

**Element J: Documentation of external evaluation**

This entry would be likely to receive a **score of 1**, based on the EDPPSR.

This project involved the design and testing of a system for the safe storage of Dry Erase materials. The entry provides some documentation of project evaluation by stakeholders, but who these representatives of stakeholders are, and more critically, how many were consulted, is not indicated. Those who conducted this project simply describe the data source as “casual feedback from users viewing the prototype” (which is misleading, since these respondents appear to be merely potential users rather than those individuals who have actually had a chance to try the prototype system). The stakeholder comments are quoted without any synthesis or elaboration. The comments themselves are overly general.

It should be noted that those conducting this design project indicated the intent to conduct a “full survey” of all those who had responded to an initial use and satisfaction survey (the results of which were reported in the entry that would now align with Element D). Even there, while the number of respondents is identified (9) and their feedback presented in a more detailed way in a selection matrix, needed detail is missing (e.g., who the respondents were, what makes them representative of stakeholders, how they were selected).

When surveys are conducted as part of an engineering design project, it is good practice to include all survey instruments among the artifacts that comprise the related entry. A brief narrative detailing the survey distribution and collection process may also be useful to others who review the portfolio contents.

**Engineering Design Process Portfolio Scoring Rubric  
Component and Element Titles**

**Component I: Presenting and Justifying a Problem and Solution Requirements**

- Element A: Presentation and justification of the problem
- Element B: Documentation and analysis of prior solution attempts
- Element C: Presentation and justification of solution design requirements

**Component II: Generating and Defending an Original Solution**

- Element D: Design concept generation, analysis, and selection
- Element E: Application of STEM principles and practices
- Element F: Consideration of design viability

**Component III: Constructing and Testing a Prototype**

- Element G: Construction of a testable prototype
- Element H: Prototype testing and data collection plan
- **Element I: Testing, data collection and analysis**

**Component IV: Evaluation, Reflection, and Recommendations**

- **Element J: Documentation of external evaluation**
- *Element K: Reflection on the design project*
- Element L: Presentation of designer’s recommendations

**Component V: Documenting and Presenting the Project**

- Element M: Presentation of the project portfolio
- Element N: Writing like an Engineer

**Please Note: Elements M and N require no submission from the portfolio author(s) and are intended to be scored based on the portfolio work as a whole from what has been submitted from Elements A through L**

## Element J: Documentation of external evaluation

- 5** Documentation of project evaluation by multiple, demonstrably qualified stakeholders and field experts is presented and is synthesized in a consistently specific, detailed, and thorough way; documentation is sufficient in two or more categories to yield meaningful analysis of that evaluation data; the synthesis of evaluations consistently addresses evaluators' specific questions, concerns, and opinions related to design requirements.
- 4** Documentation of project evaluation by two or more demonstrably qualified stakeholders and field experts is presented and is synthesized in a generally specific, detailed, and thorough way; documentation is sufficient in at least one category to yield a meaningful analysis of that evaluation data; the synthesis of evaluations generally addresses evaluators' specific questions, concerns, and opinions related to design requirements.
- 3** Documentation of project evaluation by three or four demonstrably qualified stakeholders and/or field experts is presented and is synthesized in a somewhat specific and detailed way, but may not be thorough; documentation may not be sufficient in any category to yield a meaningful analysis of that evaluation data; the synthesis of evaluations addresses at least some of evaluators' specific questions, concerns, and opinions related to design requirements.
- 2** Documentation of project evaluation by two or three representatives of stakeholders and/or field experts (some of whom may not be demonstrably qualified) is presented and is synthesized in a somewhat specific and/or detailed but incomplete or overly general way; the synthesis of evaluations addresses at least a few of evaluators' specific questions, concerns, and/or opinions related to design requirements.
- 1** Documentation of project evaluation by one or two representatives of stakeholders and/or field experts is presented but synthesis is sparse, with few specifics/details; the synthesis of evaluations addresses only one or two of an evaluator's questions, concerns, and/or opinions related to design requirements.
- 0** Documentation of project evaluation by any representative stakeholder or field expert is nonexistent OR if included is minimal; synthesis is minimal or missing and if present, does not address any questions, concerns, or opinions of an evaluator related to design requirements.
- .....

Excerpt from the "Reflective Questions for Students" Document regarding Element F from the Innovation Portal Resources files;

- **What do end-users and experts directly related to this project and problem statement think of the testing results and my/our conclusions about the effectiveness of this idea?**

### Documentation of end user and stakeholder evaluation (external evaluation)

Casual feedback from users viewing the prototype has been positive. If time allows, a full survey will be performed on all participants that answered the initial use and satisfaction survey.

#### Stakeholder Feedback – Teacher Survey

- Product meets storage requirements
  - Average 4.3 / 5
  - 91.7% favorable (Greater than 3 out of 5)
- Will use product instead of the tray
  - Average 4.1 / 5
  - 83.3% favorable
- Recommend this product
  - Average 4.3 / 5
  - 91.7% favorable
- Satisfied with product's physical attributes
  - Average 4.2 / 5
  - 83.3% favorable

#### Stakeholder Feedback – Comments

- “I really like the cleaning function of the holder.”
- “Wouldn't use much due to inconvenience of walking back and forth to storage. My board covers the whole wall.”
- “Needs more space for additional markers.”