2015-06

Traditional instruction reformed with flipped classroom techniques

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

http://hdl.handle.net/1880/50494
Other

http://creativecommons.org/licenses/by-nc-nd/4.0/
Attribution Non-Commercial No Derivatives 4.0 International

Downloaded from PRISM: https://prism.ucalgary.ca
Traditional instruction reformed with flipped classroom techniques
Jennifer Lee, Susan Beatty, Patrick Feng, Nadine Hoffman, Brenda McDermott

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

<table>
<thead>
<tr>
<th>TRADITIONAL</th>
<th>FLIPPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Lecture</td>
</tr>
<tr>
<td>Homework activities</td>
<td>Classroom activities</td>
</tr>
</tbody>
</table>

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

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

3: Source evaluation
- Distinguish between scholarly, reliable, and popular sources
- The CRAPsY Song (aka, the C.R.A.P. Test Song) (https://youtu.be/CRAPsY)
- Popular vs. scholarly sources video (James Madison University) (http://www.lib.jmu.edu/resources/connect.aspx?id=3247)

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

Pre-class activity and quiz

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

In-class activity

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

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?

- Instruction increased students’ confidence: agree (n=33)
  - Assessing future behaviors
- Instruction increased likelihood of future behaviors: agree (n=33)
  - Apply the strategies for summarizing to my future assignments
- 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%
- Time-intensive: resource sharing for overlapping areas: citation and plagiarism
- Decreased workload: 70%

The course: Science, Technology, & Society 201
- Inquiry-based learning
- 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)

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%

Selected references

Contact information (all from University of Calgary):
Jennifer Lee, Librarian for Chemistry, Computer Science, Environmental Design, Libraries and Cultural Resources, jlee@ucalgary.ca
Susan Beatty, Supervisor, Student Accessibility Services Exam Centre (formerly Coordinator, Writing Support Services), sbeatty@ucalgary.ca
Patrick Feng, Assistant Professor, Faculty of Arts, pfeng@ucalgary.ca
Nadine Hoffman, Natural Resources, Energy & Environmental Law Librarian, Libraries and Cultural Resources, nadine.hoffman@ucalgary.ca
Brenda McDermott, Supervisor, Student Accessibility Services Exam Centre (formerly Coordinator, Writing Support Services), bemcderm@ucalgary.ca

Selected references