



Assessment of Information Literacy Instruction Mapped to a STEM Degree Curriculum

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Learning Outcomes

1. Describe the importance of curricular mapping of information literacy
2. Develop a basic understanding of how information literacy can be mapped to curricula
3. Analyze a variety of methods used to assess information literacy learning outcomes mapped to a degree program



Information Literacy

The ability to locate, evaluate, and use information effectively

A foundational component in

- problem solving
- effective decision making
- self-directed lifelong learning



Information Literacy in one Science Discipline

Chemistry

American Chemical Society Chemical Information Skills,
for Undergraduate Professional Education in Chemistry



American Chemical Society Chemical Information Skills for Undergraduates

1. Complete a comprehensive subject search.
2. Compile a complete bibliography of an author's publications.
3. Efficiently locate chemical and physical properties of substances, including spectra.
4. Efficiently locate references for the detection, characterization, or reactions, including syntheses, of desired compounds or classes of compounds.
5. ... And many more!!!



Curricular Mapping of Information Literacy

Integrating Information Literacy (IL) instruction at key points in a degree program



Curricular Mapping of Information Literacy for Chemistry UG Degree Program

Collaboration is key

Librarian

Key teaching faculty

Faculty involved in curriculum planning

And others!



Example - Key Courses Identified for IL instruction - Chemistry, Bachelor of Science

SCI-I 120 Windows on Science (First Year Seminar)

Intro to science and strategies for success as science major

CHEM-C 294 Intro to Cornerstone in Chemistry

Covers intro to science communication

CHEM-C 344 Organic Chemistry Laboratory

Chemical information in the lab setting

CHEM 494 Capstone in Chemistry

Independent research projects



Example - Key Courses Identified for IL instruction - Chemistry, Bachelor of Science

SCI-I 120 Windows on Science (First Year Seminar) 1 class session

Intro to science and strategies for success as science major

CHEM-C 294 Intro to Cornerstone in Chemistry 2 class sessions

Covers intro to science communication

CHEM-C 344 Organic Chemistry Laboratory 2 class sessions

Chemical information in the lab setting

CHEM 494 Capstone in Chemistry individual research consults

Independent research projects



Developed Curricular plan

Used template created by Steven Hoover (Syracuse), Jennifer Fabbi, Anne Zald, Erin Rinto (UNLV)

Outlined the following for each course

- Learning outcomes – based on the long list of IL skills from American Chem. Soc.
- Assessments
- Teaching strategies



Developed Curricular plan

Used template created by Steven Hoover (Syracuse), Jennifer Fabbi, Anne Zald, Erin Rinto (UNLV)

Outlined the following for each course

- Learning outcomes – based on the long list of IL skills from American Chem. Soc.
- Assessments
- Teaching strategies

Template helped to develop alignment among all three



Assessments

Again - a collaborative effort

Librarian

Faculty of record for each course



Assessments

Mixed Assessments

Pre/Post Tests

Classroom Assessment Techniques

Assignments tied to regular coursework

Lab research projects

Research paper

Questions on Final Exam



Assessments example 1

CHEM-C 294 Intro to Cornerstone in Chemistry

Ungraded quiz on search logic

Pre-class discussion/reflection

(“What science information skills have you already developed? List some Examples.
What questions do you have coming into this session about using the library?
What questions do you have coming into this session about scientific information?”

Assignments tied to regular coursework

Pre-search assignment

Database search assignment



Assessments example 2

CHEM-C 344 Organic Chemistry Laboratory

Two assignments tied to semester's lab work

Think pair share

Reflection

Questions on final exam



For full curricular plan for Chemistry

Learning outcomes, Assessments, and Teaching strategies

Snajdr, E. *Curricular Library Educational Services Plan for Undergraduates in Chemistry*. 2020.

<https://scholarworks.iupui.edu/handle/1805/23177>



Final Note

Librarians – hope you have gained ideas on assessments and additional ways to integrate your instruction into the curriculum

Higher Ed instructors – hope you will consider partnering with your librarian in enhancing information literacy into your curriculum as it is an important aspect in developing your students' ability to be effective scientists, problem solvers, and life long learners.



References

American Library Association, *Evaluating Information: Information Literacy*.
<https://libguides.ala.org/InformationEvaluation/Infolit> (accessed October 22, 2020).

Committee on Professional Training, *Undergraduate Professional Education in Chemistry. ACS Guidelines and Evaluation Procedures for Bachelor's Degree Programs*; American Chemical Society: Washington, DC, 2015.

Snajdr, E. *Science Information Literacy Instruction across the Undergraduate Curriculum*. The 5th Annual True North Science Bootcamp 2019. Ottawa, Canada. May 31, 2019. <http://hdl.handle.net/1805/21398>

Snajdr, E. *Curricular Library Educational Services Plan for Undergraduates in Chemistry*. 2020.
<https://scholarworks.iupui.edu/handle/1805/23177>

Curricular Library Educational Services Plan Framework was adapted from “Meet Us On the Corner of Intentional and Strategic” workshop presented at ACRL April 12, 2013 by Steven Hoover (Syracuse), Jennifer Fabbi, Anne Zald, Erin Rinto (UNLV)



Thank you!

Questions?

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