

Information Use in Projects: Motivating Students to Go Beyond Google

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Workshop Warm-Up Activity

Do you currently collaborate with your librarians?

If yes, in what ways? (check all that apply)

If no, why not? (check all that apply)

<input type="checkbox"/> I request that the library order materials that my students can use in class.	<input type="checkbox"/> I never thought of it
<input type="checkbox"/> I put materials on reserve.	<input type="checkbox"/> I not familiar with what my librarians offer for course/curricular support.
<input type="checkbox"/> My librarian is integrated into my Learning Management Course site so that he/she can communicate with students or upload materials.	<input type="checkbox"/> I get behind with my class planning and then it's too late to ask for support.
<input type="checkbox"/> My librarian does in-class lectures/workshops to engage my students in the information seeking process.	<input type="checkbox"/> I don't have time in my course schedule.
<input type="checkbox"/> I work with my librarian to design assignments.	<input type="checkbox"/> I've had a negative experience with librarians in the past.
<input type="checkbox"/> My librarian grades student assignments.	<input type="checkbox"/> I do not have my students use materials beyond required course readings.
<input type="checkbox"/> My librarian has provided me with language to add to my syllabus (e.g. how to contact a librarian, how to cite sources, etc).	<input type="checkbox"/> Other
<input type="checkbox"/> Other:	



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Information Literacy Related Outcomes Example from WPI's Interactive Qualifying Project

The IQP is a general education requirement, not directly related to students' majors. WPI Faculty created the IQP to help students learn to solve real-world problems and make decisions with an understanding of and appreciation for the social and humanistic contexts of their work. The IQP also is central to how WPI students learn to do research, write, and work in teams. According to the faculty-approved learning outcomes, IQP students will:

1. Demonstrate an understanding of the project's technical, social and humanistic context. (1, 7, 8)
2. Define clear, achievable goals and objectives for the project. (6)
3. Critically identify, utilize, and properly cite information sources, and integrate information from multiple sources to identify appropriate approaches to addressing the project goals. (7, 10)
4. Select and implement a sound approach to solving an interdisciplinary problem. (7, 10)
5. Analyze and synthesize results from social, ethical, humanistic, technical or other perspectives, as appropriate. (8, 9)
6. Maintain effective working relationships within the project team and with the project advisor(s), recognizing and resolving problems that may arise. (5)
7. Demonstrate the ability to write clearly, critically and persuasively. (4)
8. Demonstrate strong oral communication skills, using appropriate, effective visual aids. (4)
9. Demonstrate an awareness of the ethical dimensions of their project work. (9)

Approved by the WPI Faculty in October 2006.

The IQP is an opportunity for significant intellectual and professional development that, done well, prepares WPI graduates broadly for successful and satisfying lives and careers.

The numbers in parentheses denote corresponding [WPI curriculum-wide undergraduate outcomes](#) adopted by the faculty on May 20, 2004.

Red = IL-related outcomes. Color added by author.



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IQP Research Skills: Library Assignment

During the first few weeks of term your team's job is to begin research for your literature review and background chapter. Finding information for IQP is tricky, even for the most experienced searchers. The following assignment will help to kick start your research. Your library assignment is to be completed and handed in to your personal librarian, during your team's research appointment.

Prior to that appointment with your librarian please complete the following:

1. Complete the IQP Research Skills Survey found in your ID2050 course site
2. Review the IQP online research guide and note any questions you have: <http://libguides.wpi.edu/iqpresearch>
3. Determine how your team will be organizing all of the information for your IQP. For example, will you be using Endnote or will you be gathering links and citations in a Google Doc?
4. Compile an APA formatted list of your team's top eight sources of information that you've found so far. Each member of the team should find her or his own sources. The whole team should then review all sources found, in order to determine the team's top eight.
5. Schedule a team appointment with your librarian to discuss all of the above. Use this appointment request form: wpi.edu/+library/help/request-consultation.html

About the Research Appointment

Appointments are typically 30-50 minutes based on the team's needs. All members of the team should be present. The purpose of the research appointment is for your team to:

- Ask any questions you have so far.
- Solidify your plan for organizing and citing sources for your IQP.
- Discuss your eight sources with your site librarian. Explain how and why you chose those sources and how they will fit into your background chapter and literature review.
- Work with your librarian and your team to determine next steps for finding more resources.

Please bring the following with you:

- Your team's plan for organizing and citing your sources. (e.g. Will you be using Endnote, Google Docs, etc.)
- APA formatted list of your team's top eight (8) sources. These sources may fall into any of the following categories:
 - Peer-reviewed scholarly journal articles
 - Government reports and websites
 - News articles
 - Books
 - Organization/NGO/Association reports and websites
 - Any other type of source that you can justify as being important – just be sure you can defend it!

Example Assignment developed through a Faculty and Librarian Collaboration:



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ME 2300 Introduction to Engineering Design, D16 Information-Rich Engineering Design (I-RED)* Lab

Using the resources and instruction from this lab, **complete the following tasks and submit a written research report at the start of Lab 3, the first design review.**

Use a cover memo with *subject* line “Research Report”. Include your name and your project team name in the “*from*” field. The **body of the memo** should describe what types of questions you are trying to answer in order to come up with excellent design specs.

During this lab you will be introduced to reasons for and best practices in information seeking for an engineering design project. The better you understand the problem you are trying to address the more useful and more marketable your design will be. Following your memo, please turn in the following:

Find the ten types of sources described below and include the following for each source:

- A complete and accurate APA citation.
- A brief paragraph including the following:
 - Where did you search (e.g. Summon, Google, Google Scholar, Engineering Village, IBISworld, etc.), and why did you search there as opposed to somewhere else?
 - What keywords worked? Did any not work?
 - What did you learn from searching for this source that will help you in future research? What tips would you want your teammates to know about?

Types of sources required:

1. 1 encyclopedic article from How Stuff Works, How Things Work, About.com, etc.
2. 1 product
3. 1 technical handbook
4. 1 marketing report using IBISworld
5. 1 magazine or newspaper article that provides insight into the market for your product
6. 1 article from a trade magazine/journal
7. 1 peer-reviewed technical research article
8. 1 peer-reviewed article looking at the social or human element of your design.
9. 1 standard or regulation
10. 1 utility patent that are **relevant** and **useful** for your project and cite these patents. Include the patent title, abstract and a figure that shows the device in your report.

Coordinate with the rest of the team to insure that your reports do not overlap

All team members should identify **different** devices, **different** patents, **different** literature sources and **different** products or components.

Divide up the key words amongst the team members. Then get together and compare notes before submitting your *individual* reports.

*I-RED is based on the following: Fosmire, Michael, and David Radcliffe, eds. Integrating Information Into the Engineering Design Process. Purdue University Press, 2013.

Transdisciplinary Understanding of a Project: A Worksheet



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Your project team will be designing a playground for a neighborhood in Worcester

1. What is one question you need to consider?
2. Where might you find the answer? Who cares about the answer: the public, politicians, educators, scientists?
3. What databases or tools might you use to search for information?
4. What keywords and search techniques might you use?
5. What do you do if you can't find the full text?
6. How will you document what you found?

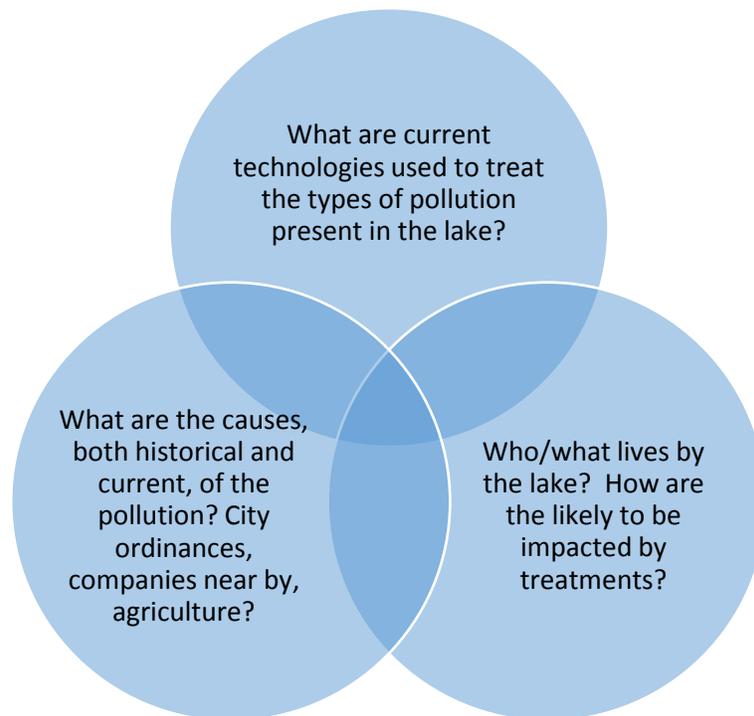
Transdisciplinary Understanding of a Project: A Venn Diagram Activity

When considering projects student and student teams must consider questions that may initially seem unrelated or at best tertiary to the project at hand. Using a Venn diagram proves helpful in describing how lateral thinking and information seeking is crucial to a better understanding of a problem, thereby leading to a more successful project result.



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Consider this example: Your students want to clean a polluted pond in their town. Their project solution is at the junction of these three questions that may initially appear to them to be “out of scope” when considered individually. Addressing the three questions individually and synthesizing the results will lead them to a solution that is appropriate for the exact problem that they are attempting to tackle.



Have your students create their own Venn Diagram and have them discuss how they might tackle each question individually.

Next Steps for you

What are the next steps you will take at your institution in order to nurture information-rich project teams?

References and Further Reading

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