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ECDataWorks Programmatic Use Case for the Development of an Analytic Tool

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Abstract

This brief provides an overview of programmatic use cases for state early childhood data, the benefits for state leaders and community stakeholders, and a sample template.

Keywords

ECIDS, Early Childhood, Integrated Data Systems, IDS

Disciplines

Early Childhood Education



ECDataWorks Programmatic Use Case for the Development of an Analytic Tool

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This brief provides an overview of programmatic use cases for state early childhood data, the benefits for state leaders and community stakeholders, and a sample template.

Programmatic use cases for an Early Childhood Integrated Data System (ECIDS) are a reflection of stakeholder information needs and uses. Programmatic use cases address emerging unmet state-specific need so users can make data-informed decisions that support their quality improvement efforts. For states that are planning to, or have plans to implement an ECIDS, this can be a great first step to initiate that process and to begin taking a small step towards integrating cross-agency data.

What is a programmatic use case?

A programmatic use case describes the information needs in response to state early childhood priorities. This includes refining the specific key programmatic policy question(s) the analytic tool could answer, the purpose for integrating data, and to inform the planning of the integration of data elements from contributing programs. A use case is commonly found in the Information Technology (IT) sector and used primarily for specifying business requirements during system design, and later for user testing, that requirement has been met.

What are the benefits of a programmatic use case?

Having a programmatic use case helps to discuss the key information with agency leadership and community stakeholders about critical elements required as well as to show tangible actions to demonstrate the benefit to the state and the identified primary users.

| | | | |
|---|--|---|---|
|  | Articulates and documents the information needs of the intended users |  | Helps to prioritize what data elements are needed across data systems |
|  | Aligns policy questions with decisions and actions |  | Communicates the outcomes to executive leaders to align with state priorities |
|  | Identifies access and functionality early and the actions taken from the information needs |  | Prepares the program team to engage with the technical design team |

What is the process for designing a programmatic use case?

When designing analytic tools, it's important to engage stakeholders in the process. Developing programmatic use cases can help ground the conversation with stakeholders, agency leadership, and data teams. When engaging stakeholders, it's important to create strategic goals for engagement, differentiate general learning versus requiring feedback, and create feedback opportunities that align to stakeholders' skills. (Maximizing Appropriate Involvement of ECIDS Community Members, Podcast/Blog, 2020) Here are the 6 steps used to design analytic tools:

1. Develop a list of state early childhood policy priorities
2. Validate with leadership and governance bodies
3. Align research agenda or list of questions to policy priorities
4. Create topic areas for potential programmatic use cases based on similar sets of questions or research priorities
5. Prioritize the topical areas to help focus the programmatic use case
6. Develop one or more programmatic use cases

Utah

"Well articulated use-cases, co-created and supported by contributing data sources along with early childhood policymakers and stakeholders are critical to the development, deployment, and utilization of a state's integrated data system. Tangible and comprehensive use-cases also inform the fundamental data elements that are needed to populate the state's integrated data system."

Stephen Matherly, Utah Department of Health.

In this next section, there are specific details provided to complete each component of the programmatic use case.



What does a programmatic use case include?

Based on what we have learned from working with states over the years, a programmatic use case includes two sections to differentiate the process, (1) information needs and (2) analytic design in Appendix A. For a full example please see Appendix B.

Section 1. Information Needs

These are the components that gather the information needs and refine the priorities. Gathering the information needs are the first steps that would need to happen early in the process and then transition to the next piece in Phase II (analytic design).

Topical Background information

The background information provides valuable state and/or national context for the programmatic use case. When writing the background, focus on why this topic is important to your state. Example topics may include developmental outcomes or school readiness.

State Priority/Goal

A clear and focused goal statement will help those developing a programmatic use case to align with state priorities and improve the relevance of the use case for the program or policy decision-makers.

Key programmatic or policy questions

States are often presented with multiple policy questions from policymakers, advocates, educators, and stakeholders at large. Part of the programmatic use case development process engages stakeholders to identify the key policy question(s) that address the identified need and to prioritize the policy question for each specific use case. Stakeholder engagement is used to determine the key policy questions that align to the state strategic plan and/or priorities.

Primary audience/user

A clearly defined user allows the programmatic use case to prioritize the information needs of a primary audience. The programmatic use case developer may also identify secondary and tertiary users or beneficiaries of the information.

Actions expected

The actions expected provide the decision to the audience/user for the next steps once the data is available and how they can use it. This communicates how the data will be used to improve programs. For example: To facilitate strong decision-making on professional development, collaboration strategies, and resource allocations.

Impact

The impact section should identify who will be impacted and action taken should answer, how will this action impact children and families?

It is important to identify the impact of the programmatic use case. Often a use case may pertain to more than one audience, and it is important to recognize that applicability. The use case identifies

the applicability to other users to demonstrate the impact. For example, this applies to local program administrators but also state-level policymakers.

The programmatic use case developer will be able to complete the following decision-making sentence after completing the information needs of the programmatic use case.

“I am a _____, who needs data/information about _____ to take action _____ because _____.”

For example, “I am a program administrator for family engagement services, who need data/information on gaps between delivered service and need, for my program and across similar services, which allows me to take action to coordinate outreach with programs that provide similar (family engagement) services to improve the process for referrals, identify gaps in my service, and build awareness of overlap with other programs, so I can ensure my program provides access to quality early learning and family engagement.”

Section 2. Analytic Design

These are the steps that need to be taken to help inform the design of the analytic tool.

Note: Information needs may be relevant across states, but the design often varies across states with the same information need due to different data system options.

Data elements required

Having a clearly defined set of data elements allows the technical design team to ensure the best available information is available to integrate. The programmatic use case includes the data elements required, what data sets or data systems are needed, definitions, and options set for the analytic tool to display the information. For additional support and best practices please check out the Common Education Data Standards.

Frequency

Identifying the frequency of the data being updated is important for the program area and technical design team. The program area will know when data collections open and close. The technical design team will need to know their level of effort in making changes or updating the reports. The programmatic use case identifies how often the data be refreshed. Determine if this is done annually, twice a year, quarterly, or another recurring period of time.

Common Education Data Standards include early care and education data. Check it out here: <https://ceds.ed.gov/>

Access level

It is important to identify the access level of the programmatic use case, so the technical design team knows which level to display and how they need to aggregate the information. This is also helpful to communicate to the audience/user, so they know which reports are more applicable to them. The use case identifies the access level to provide clarification as to whether the data will be

available at the state, regional, local education agency (LEA), county, zip code, school, or classroom level.

Functionality

Providing the functionality of the programmatic use case is a critical piece to convey the different components required for the data visualization. This will help when having conversations with the technical design team to determine what functionality needs to be offered. The use case provides functionality to include preferences for data visualization, such as filters, search functions, necessary links, graphs, and charts.

When completing the information for the programmatic use case, the team leading the use case development starts with the key policy question, goal, and background information. The other components do not have a specific order of completion.

How to use the programmatic use case?

The programmatic use case is used as a communication tool with stakeholders, agency leadership, and data governance bodies. States often create multiple use cases based on stakeholders' needs. States program staff may utilize the use case in policy memos to convey the information needed, to prioritize use cases with the governance body, and to share with stakeholders about the key components in the proposed analytic tool. Each group can use the programmatic use case, below are a few examples of how agency leadership, data governance bodies, and stakeholders can use the use case.

Agency Leadership

- Communicate the outcomes to executive leaders to align with state priorities
- Demonstrate the policy question aligns with the state's strategic plan and/or goals

Data Governance Bodies

- Identify the information needs for access and functionality early and the actions taken from
- Prepare the program team to engage with the technical design team
- Prioritize what data elements are needed across data systems

Stakeholders

- Communicate the identified information need and components of the programmatic use case

Arkansas

"Arkansas was able to utilize the use case and administrative data report to help inform strategic planning. It was extremely helpful to have during our planning processes for the COVID relief funding."

Rachel Machen, Arkansas Department of Human Services

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Appendix A. ECDataWorks Programmatic Use Case Template

SECTION 1. INFORMATION NEEDS

USE CASE TITLE

BACKGROUND

**STATE PRIORITY/
GOAL**

**KEY
PROGRAMMATIC
OR POLICY
QUESTION(S)**

**PRIMARY USERS/
AUDIENCE**

**ACTIONS
EXPECTED**

IMPACT

SECTION 2. ANALYTIC DESIGN

FUNCTIONALITY

ACCESS LEVEL

FREQUENCY

DATASETS

Appendix B. ECDataWorks Programmatic Use Case Example

SECTION 1. INFORMATION NEEDS

USE CASE TITLE School Readiness

BACKGROUND The state has four strategic priorities for early childhood, one of which ensures all children enter school ready to learn.

**STATE PRIORITY/
GOAL** Provide schools/programs and families with greater insight into the specific strengths and needs of the incoming kindergarten cohort and professional development supports.

KEY PROGRAMMATIC OR POLICY QUESTION(S)

- Are schools ready to meet the needs of incoming kindergarteners?
- Are children entering school ready?
- Are communities prepared to offer opportunities to support the readiness of early learning supports?

**PRIMARY USERS/
AUDIENCE**

- District early learning director
- K-3 district principals
- K-3 community partner providers

ACTIONS EXPECTED

- Determine appropriate professional development opportunities for educators/staff to meet the needs of the incoming kindergarten cohort
- Identify potential shared professional development opportunities between early care and education programs
- Identify targeted family/parent outreach strategies that support families at home

IMPACT

- State and community leaders are able to make decision around allocation and provisions of training
- District and community-based providers work together to provider shared professional development and training (avoiding duplication of effort)
- District leaders and practitioners are aligning their training and practice across systems
- Advocacy organizations are able to increase public support for systems serving children that promote successful school readiness and transitions for all children

"We are an elementary school principal and CBO administrator working together to understand the children entering school in order to coordinate professional development and ensure teachers and providers support the needs of all children."

SECTION 2. ANALYTIC DESIGN

- FUNCTIONALITY**
- Filter by state, region, district
 - Filter by data elements
 - Graphs, charts, maps

- ACCESS LEVEL**
- State
 - Region
 - District
 - School level

- FREQUENCY**
- Quarterly
 - Annually

- DATASETS**
- Program type (e.g., child care, Head Start, public/private PreK)
 - Child Attributes (e.g., race/ethnicity)
 - Program Curriculum
 - Family Supports
 - End of year prekindergarten data
 - Beginning of year kindergarten data (KEA)