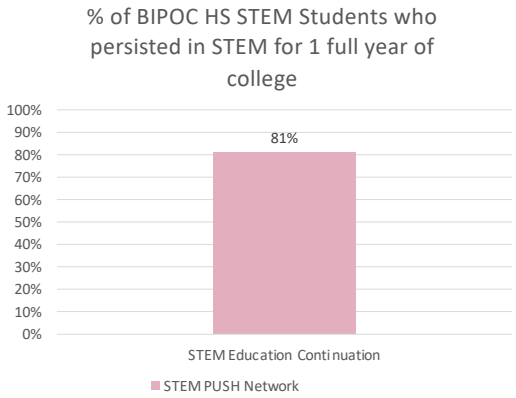
Benchmarking against National Data Sets

Comparing your **project data against standardized data collected on a national landscape.**



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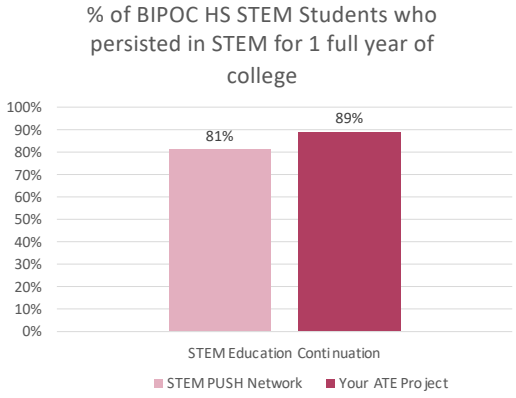
Benchmarking against National Data Sets

Comparing your **project data against standardized data collected on a national landscape.**



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BENCHMARKING AGAINST NATIONAL DATA SETS

ATE-Specific Sources

- National Center for Education Statistics
- NSF INCLUDES Shared Measures Initiative
- Research articles or publications
- Others?

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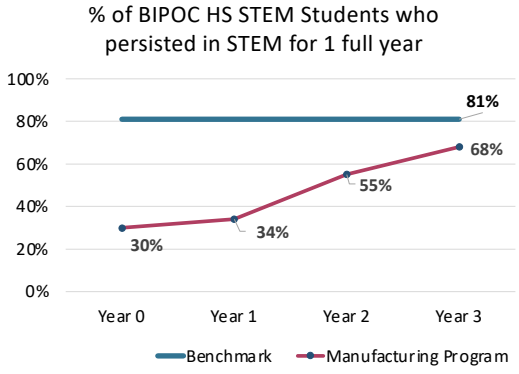
USING NATIONAL DATASETS WITH OUR

Case Example

Evaluation Question

*Are there **differences in the effectiveness** of the new curriculum and lab activities across **student identities**?*



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BENCHMARKING AGAINST NATIONAL DATA SETS

Use & Considerations

BENEFITS

- Provides a **control group** with likely a **large sample size**
- Can be **relatively simple** when data is available
- Can contribute to the larger field by **pooling data together**
- May provide **common data collection tools** and guidance

PAUSE & CONSDIER

- Do **national data sets exist**? Do you have **access** them?
- Collection **methods may vary**

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INTERPRETING EVALUATION DATA
Practical Strategies
Using performance targets or project goals
Measuring against meaningful comparisons
Developing evaluative rubrics
Engagement through participatory sense-making sessions

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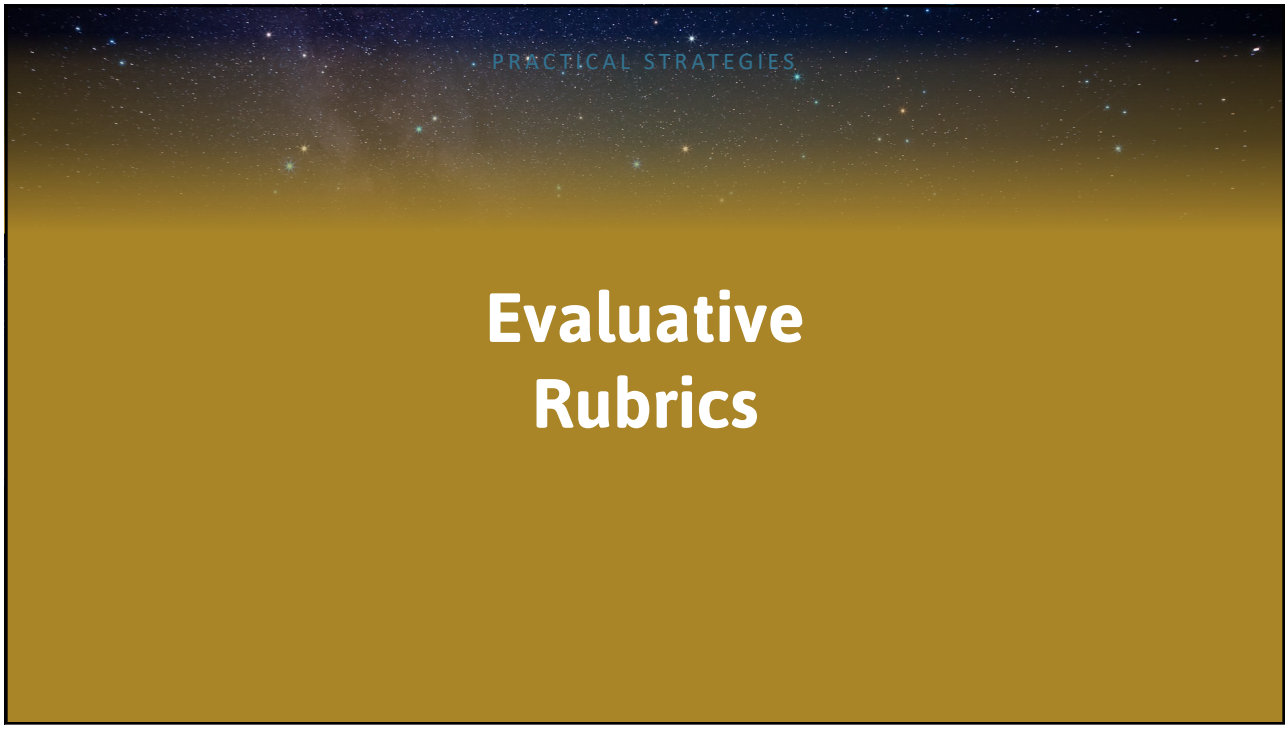
PRACTICAL STRATEGIES
Evaluative Rubrics

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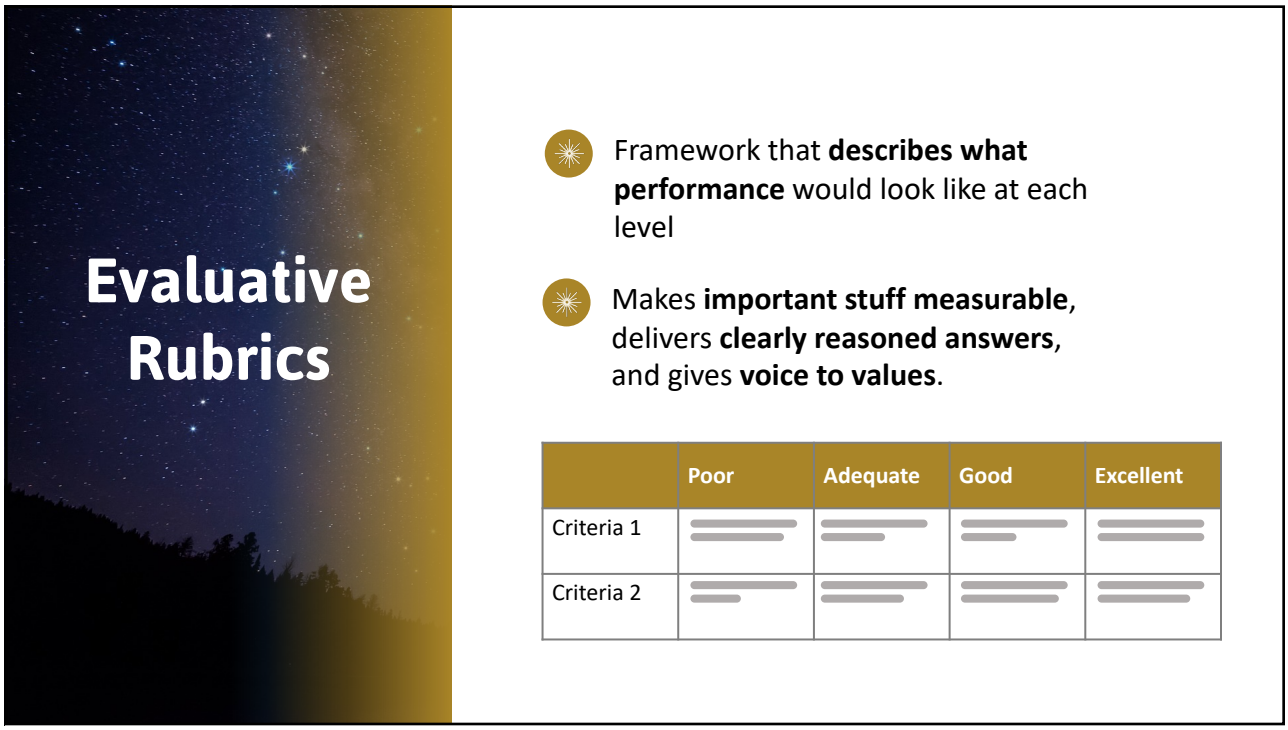
Evaluative Rubrics
Framework that **describes what performance** would look like at each level
Makes **important stuff measurable**, delivers **clearly reasoned answers**, and gives **voice to values**.
Poor
Adequate
Good
Excellent
Criteria 1
Criteria 2

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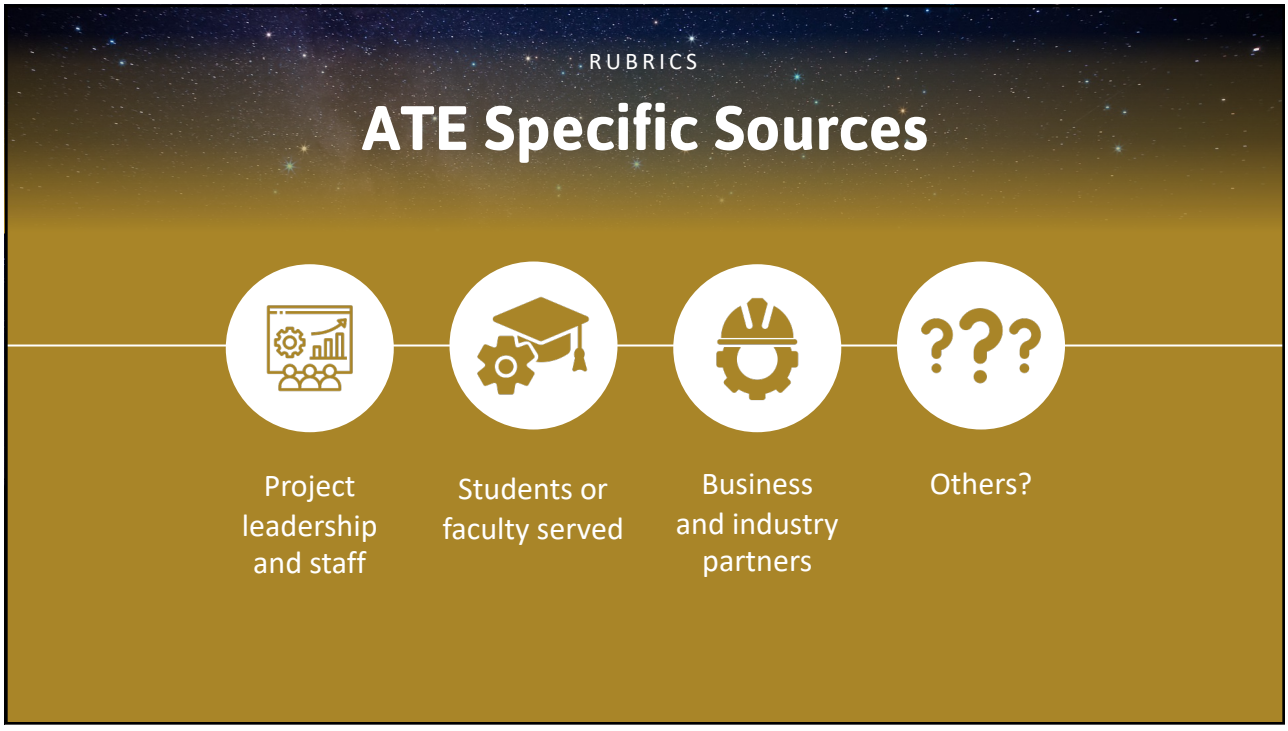
RUBRICS
ATE Specific Sources
Project leadership and staff
Students or faculty served
Business and industry partners
Others?

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USING RUBRICS IN OUR

Case Example

Evaluation Question

*How well were students able to **access** and engage with the new curriculum and lab activities?*

	Poor	Good	Excellent
Students ability to **access** lab activities	Most students had *difficulty* logging into the virtual lab	Most students were able to log in to virtual lab with limited connection issues	All students were able to *consistently* log in to virtual lab *without connection issues*

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USING RUBRICS IN OUR

Case Example

Evaluation Question

*How well were students able to access and **engage** with the new curriculum and lab activities?*

	Poor	Good	Excellent
Students ability to **engage with** lab activities	Most students had *difficulty* participating in the activities	Most students were able to participate in activities, with some reservations	All students were able to *consistently* participate in activities

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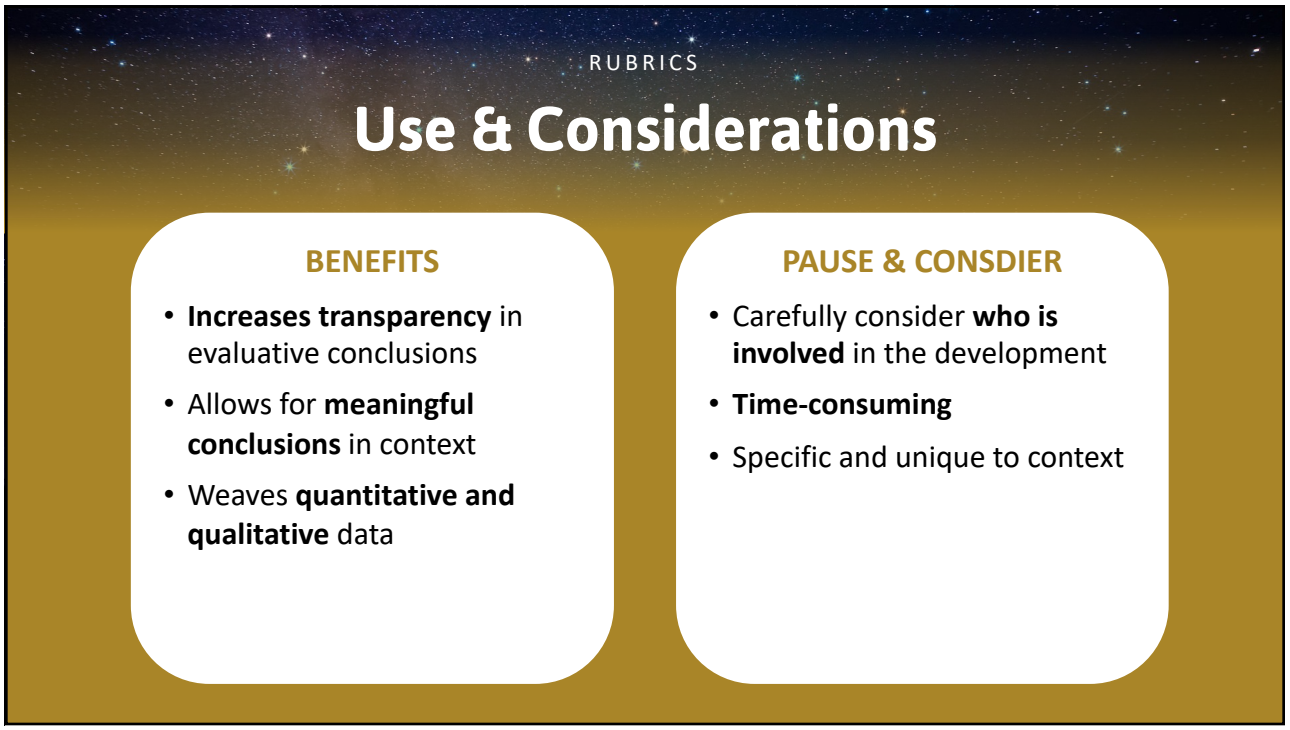
RUBRICS
Use & Considerations
BENEFITS
• Increases transparency in evaluative conclusions
• Allows for meaningful conclusions in context
• Weaves quantitative and qualitative data
PAUSE & CONSDIER
• Carefully consider who is involved in the development
• Time-consuming
• Specific and unique to context

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PRACTICAL STRATEGIES
Engagement through Participatory Sensemaking Sessions

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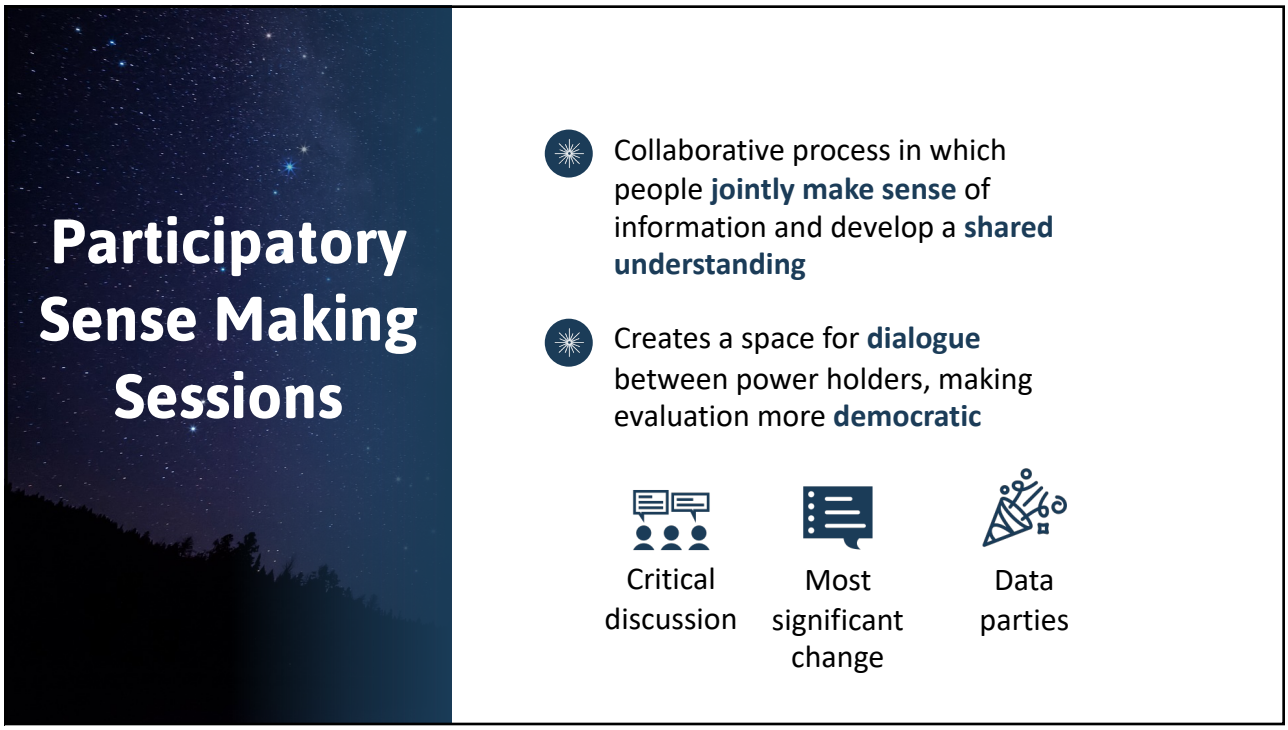
Participatory Sense Making Sessions
Collaborative process in which people jointly make sense of information and develop a shared understanding
Creates a space for dialogue between power holders, making evaluation more democratic
Critical discussion
Most significant change
Data parties

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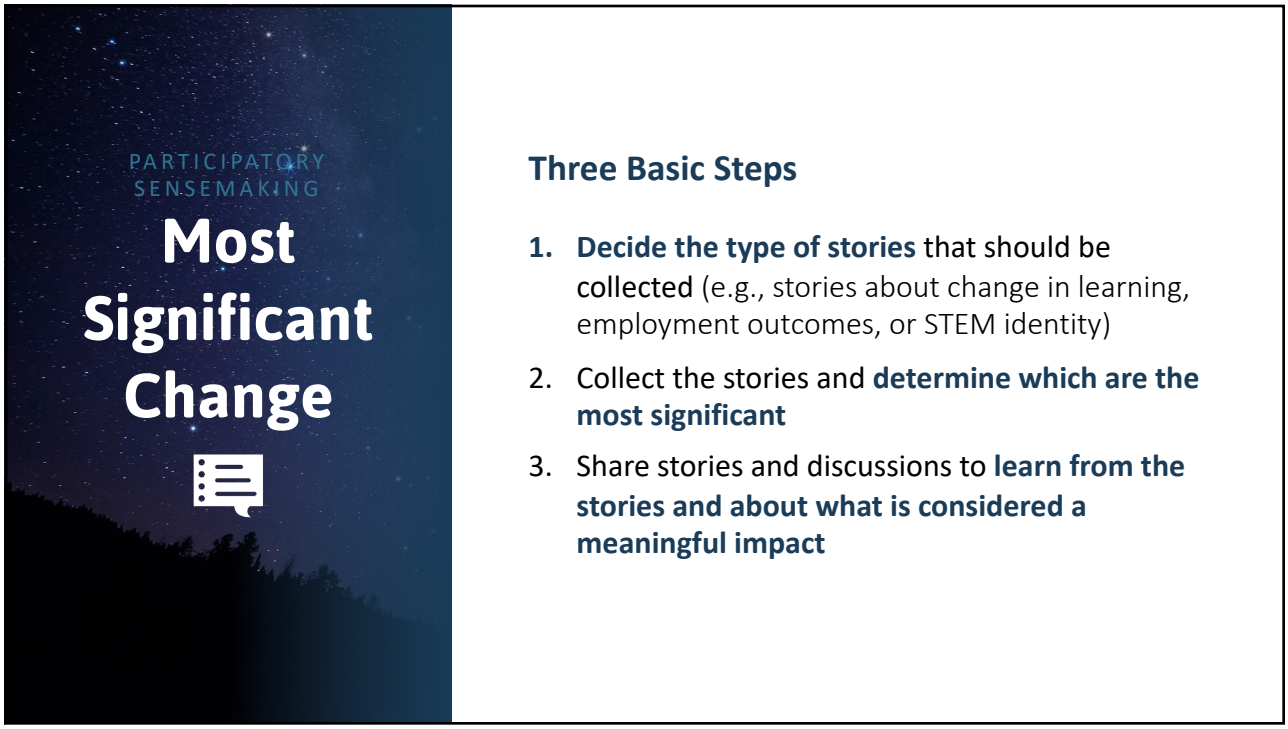
PARTICIPATORY SENSEMAKING
Most Significant Change
Three Basic Steps
1. Decide the type of stories that should be collected (e.g., stories about change in learning, employment outcomes, or STEM identity)
2. Collect the stories and determine which are the most significant
3. Share stories and discussions to learn from the stories and about what is considered a meaningful impact

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PARTICIPATORY SENSEMAKING

Data Parties

Activities

- Gallery walk
- World café
- Data dashboards
- Dotmocracy
- Virtual white boards
- Be creative!

Reflective Questions

- What is this data telling you?
- How does it align with your expectations?
- Is this better or worse than you expected?
- What really stands out for you?
- Are there any surprises here?
- What response do you think is required here?

Hutchinson, K. (2016). You're Invited to a Data Party!

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PARTICIPATORY SENSEMAKING SESSIONS

ATE-Specific Sources

- Project leadership and staff
- Students or faculty served
- Business and industry partners
- Others? ???

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USING SENSEMAKING SESSIONS IN OUR

Case Example

Evaluation Question

How adequately did the proportion of underrepresented students in STEM increase in the manufacturing program?

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PARTICIPATORY SENSEMAKING SESSIONS

Use & Considerations

BENEFITS

- **Increases buy-in** and **understanding** of evaluative conclusions
- Encourages **double-loop learning**
- **Democratic** process that increases **inclusiveness**

PAUSE & CONSDIER

- Carefully consider **who is involved** in the development
- **Resource intensive**
- Tension between rigor and context

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APPLICATION

Your Context

- Which of these strategies would work best in your context?
- Complete the activity worksheet considering your ATE project evaluation.

10:00

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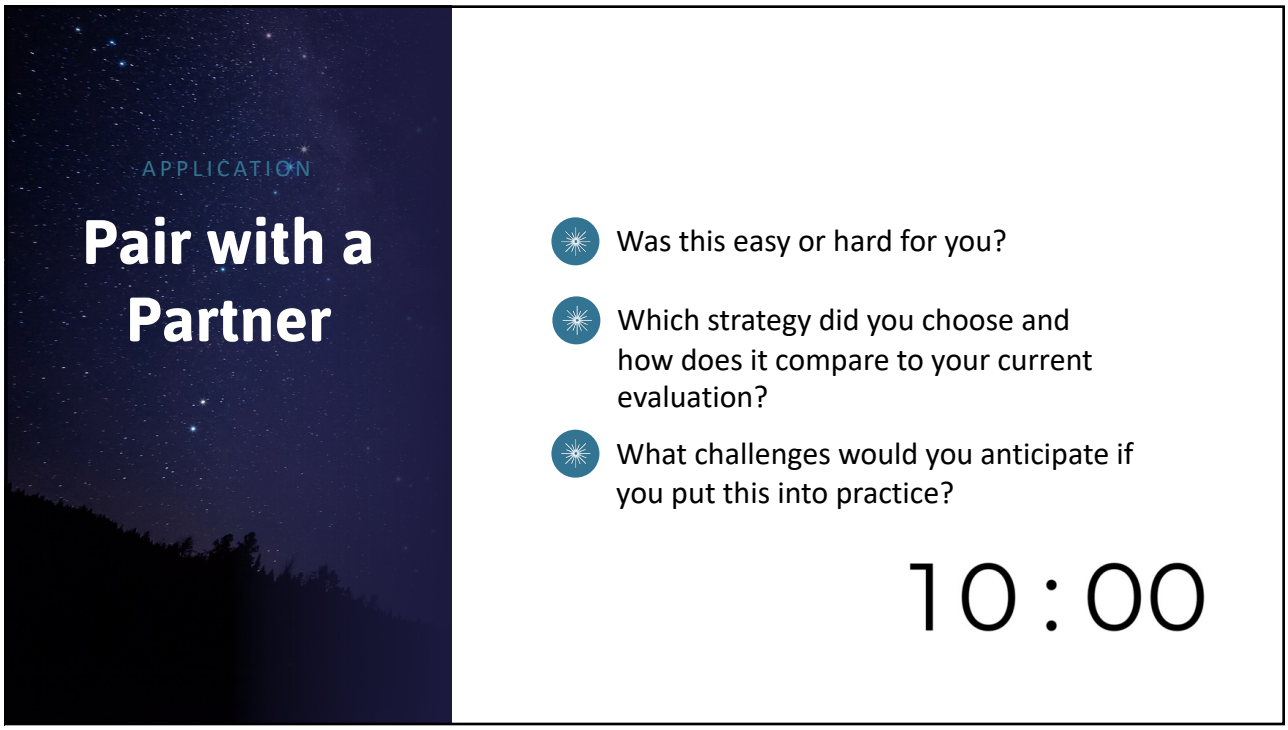
APPLICATION
Pair with a Partner
Was this easy or hard for you?
Which strategy did you choose and how does it compare to your current evaluation?
What challenges would you anticipate if you put this into practice?
10:00

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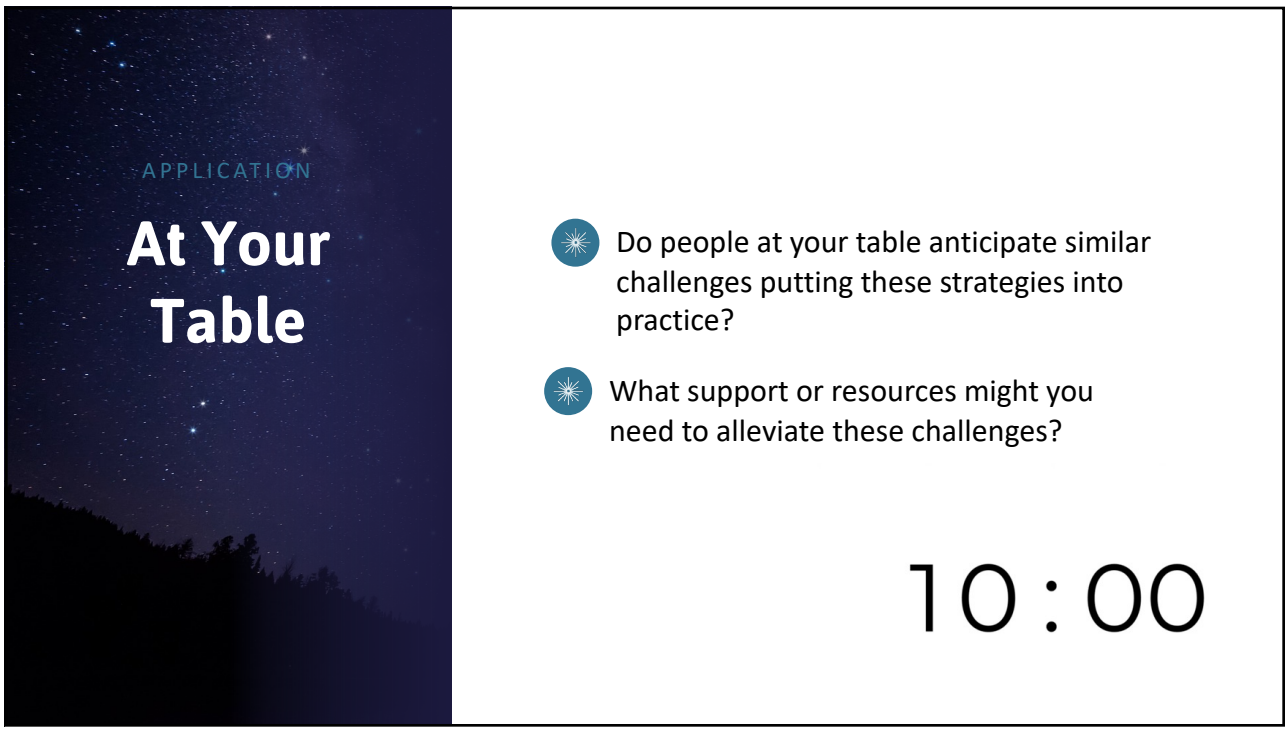
APPLICATION
At Your Table
Do people at your table anticipate similar challenges putting these strategies into practice?
What support or resources might you need to alleviate these challenges?
10:00

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APPLICATION

Full Group Reflections

- What stood out to you about your conversations?
- What questions do you still have?

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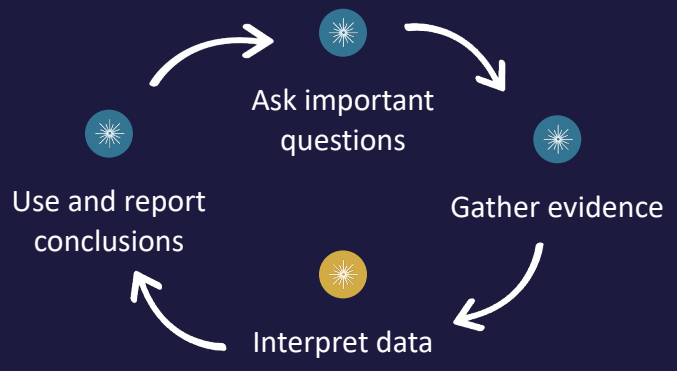
BASIC STEPS OF

Evaluation



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TIPS FOR PRACTICE

Pulling It All Together

- Consider interpretation from the start
- Remember this isn't easy!
- Employ multiple strategies
- Consider multiple perspectives
- Be transparent about this process in your report

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