



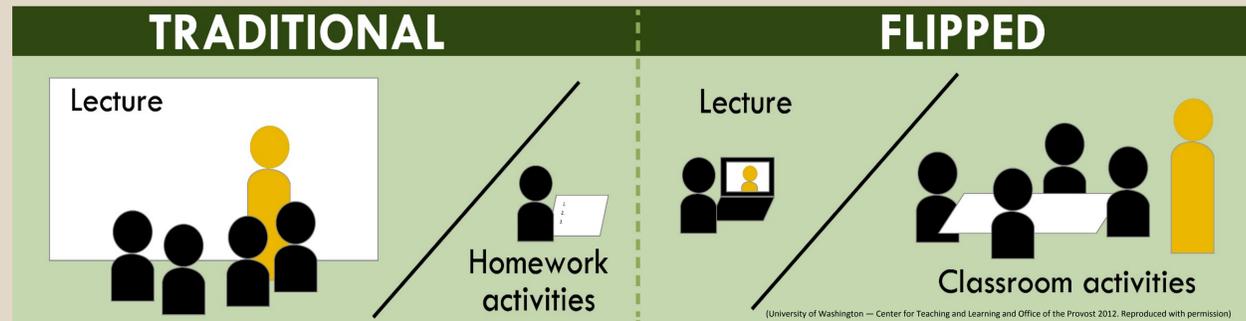
Traditional instruction reformed with flipped classroom techniques

Jennifer Lee, Susan Beatty, Patrick Feng, Nadine Hoffman, Brenda McDermott

Flipped classroom techniques | Multiple sessions | First-year interdisciplinary course

The traditional vs. the flipped classroom

- The flipped classroom moves away from a traditional lecture-then-homework model.
- Pre-class:** students prepare by watching short content-based videos or doing readings. Assessment may also be included.
- In-class:** content and learning is reinforced with in-class activities assessment results can be used to inform in-class work
- Students:** held responsible for learning increased attendance, engagement
- Instructors:** less traditional lecturing, more facilitation



The course: Science, Technology, & Society 201

- Inquiry-based learning
- Semi-flipped: only library and writing sessions used flipped techniques
- ~50 students
- Incorporated library and writing sessions in course design 4 sessions, each a week apart, alternating with instructor lectures First Writing Centre-Library collaboration *within* a course
- Assessment: 25% of final grade 10% Pre-class quizzes 15% Summative assessment (in-class)

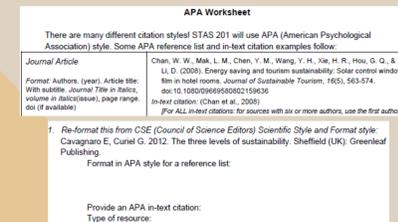
Library & writing learning goals

1: Plagiarism, Citations, and Citation Searching

- Read a citation and identify its major components
- Identify the type of resource from a citation
- Cite a resource



- Customized, interactive video on quotations and citations
- Created by the Student Success Centre
- Created with Articulate software



Convert references from various styles into APA

2: Research Process and Accessing Information

- Choose, and search a database by combining search terms
- Use database features: full-text links, emailing references
- Use databases to generate synonyms and other terms

- Search exercise/tutorial of the library homepage

- Refine search terms – search a database, then use results to discover new terms
- Compare database content and search features

3: Source evaluation

- Distinguish between scholarly, reliable, and popular sources

- The CRAPpy Song (aka, the C.R.A.P. Test Song) (<https://youtu.be/CMaIgec2XWY>)
- Popular vs. scholarly sources video (James Madison University) (<http://www.lib.jmu.edu/resources/connect.aspx?id=3247>)

The examples below identify different resources by type. Use the examples to help you fill out the table on the reverse side of this page.

Citation information (no APA format necessary; follow examples)	Scholarly	Reliable Website or Report	Popular	Why is it scholarly, reliable or popular?
Renewable energy resources. <i>Renewable & Sustainable Energy Reviews</i>	x			journal
<i>Alberta First Nations Consultation & Accommodation Handbook</i> . CERL	x			university research institute
Oil sands and heavy oil. <i>Encyclopedia of Energy</i>	x			encyclopedia article

Are sources found scholarly, reliable, or popular?

4: Writing/Annotated Bibliography

- Read and summarize a source and assess it in relation to your research

- Video by the Student Success Centre: reading for abstractions, annotating, and paraphrasing

- Practice annotating and paraphrasing a student-supplied paper

Reflections and Findings

- Students benefit:** instruction is linked to the skills needed for assignments
- Time-intensive:** course goals, sequencing, content prep, grading
- Decreased workload:** resource sharing for overlapping areas: citation and plagiarism
- Tip:** ensure *detailed written* instructions (step-by-step is not too much)

What did students think about the flipped classroom? *	Agree (n=33)
Pre-tests were helpful in preparing for the research skills sessions	79%
In-class exercises were helpful to reinforce the content of the research skills sessions	70%

Instruction increased students' confidence * Since attending, how confident are you in your...	Agree (n=33)
ability to use library resources to find information for a research project	94%
ability to find appropriate scholarly sources	94%
ability to evaluate resources	91%
ability to properly cite sources	82%
ability to paraphrase sources while avoiding plagiarism	82%
ability to write an annotated bibliography	79%

Instruction increased likelihood of future behaviors * Since attending, I am likely to...	Agree (n=33)
apply the strategies for summarizing to my future assignments	94%
use library databases in my research	91%
annotate sources while reading	67%

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 * Ethics approval granted for survey and publication

Selected references

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