TEMPLATE

Learning Maturity Measurement Template

A practical, evidence-based template for defining, scoring, validating, and reviewing learning maturity in AI and machine learning workflows.

Learning Maturity Measurement Template

Use this template to assess whether an AI or machine learning system is ready for operational use based on evidence, reproducibility, controls, and measurable learning impact.

How to use this template

- Define the learning boundary.
- Gather evidence for each maturity dimension.
- Score each dimension from 0 to 3.
- Compare the total and weakest dimension to your operational threshold.
- Validate the score before using it in a production decision.

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1) Assessment details

System or workflow name: _____

Owner / reviewer: _____

Date: _____

Assessment type:

- [ ] Initial assessment
- [ ] Reassessment
- [ ] Post-change review
- [ ] Incident follow-up

Environment:

- [ ] Prototype
- [ ] Internal tool
- [ ] Staging
- [ ] Production

Learning objective: Describe the business or technical outcome being improved.

> _____ > >
_____

Scope boundary: Describe what is in scope, what is out of scope, and what inputs are allowed.

> _____ > >
_____

Blocked learning conditions: List situations where learning updates must not occur.

> _____ > >
_____

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2) Evidence inventory

Collect the artifacts that support the score.

Required artifacts

- [ ] Dataset lineage or source description
- [ ] Labeling rules or ground-truth definition
- [ ] Train/validation/test separation or equivalent control
- [ ] Data quality checks and exception handling
- [ ] Versioned code and configuration
- [ ] Run logs, seeds, and environment details
- [ ] Model or rule lineage from input to output
- [ ] Approval or promotion criteria
- [ ] Monitoring for drift, error rate, or feedback quality
- [ ] Rollback or disable procedure
- [ ] Access control for retraining and deployment
- [ ] Baseline or control comparison
- [ ] Decision record showing what changed because of the learning outcome
- [ ] Negative results or failed experiments, not only successes

Evidence location: Link, ticket number, repo path, or folder reference.

> _____

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3) Maturity scorecard

Score each dimension from 0 to 3.

Scoring scale

- 0 = absent or unknown
- 1 = ad hoc or partial
- 2 = defined and repeatable
- 3 = validated and consistently operated

A. Evidence quality

Check whether the inputs and outputs can be trusted.

What to verify:

- [ ] Dataset lineage is known
- [ ] Labeling or ground truth is defined
- [ ] Missing data is handled consistently
- [ ] Data quality checks exist
- [ ] Input/output artifacts are retained

Score: 0 / 1 / 2 / 3 Notes:

> _____ > >
_____

B. Reproducibility

Check whether the same learning process can be repeated and explained.

What to verify:

- [ ] Code is versioned
- [ ] Config is versioned
- [ ] Training settings are controlled
- [ ] Run logs and environment details exist
- [ ] A rerun procedure is documented

Score: 0 / 1 / 2 / 3 Notes:

> _____ > >
_____

C. Operational control

Check whether the learning process has guardrails.

What to verify:

- [ ] Approval or promotion criteria exist
- [ ] Monitoring is in place
- [ ] Rollback or disable is possible
- [ ] Access is restricted appropriately
- [ ] Experimental and production paths are separated

Score: 0 / 1 / 2 / 3 Notes:

> _____ > >

_____

D. Learning impact

Check whether the learning activity improves the target outcome.

What to verify:

- [ ] Before/after comparison exists
- [ ] Baseline or control is available where possible
- [ ] Improvement is measurable
- [ ] Negative results are recorded
- [ ] A decision record links learning to system change

Score: 0 / 1 / 2 / 3 Notes:

> _____ > >

_____

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4) Summary score

Evidence quality:

Reproducibility:

Operational control:

Learning impact:

Total score: / 12

Interpretation

- 0?4: immature, do not treat the learning process as reliable
- 5?8: developing, useful for controlled environments only
- 9?12: mature enough for operational use with routine review

Weakest dimension: _____

Primary limiting factor:

> _____ > >

_____

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5) Operational decision

Choose the current state based on the score and the weakest dimension.

- [ ] Not ready
- [ ] Controlled use only
- [ ] Operationally acceptable

Decision rationale:

> _____ > >

_____

Required follow-up actions:

- [ ] Improve data quality or labeling
- [ ] Version code, config, or environment
- [ ] Add approval or rollback controls
- [ ] Improve monitoring or review cadence

- [ ] Add a baseline or control comparison
- [ ] Clarify scope or learning boundary
- [ ] Reassess after changes

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6) Validation of the score

Before relying on the score, validate it.

Validation method used

- [ ] Repeat assessment with a second reviewer
- [ ] Re-score after a small process improvement
- [ ] Compare against an incident or change record

Validation result:

> _____ > >
_____

Reviewer comparison notes:

> _____ > >
_____

Expected score change after improvement:

> _____

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7) Review and sign-off

Reviewer name: _____

Reviewer role: _____

Review date: _____

Approved for current operational state?

- [ ] Yes
- [ ] No

Sign-off notes:

> _____ > >

_____

Quick guidance

Use this template when a system learns from data, feedback, experiments, or retraining and you need to decide whether that learning process is operationally trustworthy.

If any critical area is unknown, score it conservatively. A documented, repeatable process is more useful than an optimistic score.

Common warning signs

- The learning objective is vague
- Inputs are not versioned or traced
- The same assessment gives different scores across reviewers
- Monitoring exists, but rollback does not
- Success is claimed without a baseline or control
- Learning changes are made without a clear approval path

Suggested review cadence

- Reassess after any major data, model, or workflow change
- Reassess after an incident involving drift, false positives, or unsafe updates
- Reassess on a regular schedule for production systems

Final decision record

Final maturity classification: _____

Approved actions:

> _____ > >

_____

Next review date: _____