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Education Cost Modeling

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Today's Takeaways

- Education cost models are research-based tools that help guide decisions about education funding.
- There are four main approaches to developing cost models, each with strengths and weaknesses. Oregon uses the Professional Judgment Panel approach.
- Best practices for a comprehensive Professional Judgment Panel approach are rigorously structured and incorporate elements of other approaches.
- A recent evaluation of Oregon's current cost model, the Quality Education Model (QEM), identified several areas of misalignment with methodological best practices that affect its usefulness for connecting cost estimates to education policies and programs.
- The Professional Judgment Panel approach is a time- and resource-intensive process requiring substantial time commitment from panelists and skilled facilitators and researchers with expertise in the approach.



What Is an Education Cost Model and Why Does Oregon Need One?



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Education cost models are tools for decision-making

Education cost models help policymakers answer the question: ***How much money is sufficient to ensure the public education system meets quality goals?***

They are research-based tools used to guide decisions about:

- How much total funding to allocate to education each budget cycle
- How to distribute the funding to school districts

Education cost models can also provide policy-relevant information about:

- Geographic differences in costs
- The types of education resources (e.g., staffing, materials, and services) needed to achieve education goals
- How resource needs vary across different school contexts and for different levels of student needs



Constitutional and legislative requirements necessitate an education cost model in Oregon

- Constitutional requirement for sufficiency, enacted in 2000

Section 8. Adequate and Equitable Funding. (1) *The Legislative Assembly shall appropriate in each biennium a sum of money sufficient to ensure that the state's system of public education meets quality goals established by law and publish a report that either demonstrates the appropriation is sufficient, or identifies the reasons for the insufficiency, its extent, and its impact on the ability of the state's system of public education to meet those goals.*

- In 2001, the legislature established the Quality Education Commission to define the costs sufficient to meet the quality goals. It directed the QEC to determine sufficiency using research, data, professional judgment, and public values and identify best practices and the costs of implementing those practices in Oregon public schools ([ORS 327.497 – ORS 327.506](#)).



There are four main approaches to modeling education costs

Professional Judgment Panel (PJP): Based on the costs of educational resources identified by practicing educators with experience in prototype school settings. Limited evidence of the link between resources and outcomes.

Evidence-based: Based on the costs of educational resources identified in research literature as being effective. Limited state context.

Successful schools: Based on resource allocations in schools that are achieving target outcomes. May not capture varying school contexts and student needs.

Cost-function (econometric): Based on the statistical relationship between current school expenditures and outcomes. Limited insight into the education resources that underlie costs.

Hybrid approaches are commonly used.

Oregon's Quality Education Model (QEM) uses Professional Judgment Panels.



What Are the Best Practices When Using Professional Judgment Panels?

There are six steps to modeling education costs using Professional Judgment Panel best practices

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

In the Professional Judgment Panel (PJP) approach, groups of active educators—the panels—work together to identify the resources necessary to provide an adequate education to all students, then researchers determine the prices of those resources and estimate the total cost.

A comprehensive PJP approach incorporates elements of the evidence-based and successful schools cost modeling approaches. Facilitators and researchers follow a 6-step structured process to develop the model.



Professional Judgment Panel Best Practices: Step 1

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

The PJP process should start with a goals statement that reflects the state's education priorities. Panelists are tasked with designing prototype schools to achieve these goals. *It is best practice to:*

- Set goals based on published aims and public values. They can be specific and measurable or broader and more abstract
- Use multiple goals
- Balance having a variety of goals with not overwhelming the expert panelists



Professional Judgment Panel Best Practices: Step 2

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

Prototype schools should reasonably represent the breadth of school contexts, characteristics, and student needs that are outside the control of schools and districts. *It is best practice to:*

- Generate numerous prototypes
- Generate realistic prototypes using current data on enrollment size and student needs
- Balance the number of prototypes with not overwhelming the panelists



Professional Judgment Panel Best Practices: Step 3

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

The panels are tasked with determining the types and amounts of resources the prototype schools need. Panels should represent a breadth of experience and perspectives to inform the design of education programs for the prototype schools. *It is best practice to:*

- Recruit panelists who are active educators in schools and districts reflecting the prototype settings, including geographic locale
- Ensure a variety of roles in a school are represented
- Include panelists familiar with different grade levels and student needs for the prototype schools
- Run multiple panels per prototype to generate cost variation



Professional Judgment Panel Best Practices: Step 4

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

Resource identification is a critical step in the process. Program components and base assumptions about what to include as costs should be in place before panels meet to specify resources. Some resources are outside the scope of panels and should be determined by an analysis of existing data. *It is best practice to:*

- Compile an exhaustive list of resources
- Define resources the panelists will specify; differentiate by school level
- Define resources the research team will specify and determine costs for
- Give panelists base assumptions about costs and resources



Professional Judgment Panel Best Practices: Step 5

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

Establishing prices for the resources identified by panelists is another critical step in the PJP process. Prices should be realistic, reflecting state context and aligning resource categories with school definitions. *It is best practice to:*

- Use statewide average prices, when possible
- Adjust to state-level costs when using national average prices
- Structure resource types to facilitate accurate cost identification



Professional Judgment Panel Best Practices: Step 6

1. Define Education Goals

2. Develop Prototype Schools

3. Recruit Educator Panels

4. Identify Education Resources

5. Establish Resource Prices

6. Generate Cost Estimates

In this step researchers estimate the per-pupil costs for each prototype school based on the panels' resource specifications and prices, estimates the average variation in costs by student needs and school context, predicts school-level costs for each school in the state, and then calculates district-level costs to derive the final cost estimates. *It is best practice to:*

- Estimate average variation in costs based on student needs and school characteristics
- Predict actual cost levels for each school in the state
- Aggregate school costs to the district level, add central district costs, and apply regional cost adjustments



What Did the AIR Evaluation Say About Oregon's QEM?



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Overview of AIR's Evaluation of Oregon's Quality Education Model

- Senate Bill 1552 (2024) directed an evaluation of the methodology used to develop the Quality Education Model (QEM).
- The American Institutes for Research (AIR) independently conducted the evaluation. Its findings were published in a report in January 2025 and presented at a joint informational meeting to the House and Senate Education Committees in February 2025.

Overall, the evaluation did not find any fundamental errors in the QEM, but it did identify several areas of misalignment with methodological best practices that impact the model's usefulness for connecting cost estimates to education policy and programs.



Summary of AIR Evaluation Findings (1 of 3)

Step 1: Define Education Goals

- **Best practice:** Use multiple goals based on published aims and public values
- **QEM practice:** Uses a single goal, 90% graduation rate statewide

Step 2: Develop Prototype Schools

- **Best practice:** Use numerous prototype schools that represent the breadth of school contexts, characteristics, and student needs
- **QEM practice:** Uses 3 prototype schools representing the average elementary, middle, and high schools in Oregon



Summary of AIR Evaluation Findings (2 of 3)

Step 3: Recruit Educator Panels

- **Best practice:** Use multiple panels of active educators from schools reflecting the prototypes and who serve in a variety of roles
- **QEM practice:** Uses a single panel of up to 11 members (currently only 7), the Quality Education Commission; no more than 5 members can be active educators

Step 4: Identify Education Resources

- **Best practice:** Panelists develop an exhaustive list of resources based on program components that are predetermined by researchers using research literature, and current resource and demographic profiles of Oregon's schools
- **QEM practice:** Resource list is not exhaustive because only a single goal is used; panelists specify both program components and resources



Summary of AIR Evaluation Findings (3 of 3)

Step 5: Establish Resource Prices

- **Best practice:** Use statewide average prices when available; national prices should be adjusted to state-level costs
- **QEM practice:** Uses statewide average prices for almost all resources

Step 6: Generate Cost Estimates

- **Best practice:** Estimate average variation in costs based on school contexts; estimate costs for each school, then estimate costs for each school district by aggregating school costs, adding central district costs, and applying regional cost adjustments
- **QEM practice:** Estimates cost for each prototype school; does not estimate variation in costs based on school contexts and does not provide estimates for each school and school district



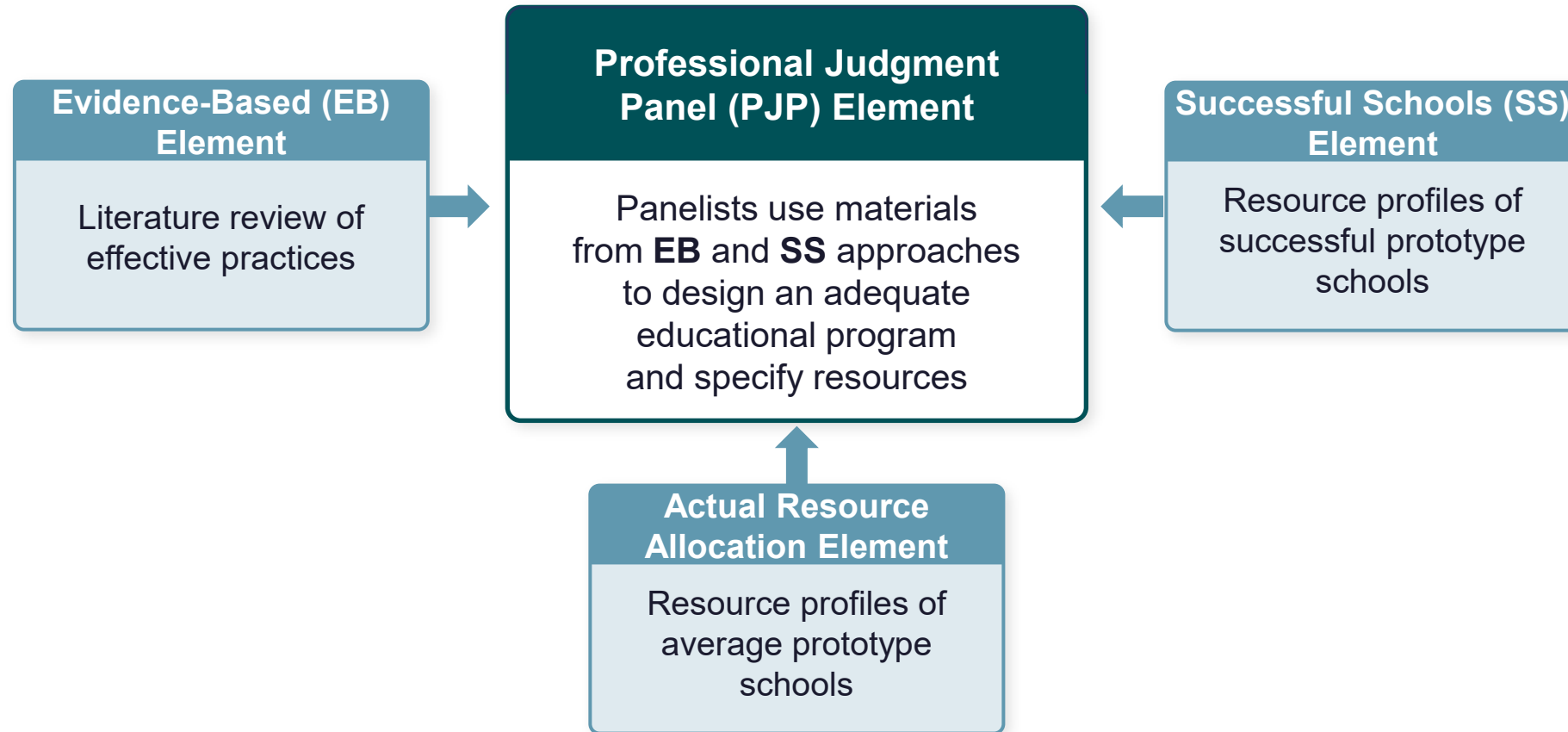
How Do Professional Judgment Panels Work in Practice?

Considerations for Using the PJP Approach to Develop a Cost Model

- The Professional Judgment Panel process is time- and resource-intensive.
 - It requires a substantial time commitment (~3 days) from active educators who serve as panelists.
 - It requires skilled facilitation of panels, including at least 1 lead facilitator and supporting staff, and an experienced research team with the appropriate tools to guide panelists through the process.
 - The process could take up to a year, followed by routine maintenance to ensure resource prices and cost estimates are up to date.
- Reports should include documentation that clearly and thoroughly details the goals, program components, base assumptions, resource specifications, prices, and calculations used to develop the cost estimate.
- The cost model should be responsive to changing education contexts and needs, but changes should be incremental to ensure stability of the cost estimate.
- The Professional Judgment Panel approach, like other education cost studies, has limitations that should be taken into consideration when translating findings into policy and practice.



A comprehensive PJP approach incorporates elements of other approaches



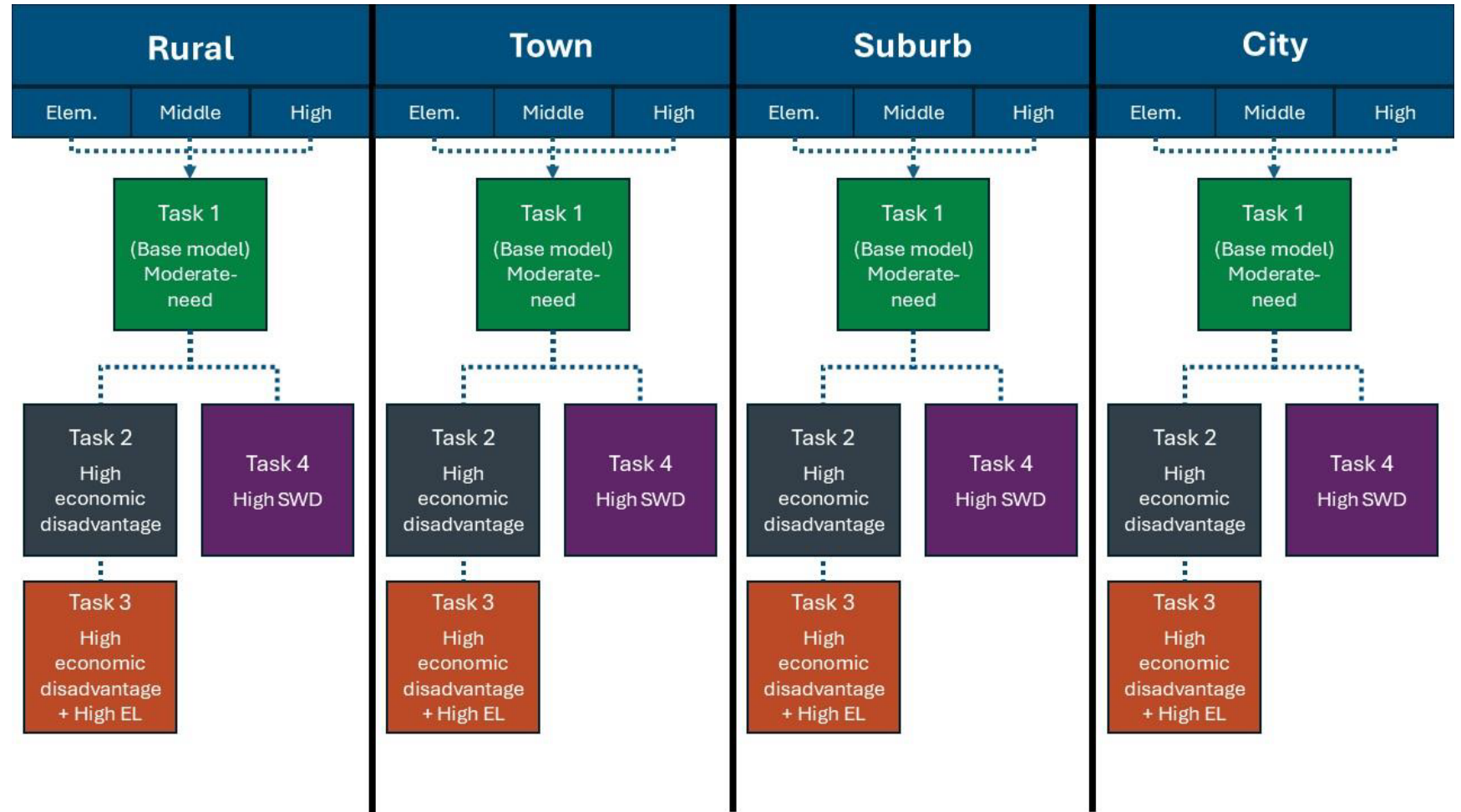
Source: National Education Association, *Determining the Cost of Providing an Adequate Education for All Students* (2009).

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Example of Prototype Schools

This example shows 48 prototype schools representing varying student needs for each school level within each locale.



Source: American Institutes for Research, *Review and Evaluation of the Efficacy and Methodology of the Quality Education Model* (2025).

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PJP Researcher and Facilitator Roles (1 of 2)

Research and preparation

- Conduct surveys, listening sessions, and/or convene stakeholder meetings to gather input
- Analyze state data to summarize school characteristics and demographics, expenditures, and outcomes
- Conduct a literature review to identify effective education programs and practices that align with state education goals, school characteristics, and student needs

Recruit and select panelists and coordinate panel meetings

- Manage a statewide solicitation of panelist nominations from key stakeholder groups
- Review applications and select panelists to ensure balanced panels of about 10 educators representing different roles and school contexts; the number of panels depends on the number of prototype schools
- Coordinate in-person panel meetings, which can be up to 3 days long; provide travel reimbursement and an honorarium to panelists for their time and expertise



PJP Researcher and Facilitator Roles (2 of 2)

Facilitate panels

- Provide a package of materials to panelists to aid in developing their education resource specifications; the package could include summaries from the literature review, demographic and resource profiles of Oregon schools, including those that are achieving target goals, and instructions for the panels
- Provide worksheets organized by education program components for each prototype school for panelists to record their resource specifications
- Facilitate panel deliberations to achieve consensus; convene a broader review panel to reconcile differences across panels

Calculate cost estimates

- Determine resource prices and convert panels' resource specifications to costs; calculate costs associated with central administration, which are not included in panelists' specifications
- Analyze variation in costs across school types and student needs
- Calculate cost estimates statewide and for each school and school district; write and disseminate the report



Resources

Read the full AIR evaluation report or LPRO's summary of the report:

- *Review and Evaluation of the Efficacy and Methodology of the Quality Education Model* (AIR, 2025)
- *American Institutes for Research Evaluation of the Quality Education Model Methodology: Summary of Findings* (LPRO, 2025)

Read more about education cost modeling approaches:

- *Determining the Cost of Providing an Adequate Education for All Students* (National Education Association, 2009)
- *An Evidence-Based Approach to School Finance Adequacy in Michigan: Determining the Cost for Funding Educational Achievement for All Michigan Students* (Picus Odden & Associates, 2018)

