Flipping the Engineering Library Instruction Session

August 17, 2018

MIX Conference

Mott Community College

WESTERN MICHIGAN UNIVERSITY

Why am I giving this talk?

"Bueller...
Bueller ...
Anyone?"

Source: Hughes, J. (1986). *Ferris Bueller's Day Off*. Retrieved from
http://www.hillsdalenjumc.org/public-theology/2015/1/22/bueller-bueller-anyone

College of Engineering and Applied Sciences (CEAS)

➡ 3000 students

➡ Programs in:

  ➡ Chemical, Civil, Electrical and Computer, Industrial and Entrepreneurial, Manufacturing, Mechanical and Aeronautical, and Paper Engineering.

  ➡ Computer Science

IEE1020 – Technical Communications

- Required freshman writing course for all incoming CEAS students
- **Fall 2017** – 16 sessions
- **Spring 2018** – 11 sessions
- **Culminating assignment:**
  - 12-14 page research paper

Keyword brainstorming

Using Knovel eBooks

Using Engineering Village

Accessing full text

Flipped Classroom?

- Socratic method
- "Guide on the Side" (King 1993)
- Peer instruction (Mazur 1997)
- "Classroom Flip" (Baker 2000)
- Definition (Abeysekera & Dawson 2015)

Transitioning to a flipped classroom

- Talked to the coordinator Tom Swartz.
- Created videos in Jing and Adobe Captivate.
- Posted these to my course guide.
- Created a pre-assignment using Google Forms.

Yes!
Live!

Pre-assignment (or "The Quiz")

➡ **Articulate topic** (as a sentence)

➡ **Suggest** five to ten **keywords**

➡ **Find** relevant book chapter (Knovel)

➡ **Find relevant article**

➡ Is this article available in full text? Yes/No – and How do you know?

Development

- 2015/16 – Pilot
- 2016/17 – **Son of** Pilot
- 2017/18 – All IEE1020 sessions.

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IEE 1020: Technical Communications: "How to" Videos

Resources to help students with the research assignments for IEE1020.

Finding Articles | **"How to" Videos** | **Doing Background Research** | **Finding Books** | **Technical Journal Analysis** | **Aviation Databases** | **APA**

ResearchPath | **Book an appointment with Ed**

How to Find Engineering Information

The following short YouTube videos will give you a brief explanation of basic library research skills. Most are less than five minutes long and all have sound/audio. **The four videos at the top will be REQUIRED viewing for students in certain instructor's IEE 1020 sections.**

For students taking the QUIZ, access that quiz HERE! Make sure to indicate your section/time AND your instructor's name in this quiz, so that you get credit!!

- Brainstorming Keywords
  Finding out what search terms to use in online database searching is an essential skill for finding relevant articles.
  Runtime: 2:13 min
- Using Knovel Engineering eBooks
  How to find background information in Knovel's collection of engineering handbooks and manuals.
  Runtime: 2:17 min
- Using Engineering Village
  This video shows you how to use the Engineering Village database, which covers all areas of engineering. The skills shown in this video you can apply to any database.
  Runtime: 6:02 min
- Accessing Full Text Engineering Articles
  This video covers how to access full text articles that you find references to in our online databases.

Subject Guide

Edward Eckel

Email Me

NEED HELP? CHAT NOW!

Make an Appointment

Contact:
Waldo Library, First Floor, Room 1049
269-387-5140

Libguides.wmich.edu/iee1020

Rubric Levels

- **Level 1** – Minimal or no progress toward competency
- **Level 2** – Significant progress toward competency
- **Level 3** – Has reached/achieved competency

Create and modify research plan

- **Competency:** Create and modify a research plan as needed until sufficient information is gathered.

- **Measured by:** Question 5. Please type five to ten keywords relating to your topic (After viewing the "Brainstorming Keywords" video).

Create and modify research plan

Level	Criteria
Minimal or no progress	Student includes no keywords or keywords are very general (too broad in nature). Keywords suggested indicate student has done no thinking about topic yet.
Significant progress	Student includes 1-2 keywords that are specific enough to indicate that student has done some thinking about potential topic ideas. Other keywords may still be general or too broad.
Reached competency	Keywords submitted are specific, discipline-based, and appropriate for an IEE1020 topic.

Browse/Explore for Background

- **Competency:** Browse and freely explore search engines, textbooks, encyclopedias, and wikis to gather background information on a topic.

- **Measured by:** Question 6. Paste in the title of a book found in Knovel (best if the book you choose is related to your topic). (After viewing the "Using Knovel eBooks" video)

Browse/Explore for Background

Level	Criteria
Minimal or no progress	Student did not submit a book title OR the book title suggested is not relevant to the proposed paper topic.
Significant progress	Book title is related to proposed paper topic, but only on a very broad level.
Reached competency	Proposed book title is directly relevant to the student's proposed paper topic.

Identify info portals/Search for breadth of sources

- **Competencies addressed:**
- Identify appropriate information portals including core research databases (i.e. JSTOR, Web of Science), web search engines (i.e. Google Scholar), library catalogs, government resources, open data sets, etc.
- Search for a breadth of information sources on a topic, including both traditional and emerging formats of scholarly conversation.
- Evaluate information to determine whether, why, and how it addresses the research question.

# Identify info portals/Search for breadth of sources

Measured by:

7. From the Search Results screen in Engineering Village, paste in the full record or citation of a journal article related to your topic. (After viewing the "Engineering Village" video)

# Identify info portals/Search for breadth of sources

| Level	Criteria
Minimal or no progress	Student did not submit an article citation OR the citation suggested is not relevant to the proposed paper topic.
Significant progress	Citation is related to proposed paper topic, but only on a very broad level. Appears student picked first article to show up in Engineering Village.
Reached competency	Proposed article citation is directly relevant to the student's proposed paper topic.

Brainstorming Keywords

28% (64)

52% (119)

20% (45)
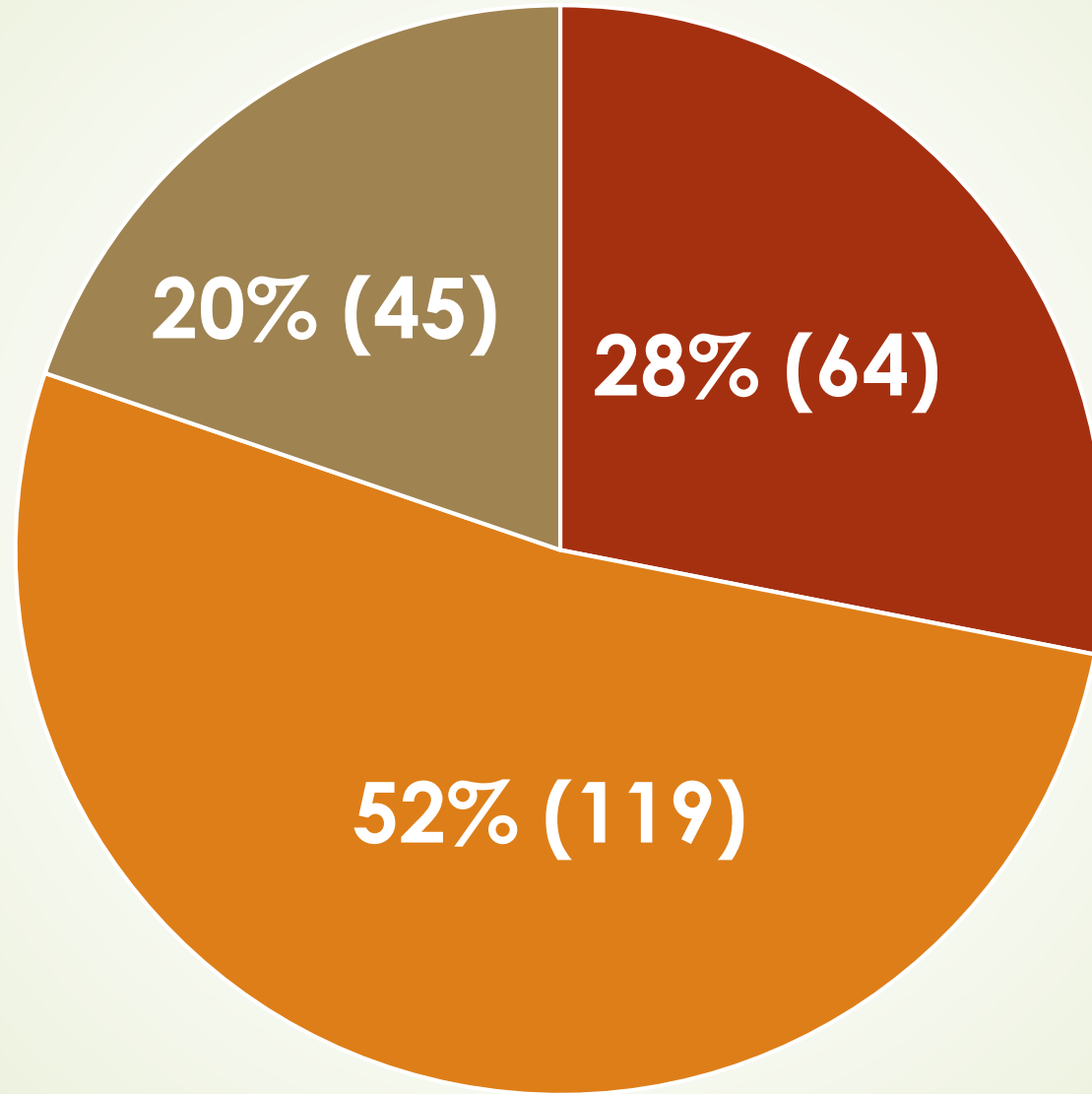
■ Level 1　■ Level 2　■ Level 3

Finding Book Chapter (Knovel)

27% (61)

20% (46)

53% (121)
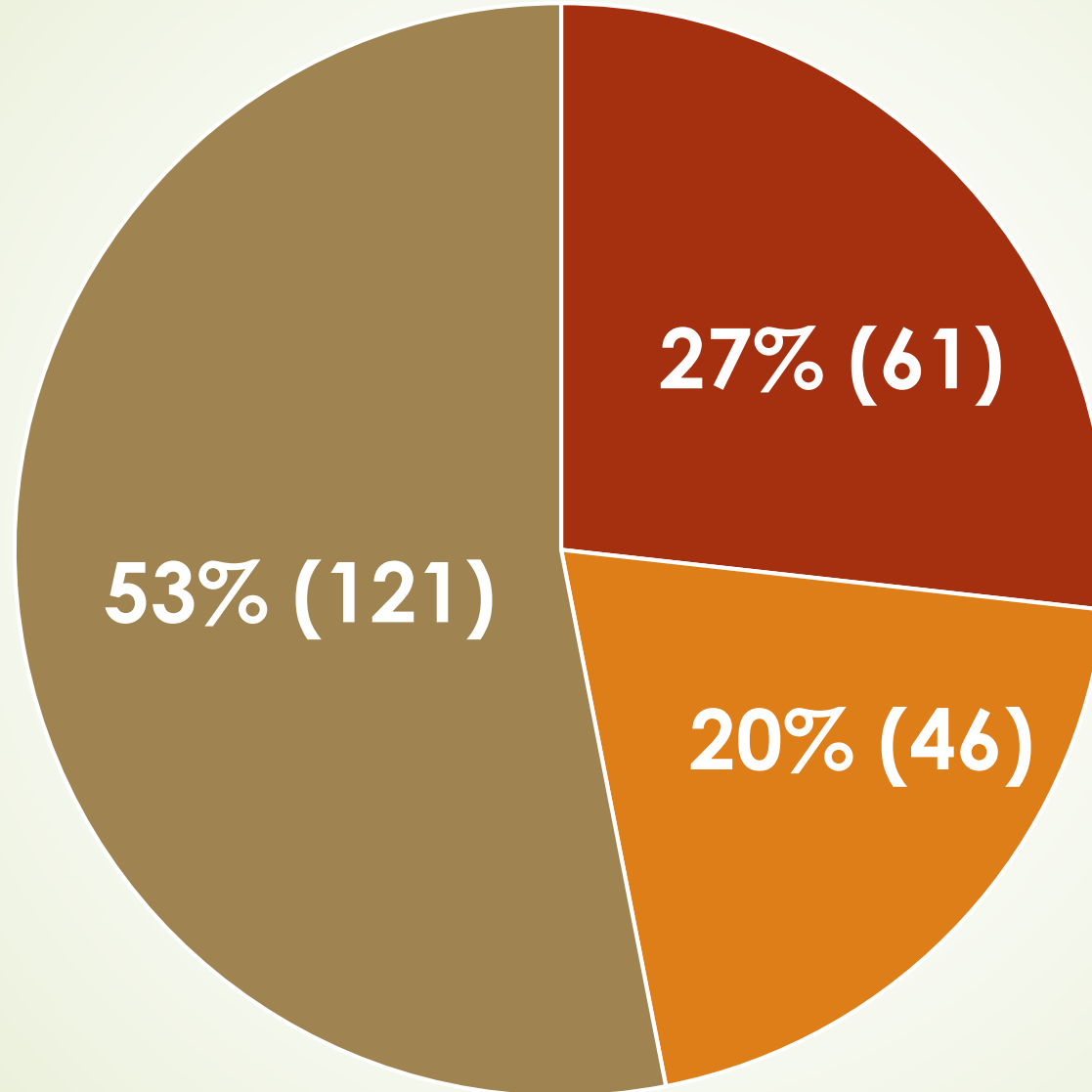
Level 1   Level 2   Level 3

Finding Article – Engineering Village

20% (46)

12% (26)

68% (153)
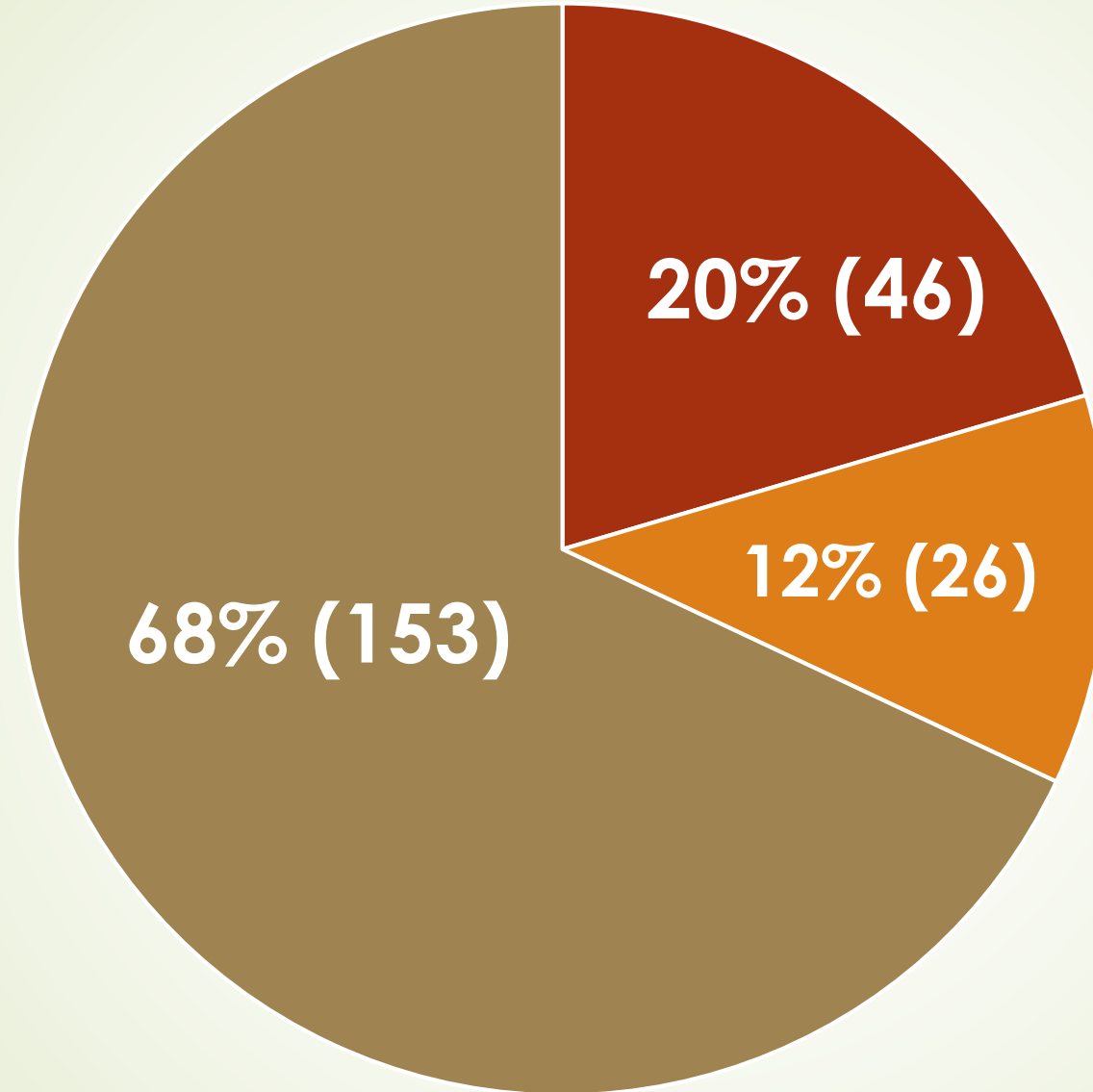
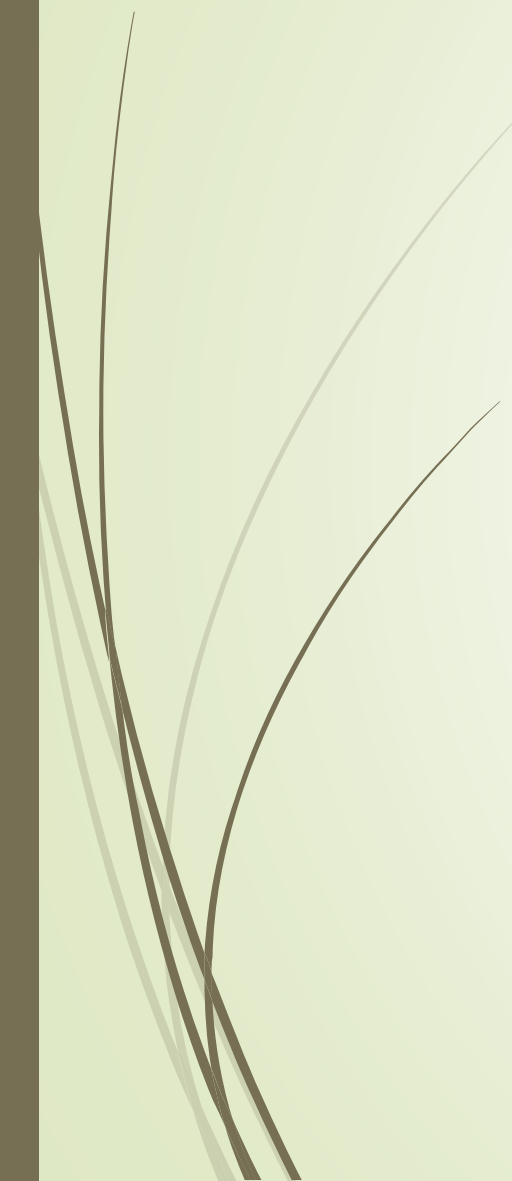■ Level 1   ■ Level 2   ■ Level 3
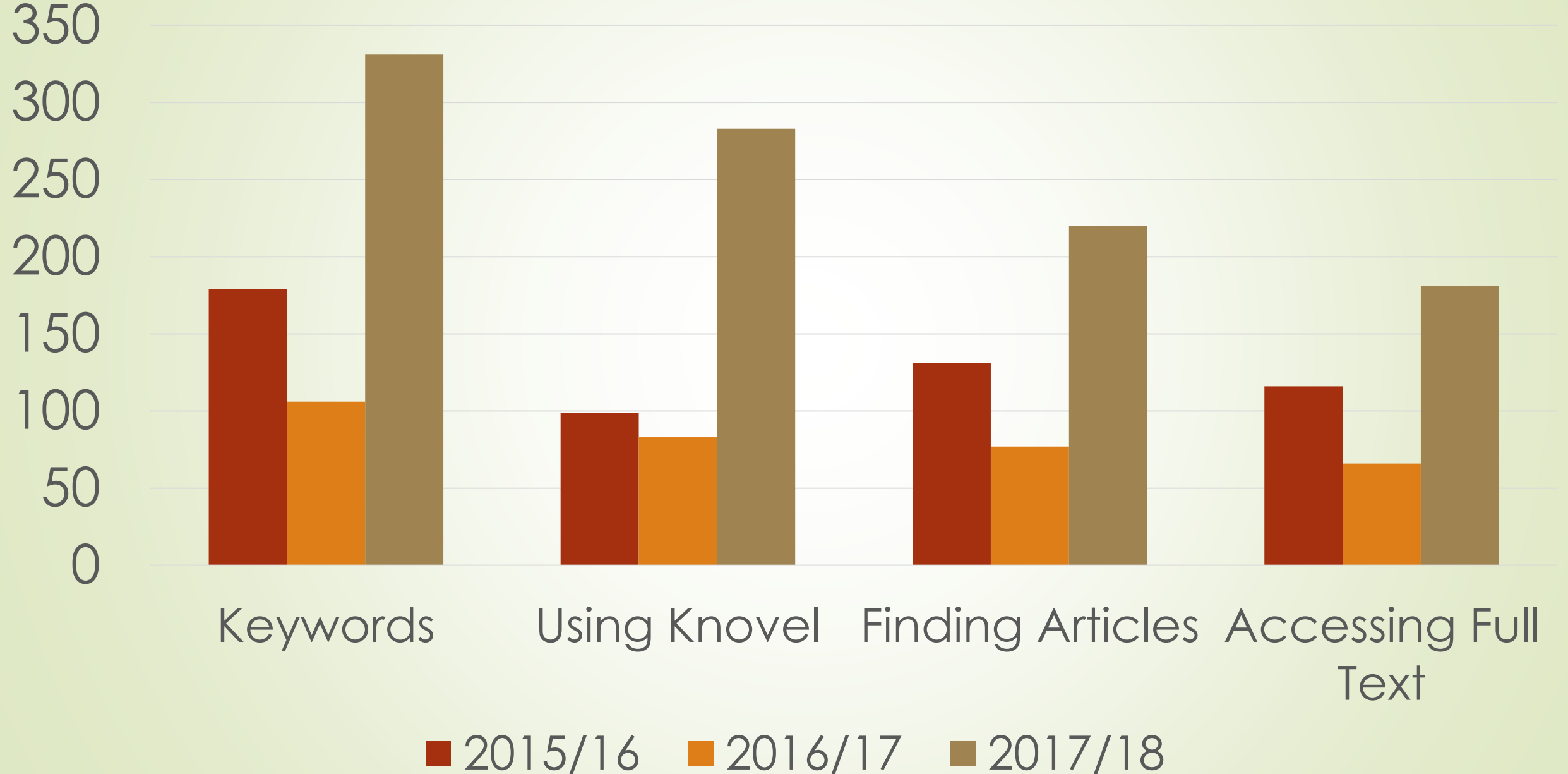
Advantages

- **More one-on-one** time with students
- Students in **more active role**
- Students seem more motivated
- Less tedious "training"
- I enjoy myself more!

Source: Eckel Classroom (at Workstation). (2010, February). *Prism Newsletter, 44*. Office of the Provost and Vice President for Academic Affairs.

Challenges

- In-class work is not really social.
- Not all faculty ready for flipped session.
- Not all students will complete the pre-assignment.
- Some students need additional help.

Future work

- Would like ALL IEE1020 sessions to follow the "flipped" model
- Incorporate some additional assessment of student skills in class
- Group or team work would be nice

Contact me @

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269-387-5140

Western Michigan University Libraries

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Image Sources

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◗ Flipping - title slide - EMILIEN_DE_FALCO_,_GREG_JUSTIN.jpg - CC BY-SA 3.0 - https://commons.wikimedia.org/wiki/File:EMILIEN_DE_FALCO_,_GREG_JUSTIN.jpg

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