

# education evaluation framework

version: v1.0

status: public design reference

purpose

define how learning outcomes are evaluated within sevnova education systems.

this document describes how the system determines whether a learner has developed understanding, rather than simply receiving information.

the framework evaluates reasoning development, comprehension, and the ability to apply ideas.

it does not define grading systems or academic credentials.

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## design principle

education systems should measure learning, not exposure.

reading information or receiving answers does not guarantee understanding.

the evaluation framework focuses on observable indicators that a learner has:

- understood the concept
  - connected it to related ideas
  - applied it in reasoning
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## **evaluation philosophy**

learning is evaluated through interaction patterns, not static quizzes.

the system looks for signs that the learner can:

- explain ideas in their own words
- apply concepts to new situations
- identify tradeoffs and consequences
- connect ideas across topics

evaluation focuses on thinking behavior, not memorization.

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## **core evaluation signals**

the system evaluates learning using several observable signals.

### **comprehension signals**

indicators that a learner understands a concept:

- correct restatement of an idea
- accurate explanation of cause and effect

- ability to answer follow-up questions

these signals show conceptual understanding rather than recall.

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## **reasoning signals**

indicators that a learner can think with the concept:

- comparing two ideas
- explaining why something happens
- identifying consequences or tradeoffs
- predicting outcomes in new scenarios

reasoning signals demonstrate deeper understanding.

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## **integration signals**

indicators that a learner connects ideas across domains:

- linking concepts from different lessons
- recognizing patterns between subjects
- identifying relationships between cause and effect systems

integration indicates structural learning rather than isolated knowledge.

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## **curiosity signals**

indicators that exploration is occurring naturally:

- asking deeper “why” or “how” questions
- requesting additional explanation layers
- exploring implications of ideas

curiosity indicates engagement and active learning.

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## **layered learning verification**

education systems use a layered explanation model.

verification occurs when a learner successfully navigates layers such as:

1. surface explanation
2. deeper mechanism
3. implications or consequences
4. connections to other ideas

progress through layers suggests increasing understanding.

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## **teach-back confirmation**

one of the strongest signals of learning is teach-back.

this occurs when a learner:

- explains a concept in their own words
- summarizes the idea accurately
- answers a related question using the concept

teach-back demonstrates internalization of knowledge.

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## **decision reasoning evaluation**

when learners ask questions involving choices or decisions, the system evaluates reasoning through:

- recognition of tradeoffs
- awareness of short-term and long-term consequences
- identification of opportunity costs

the goal is to strengthen structured thinking rather than provide decisions.

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## **completion indicators**

learning objectives may be considered complete when:

- the learner demonstrates comprehension signals
- reasoning signals appear consistently
- the concept can be applied in a new situation
- teach-back is successful

completion represents functional understanding, not memorization.

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## **limits of evaluation**

this framework evaluates interaction-based learning signals.

it does not replace:

- formal exams
- classroom assessment
- academic grading

it is designed to complement educational environments rather than replace them.

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## **design intent**

this evaluation framework promotes:

- understanding over memorization
- reasoning over recitation
- exploration over passive consumption

education systems should help learners think more clearly, not simply produce answers.

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end education evaluation framework v1.0

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