

UT Tyler Real-World Problem-Solving Rubric adapted from LEAP VALUE Problem Solving Rubric

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared nationally through a common dialog and understanding of student success.

Definition

Problem-solving is the process of designing, evaluating, and implementing a strategy to answer an open-ended question or achieve a desired goal.

Real-world includes authentic situations and needs that students could expect to experience/encounter outside the classroom after degree completion that are relevant and appropriate to their discipline.

Framing Language

Problem-solving covers a wide range of activities that may vary significantly across disciplines. This rubric distills the common elements of most problem-solving contexts and is designed to function across all disciplines. It is broad-based enough to allow for individual differences among learners yet is concise and descriptive in its scope to determine how well students have maximized their respective abilities to practice thinking through problems in order to reach solutions. This rubric is designed to measure the quality of a process, rather than the quality of an end-product within a real-life situation or scenario.

Glossary

The definitions that follow were developed to clarify terms and concepts used in this rubric only.

- Contextual Factors: Constraints (such as limits on cost), resources, attitudes (such as biases) and desired additional knowledge which affect how the problem can be best solved in the real world or simulated setting.
- “Off the shelf” solution: A simplistic option that is familiar from everyday experience but not tailored to the problem at hand (e.g. holding a bake sale to “save” an underfunded public library).
- Solution: An appropriate response to a challenge or a problem.
- Strategy: A plan of action or an approach designed to arrive at a solution. (If the problem is a river that needs to be crossed, there could be a construction-oriented, cooperative (build a bridge with your community) approach and a personally oriented, physical (swim across alone) approach. An approach that partially applies would be a personal, physical approach for someone who doesn’t know how to swim.
- Support: Specific rationale, evidence, etc., for solution or selection of solution.

UT Tyler Adaptation

UT Tyler adapted the Columbus State University (CSU) Problem Solving VALUE Rubric and the general Problem Solving VALUE Rubric by refining the elements which specifically focus on an assessment of the student’s skill in the problem-solving process versus the end-product, thereby reflecting the learning goals of DISCOVER, DESIGN, and DISCUSS. The revised instrument focuses on the problem-solving process to provide the evaluator the ability to measure the student’s skill in the **processes** of problem-solving ability.

UT Tyler Rubric for Real-World Problem-Solving

(Revised November 2021)

The problem-solving process includes the student's ability to identify/discover problems; design solutions; evaluate outcomes and discuss solutions; and demonstrate high levels of insight and awareness of what was learned and what could be improved. *Evaluators are encouraged to assign a "0" to any work sample that does not address the minimal level of performance.*

	Accomplished	Competent	Developing	Minimal
	4	3	2	1
SLO 1. Define Problem	Demonstrates the ability to construct a clear problem statement with evidence of relevant contextual factors as it relates to real-world scenarios.	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors as it relates to real-world scenarios.	Begins to demonstrate the ability to construct a problem statement with evidence of some relevant contextual factors as it relates to real-world scenarios.	Demonstrates a limited ability in identifying a problem statement and limited relation to real-world scenarios.
SLO 2. Identify Strategies	Identifies multiple possible strategies to the problem that apply within a specific real-world context.	Identifies multiple possible strategies to the problem, only some of which apply within a specific real-world context.	Identifies only a single strategy to the problem that applies within a specific real-world context.	Proposed strategy does not apply within a specific real-world context.
SLO 3. Evaluate Potential Solutions	Evaluates the proposed solution(s) with compelling support and/or evidence for why their selected solution was chosen over others.	Evaluates the proposed solution(s) with evidence and/or support but does not adequately support the merits of their selected solution against the other solutions.	Adequately evaluates the solution they selected with some evidence or support, but not the other possible solutions.	Does not adequately evaluate and/or support the solution they selected.
SLO 4. Propose Solutions	Proposes a solution that indicates a deep comprehension of the problem. Solution is sensitive to all of the real-world contextual factors included with the problem statement.	Proposes a solution that indicates comprehension of the problem. Solution is sensitive to some of the real-world contextual factors included with the problem statement.	Proposes a solution that is "off the shelf" rather than individually designed to address the specific real-world contextual factors of the problem.	Proposes a solution that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.
SLO 5. Implement (Potential) Solution	Implements the solution (or hypothesizes the implementation) in a manner that thoroughly and deeply addresses multiple real-world contextual factors of the problem.	Implements the solution (or hypothesizes the implementation) in a manner that addresses multiple real-world contextual factors of the problem in a surface manner.	Implements the solution (or hypothesizes the implementation) in a manner that addresses the problem statement but ignores real-world relevant contextual factors.	Implements the solution (or hypothesizes the implementation) in a manner that does not directly address the problem statement.
SLO 6. Evaluates (Potential) Outcomes	Reviews (proposed) results/outcomes relative to the problem with specific discussion further work and/or considerations within a real-world context.	Reviews (proposed) results/outcomes relative to the problem with some discussion of further work and/or considerations within a real-world context.	Reviews (proposed) results/outcomes in terms of the problem with little, if any, discussion of further work within a real-world context.	Reviews (proposed) results/outcomes superficially in terms of the problem with no discussion of further work.

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