

Helping Faculty Use and Provide More Data about Project-Based Teaching and Learning - WPI Examples for inclusion in teaching portfolios and consideration in promotion and tenure

Student Reports on MQP and IQP Learning and Advising (see attached)

These two survey instruments are approved by the WPI faculty and are automatically deployed to all students when they complete their degree-required, 9-credit Interactive Qualifying Project (IQP, interdisciplinary general education project typically in the third year) and Major Qualifying Project (MQP, capstone project typically in the fourth year). The “experience” section of the survey asks learners to rate their progress on the faculty-approved IQP and MQP learning outcomes. The “advising” section invites them to rate the effectiveness of their project advisor in multiple areas known to be important. There are some open-response questions as well. Many faculty use these data for self-improvement as project advisors and may include them as evidence of high quality teaching in their teaching portfolio.

Student Course Reports – Supplemental Questions for the Great Problems Seminars

WPI uses a fairly traditional in-house course evaluation instrument that we call “Student Course Reports.” The faculty who teach the project-based Great Problems Seminars (GPS) in the first year all agreed to use a set of supplemental questions aligned with the GPS learning outcomes. These data aid improvement of the GPS program and add richness to faculty teaching portfolios.

“Because of participation in this GPS class I feel I am better able to...” (1= not at all -- 3= some - 5= very much)

1. **TEAM WORK:** Collaborate effectively on a team
2. **RESEARCH:** Find varied, credible sources, assess their claims and relevance, and use them appropriately
3. **WRITING:** Produce clear, effective, evidence-based writing
4. **PRESENTING:** Prepare and confidently deliver engaging and effective presentations
5. **APPROACH TO PROBLEMS:** When working on complex, open-ended problems, be able to identify answerable questions, and select and evaluate appropriate solutions through the application of multiple perspectives.
6. **CULTURAL AWARENESS:** Understand and articulate the differences in experiences of the “great problem” for different people.
7. **VALUES:** Describe your values and those of others as they relate to addressing the great problem.

Student Assessment of Their Learning Gains (SALG): <https://salgsite.net/>

This is a free validated instrument developed under an NSF award, used by a number of faculty at WPI seeking to better understand student learning in their courses and the influence of particular interventions like projects. It can be tailored for individual use and may probe for gains in understanding, skill development, changes in attitudes, integrative learning, and the effectiveness of various resources, supports, and course elements.

Additional Ways that Engagement in Project Advising Is Made Visible

- Section on Project Advising in WPI-format CV for tenure and promotion and in Faculty Annual Report
- University-wide tenure committee reviews a random selection of project reports advised by each tenure candidate

Advisors can access their own data at <http://web.wpi.edu/Pubs/E-project/>


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E-project IQP Advisor Evaluations

Advisor **All Advisors** **2017-18**

In the following table, 1 would represent an evaluation of *Very poor*, 3 for *Average*, and 5 for *Excellent*.

Question	Evaluation		
	Average	Count	Std.Dev.
The advisor's personal interest in helping students learn	4.30	1687	0.97
The advisor's treatment and respect for students	4.16	1682	1.14
The advisor's helpfulness in fostering good professional habits	4.07	1683	1.09
The advisor's encouragement of creativity in meeting project goals and needs	4.12	1680	1.03
The advisor's facilitation of team functioning (if applicable)	3.83	1594	1.10
The advisor's ability to challenge me in a constructive manner	3.95	1676	1.09
The advisor's creation of an atmosphere of trust	4.00	1678	1.18
The advisor's articulation of expectations and grading criteria	3.66	1682	1.28
The advisor's feedback on my work	3.92	1680	1.18
The advisor's timeliness in responding to my work	4.12	1680	1.08
Overall, I rate the advisor's effectiveness as	4.04	1679	1.13
Off campus questions			
I felt I could go to the advisor for advice on nonacademic issues	4.01	1676	1.12
The advisor encouraged me to participate in cultural activities	3.70	1392	1.31
The advisor provided useful information concerning local customs	4.09	1373	1.02
The advisor was easily accessible when needed	4.09	1370	1.00
The advisor kept me aware of on site health issues as appropriate	4.14	1380	0.99
The advisor made me aware of on site safety issues in a timely way	3.98	1371	1.05
The advisor's expectations were consistent from preparation to project conclusion	3.89	1385	1.21

1709 students

[Back to evaluations page](#)

[Back to E-project page](#)

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E-project IQP Summary Experience Evaluations

Advisor **All advisors** 2017-18

In the following table, 1 would represent an evaluation of *Very poor*, 3 for *Average*, and 5 for *Excellent*.

For grade, 4.0 is *A*, 3.0 is *B*, and 2.0 is *C*.

Question	Evaluation		
	Average	Count	StdDev
Learning how to set and meet goals for research and projects	4.47	1678	0.66
Learning how to find and use information resources	4.32	1676	0.70
Learning to analyze and critically evaluate ideas and information	4.40	1677	0.71
Developing skill in expressing oneself in writing	4.28	1675	0.76
Developing skill in expressing oneself orally	4.27	1672	0.79
Acquiring skill in working with others as a member of a team (if applicable)	4.46	1663	0.72
Overall, my level of effort on this project was	4.45	1668	1.03
Overall, I rate my learning from this project as	4.18	1664	0.83
The intellectual challenge presented by the project was	4.39	1664	0.85
The project's overall value as an educational experience was	4.75	1643	0.53
In the final term, I worked on average the following number of hours per week on the project	39.37	1473	15.19
What grade do you expect to receive on this project?	3.90	1643	0.32

1709 students

[Back to evaluations page](#)

[Back to E-project page](#)

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E-project MQP Advisor Evaluations

Advisor **All Advisors** **2017-18**

In the following table, 1 would represent an evaluation of *Very poor*, 3 for *Average*, and 5 for *Excellent*.

Question	Evaluation		
	Average	Count	Std.Dev.
The advisor's personal interest in helping students learn	4.45	1397	0.86
The advisor's treatment of and respect for students	4.53	1392	0.87
The advisor's helpfulness in fostering good professional habits	4.37	1392	0.92
The advisor's encouragement of creativity in meeting project goals and needs	4.38	1393	0.91
The advisor's facilitation of team functioning (if applicable)	4.15	1307	1.06
The advisor's ability to challenge me in a constructive manner	4.29	1386	0.96
The advisor's creation of an atmosphere of trust	4.40	1390	0.98
The advisor's articulation of expectations and grading criteria	4.12	1389	1.10
The advisor's feedback on my work	4.08	1389	1.11
The advisor's availability when needed	4.15	1389	1.09
The advisor's timeliness in responding to my work	4.11	1392	1.15
Overall, I rate the advisor's effectiveness as	4.33	1390	0.94

1456 students

[Back to evaluations page](#)

[Back to E-project page](#)

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E-project MQP Summary Experience Evaluations

Advisor **All advisors** **2017-18**

In the following table, 1 would represent an evaluation of *Very poor*, 3 for *Average*, and 5 for *Excellent*.

For grade, 4.0 is *A*, 3.0 is *B*, and 2.0 is *C*.

Question	Evaluation		
	Average	Count	StdDev
Applying fundamental and disciplinary concepts and methods specific to my major	4.42	1446	0.72
Demonstrating skill and knowledge of current technological tools and techniques relevant to my major	4.44	1444	0.74
Developing skill in written communication	4.22	1441	0.85
Developing skill in oral expression and public speaking	4.07	1442	1.00
Developing skill in visual communication (i.e., use of images and graphics to convey information, data, and ideas)	4.29	1439	0.84
Identifying, analyzing, and solving problems creatively through sustained critical investigation	4.49	1443	0.72
Finding, critically evaluating, and integrating information and ideas from multiple sources.	4.39	1437	1.13
Understanding and applying ethical standards in my field (for example, human and animal rights in research, respect for intellectual property, social and environmental responsibility, honest reporting of data, sensitivity to conflict of interest)	3.90	1434	1.13
Taking responsibility for my own learning and project direction	4.58	1435	0.67
My progress in working with others as a member of a team was Leave blank if not applicable.	4.36	1438	0.81
The intellectual challenge presented by the project was	4.43	1443	0.75
The preparation for the MQP experience provided by courses in my major was	3.91	1445	0.98
The preparation for the MQP experience provided by earlier WPI project experiences was	4.05	1438	0.99
The project's overall value as an educational experience was	4.46	1436	0.77

Overall, my level of effort on this project was	4.63	1440	0.64
Overall, I rate my learning from this project as	4.48	1421	0.74
On average, how many hours per week did you spend on this project	21.85	1330	12.73
Was this project connected with an external organization or sponsor that you met with during the project	557 Yes 899 No		
What grade do you expect to receive on this project?	3.82	1407	3.88

1456 students

[Back to evaluations page](#)

[Back to E-project page](#)