

Teaching Library Instruction Classes for Science Majors during the Covid-19 Pandemic: Various Modes and Varied Experiences

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Pre-Pandemic Library Instruction for Science Majors at Adelphi University

- All library instruction sessions for sciences were held in-person;
- Some sessions had active learning components;
- In some sessions interactive lectures were supplemented with handouts and/or course specific LibGuides;
- Almost all sessions provided students hands-on experience with searching databases and information retrieval.

Pre-Pandemic Library Instruction for Science Majors at Adelphi University (Cont'd)

- No library instruction available in an asynchronous mode or over Zoom;
- No digitally recorded library instruction lectures;
- No recorded library instruction videos for a course.

A list of one shot in-person library instruction sessions converted to digital modes during the Pandemic

- **Fall 2020:** In-person Library Instruction of CHE 193 (50 minutes) → Online Synchronous Library Instruction;
- **Spring 2021:** In-person Library Instruction of Bio 112 (2.5h) → Pre-recorded Asynchronous Library Instruction Video Lecture;
- **Spring 2021:** In-person Library Instruction of Env 410(1.5 h) → Pre-recorded Asynchronous Library Instruction Video Lecture;
- **Spring 2021:** In-person Library Instruction of CHE 194 (50 minutes) → Library Instruction in Hy-Flex Mode.

Synchronous Online Library instruction for CHE 193

- CHE 193 – First Research Seminar course for First Year Chemistry Majors;
- Students need to learn how to locate chemistry or biochemistry related articles recently (last 3-5 years) published in *Scientific America* or *American Scientist*;
- Searching for and retrieval of chemistry or biochemistry related articles in these two popular science magazines are not straightforward processes.

Synchronous Online Library instruction for CHE 193 (cont'd)

- A multistep process compounded by authors-imposed embargo on the availability of full-text of many recently published articles in EBSCO's Academic Search Complete or ProQuest Central databases;
- Availability of articles in HTML without graphics, charts and tables;
- No electronic subscription to *American Scientist*.
- Electronically available at <https://www.americanscientist.org>;
- Availability of many articles for purchase only or through individual subscriptions.

Synchronous Online Library instruction for CHE 193 (cont'd)

- Prepare two multi-page hand-outs (one for each magazine) using Paint 3D program and MS Word explaining each step both textually and graphically;
- Shared with the Chemistry Instructor to be put on the CHE 193 Moodle;
- 18 students; nobody showed their faces or turned on their cameras including the Chemistry instructor;

Synchronous Online Library instruction for CHE 193 (cont'd)

- Teaching in real time to real people who are faceless and expressionless! A totally a different experience;
- Provided live demos of searching databases for chemistry/biochemistry articles in those magazines and their full-text retrieval to the muted students;
- No questions in the chat;
- No verbal or non-verbal communications to understand whether or not the students were able to follow the lecture without any problems.

Synchronous Online Library instruction for CHE 193 (cont'd)

- No formal evaluation or feedback from the students;
- No request for research appointment for additional help;
- Well-acceptance of the step-by-step handouts .
- Chemistry Instructor's satisfaction with the outcomes of the assignment;
- Students' happiness seeing a real person on the screen talking to them.

Pre-recorded Asynchronous Video Lecture for Bio 112 Students

- A laboratory course providing students with basic understanding of scientific methods including the formulation of scientific questions and hypotheses.
- Offered in Spring semester;
- Multiple sections (8-10 sections and 20-25 students/section) ;
- Duration of each class (2h 30 min/week);

Pre-recorded Asynchronous Video Lecture for Bio 112 Students (cont'd)

- Library instruction conducted to teach students:
 - how to identify research, review, and popular science magazine articles by examining their formats and contents;

AND

- how to search for peer-reviewed full-text original research articles searching Scopus database to substantiate the findings in their lab reports .

Pre-Pandemic Library Instruction for Bio 112 Students

- In-person Library instruction for all sections of Bio 112
- Clickers used to measure students' baseline knowledge of Scientific literature and the disparities between students' perceptions and their actual knowledge of scientific literature;
- Physical copies of articles of three types scientific literature (Research, Review, and science magazine) for students to examine the formats and contents;

Pre-Pandemic Library Instruction for Bio 112 Students (cont'd)

- Students' active participation in classroom discussion on the formats and contents of research, review, and popular science magazine articles;
- Hands on experience on Scopus database searching for peer-reviewed original research articles and their full-text retrieval;
- Students' evaluation of Library instruction;
- Determination of knowledge retention through a follow-up quiz towards the end of the Spring semester;

Library Instruction for Bio 112 Students in the Pandemic period

- All Spring 2021 sections of Bio 112 were moved online.
- Eight sections were taught by five Biology faculty in Spring 2021;
- 160 students enrolled;
- The course coordinators wanted pre-recorded bio 112 library instruction on Zoom or Panopto to be added as an asynchronous module;
- Two asynchronous video lectures were recorded in clouds using zoom and written scripts.

Library Instruction for Bio 112 Students in the Pandemic period (cont'd)

- One Video lecture on scientific literature with examples of 2 research articles with the traditional and the non-traditional formats, 1 review article and 1 science magazine articles (1h 8 minutes 19 seconds long);
- Another video lecture on searching Scopus database for original research articles (45 minutes long).
- No clickers used;

Library Instruction for Bio 112 Students in the Pandemic period (cont'd)

- No scope for measuring of the baseline knowledge of the students about scientific literature;
- No scope for interactive discussion and obtaining instant feedback from students to establish the needs for learning the structure and contents of different types of scientific articles;
- No hands-on activities;

Library Instruction for Bio 112 Students in the Pandemic period (cont'd)

- Recorded demo of searching Scopus for peer-reviewed original research articles on a biological topic incorporating all the details of the search strategies employed in the narration ;
- Demonstration of retrieval of full-text using various types of library resources and services (i.e. Full-text from online databases including Scopus, requesting userservices@adelphi.edu for copies of articles available in print journal collections in the library and the InterLibrary Loan services for the articles not available in AU Libraries)

Library Instruction for Bio 112 Students in the Pandemic period (cont'd)

- Problems due to the internet and connectivity issues;
- Successful recording after a few failed attempts;
- emailed Zoom links of the recordings to both 2020 and 2021 course coordinators for their review and comments;
- Cloud recordings on Zoom had been automatically saved on Panopto for storage and distribution.

Library Instruction for Bio 112 Students in the Pandemic period (cont'd)

- Closed captions available in the recordings on Panopto;
- Captions needed thorough editing as many words and/or phrases were not captured correctly/uniformly in several places;
- Needed to edit the punctuations throughout the text;
- A quiz created on Google Document posted on the course Moodle to ensure students learning.

Library Instruction for Bio 112 Students in the Pandemic period: students' responses to the quiz

- What is your Current academic status?
 - 149 responses:
 - 77.7% =Freshman; 13.4%=Sophomore;7.4 %=Juniors; 2%=Seniors
- Did you view the library instruction videos for bio 112 this semester?
 - 149 responses; 96.6% said YES
- An article that contains Materials & Methods and Results sections should be considered :
 - 149 responses; 94.6% identified it correctly as a research article

Library Instruction for Bio 112 Students in the Pandemic period: students' responses to the quiz

- Identify the research articles:
 - 149 responses
 - 82% correctly identified the research article with traditional format.
 - 6% correctly identified the research article with non-traditional format
- Identify the review articles:
 - 149 responses
 - 42.3% correctly identified the review article
- Identify the popular science magazine articles:
 - 149 responses
 - 62.4% correctly identified the popular science magazine article

Indicators of Effectiveness of Asynchronous Video Lectures for Bio 112 Course

- Received an invite from a student enrolled in Bio 112 before the Finals in Spring 2021 to speak to her sorority members for the tips of writing good papers;
- A Faculty who taught two BIO 112 sections in Spring 2021 has requested access to the Panopto recordings of asynchronous video lectures for his summer BIO 112 class starting on 6 July, 2021.

Pre-recorded Asynchronous Video Lecture FOR ENV 410

- One Environmental Science faculty requested an asynchronous library instruction session for her Capstone Class (ENV 410).
- Students needed to write their research papers on the impacts of climate changes in the Arctic and on various regions and communities dealing with the effects of sea level rise, changes to habitat, vegetation successions, economic impacts, etc.

Pre-recorded Asynchronous Video Lecture for ENV 410 (cont'd)

- Meeting with the instructor over Zoom to discuss the contents of the video lecture using various information resources and services available in AU Libraries and beyond;
- A LibGuide , "Arctic and Climate Change" created to supplement the video lecture;
- The link to the Libguide emailed to the capstone instructor for her review and comments.

Pre-recorded Asynchronous Video Lecture for ENV 410 (cont'd)

- Based on the resources put together in the LibGuide “Arctic and Climate Change” video lecture was recorded in cloud using zoom;
- A demo of searching Scopus database using a number of search strategies with different keywords and their variants was recorded;
- Each and every step of database searching was explained in details in the recorded video.

Pre-recorded Asynchronous Video Lecture for ENV 410 (cont'd)

- Addressed the needs of citing documents in the research papers;
- Explained AU Libraries Citation Style guide for “In-text” citation and References;
- Upon the completion of 1.5 h long video lecture, the link of the recording was sent to the capstone course instructor for her review and comments.

Pre-recorded Asynchronous Video Lecture for ENV 410 (cont'd)

- Eight students enrolled in ENV 410 in Spring 2021;
- Towards the end of the 2021 Spring semester a brief questionnaire was sent to the Capstone instructor requesting anonymous students' feedback on the LibGuide and the pre-recorded asynchronous video-lecture;
- Seven students responded;
- Not a lot of comments, but the overall responses were positive!

Summary of ENV 410 student responses

- All students (100%) noted they found both the course Libguide and the Library Instruction video lecture most helpful for their assignments.
- Students considered none of the resources least helpful for their assignments.
- 42.9% (3 out of 7 students) preferred synchronous, in-person instruction in a classroom setting.
- 42.9% (3 out of 7 students) preferred asynchronous, library instruction in the form of video lecture.
- 14.2% (1 out of 7 students) preferred synchronous online library instruction .

Individual Student's Comments

- Provided by 6 students;
- “no comments, it was very helpful.”
- “They were both very helpful ...”
- “...I would much rather prefer an in-person version of this lecture. I feel like it is more personal and is easier to ask questions as a whole. I do also believe that it is much easier to get distracted when it is asynchronous.”

Individual Student's Comments (cont'd)

- “Overall, I am grateful for the LibGuide and Scopus instruction video as they will be of great use to me in my project. Thank you for taking the time to make them.”
- “The instruction videos prepared by the librarian were extremely helpful in exploring the online website. Having several examples given aided me personally to find articles and books needed for class.”
- “Overall, I felt that the video was an effective way of teaching us how to use the Scopus Database and the ENV 410 LibGuide. The use of captions especially is useful for people trying to find advice for a specific feature of the databases. Additionally, since the video is asynchronous, and we have the ability to view it again after the initial assignment, we can view it again at any point as we go about writing our first draft.”

Library Instruction for CHE 194 students in HyFlex Mode

- The term HyFlex is derived from two words, “hybrid” and “flexible.”
- In a synchronous HyFlex course, students can have two types of participation options and they can choose one of them; regardless of the option chosen by the students, all students should achieve the same learning objectives.
- In Spring 2021 CHE 194 students had options :
 - to participate either in face-to-face synchronous class sessions in-person (in a classroom) ;
 - or participate in face-to-face synchronous class sessions via video conference i.e., Zoom.

Library Instruction for CHE 194 students in HyFlex Mode (cont'd)

- CHE 194 course had 13 students;
- 10 of them took this course in-person being physically present on campus and the remaining three students attended this course remotely as well as synchronously on Zoom;
- A Zoom meeting with instructor in January 2021 to discuss the assignment.
- Students needed to learn how to search for authors using SciFinder-N to find publications of current Chemistry faculty at AU.

Library Instruction for CHE 194 students in HyFlex Mode (cont'd)

- Went on campus to teach the class;
- Noticed changes in the classroom settings;
- Needed to teach wearing masks in the classroom;
- Worried about the lack of non-verbal communication as masks covered almost 75% of the surface area on our faces;

Library Instruction for CHE 194 students in HyFlex Mode (cont'd)

- Importance of non-verbal communications in enhancing student performance and their engagement in the process of learning;
- Needed to be mindful of the presence of students in two different settings and the learning needs of both groups;
- Provided a live demo of how to search for authors on SciFinder-N using some of AU chemistry faculty's names as examples.

Library Instruction for CHE 194 students in HyFlex Mode (cont'd)

- Students in both groups (in-person and remotely located) could follow the lecture and demonstration without any problem.
- Students were highly engaged in searching the database on their own devices.
- Students from both the “homie” group and the “in-person” group corrected a mistake made by the librarian and directed her to the right link.

Library Instruction for CHE 194 students in HyFlex Mode (cont'd)

- Students were able to complete their assignments successfully.
- No students contacted the Librarian instructor for additional help.
- No formal evaluation done by the Chemistry or the Library Instructor.

Advantages of pre-recorded asynchronous video lecture

- Students can enjoy self-paced learning ;
- No need for scheduling library instruction at a particular time and no need for reserving rooms or finding space to provide instruction to students;
- Closed captioning can help students to understand the contents better and is helpful for students with hearing impairment;

Advantages of pre-recorded asynchronous video lecture (cont'd)

- Usage statistics are available for analysis;
- Can be used by unlimited number of students at their convenience;
- Can be reused in multiple sections and multiple semesters;
- Frees up the library instructor's time and energy from repeating the same lecture for students in multiple sections of a course.

Disadvantages of pre-recorded asynchronous video lecture

- Need for training to learn technology and software.
- Problems with the Internet, computer and connectivity issues in successful recording of the lecture.
- Challenges involved in developing interactive and engaging videos for active learning .
- Students participation in discussion and receiving instant feedback from students are not possible.
- Lack of interaction with students can create disconnect between librarian instructor and the students.

Disadvantages of pre-recorded asynchronous video lecture (cont'd)

- Creating Asynchronous pre-recorded lecture is time consuming and editing close captioning can be very tedious.
- Needs for updating the contents as search interface of databases and availability of resources change.
- Lack of proof whether students have watched the recording partially or completely.
- Need for quiet space and plenty of time to record the asynchronous lecture video.
- Dependence on the classroom instructor or course instructor for obtaining usage data for statistical reporting.

Pertinent Questions

- If students are happy to have pre-recorded asynchronous video lectures of library instruction, can we find time to make them available for all the library instruction sessions we are asked to teach?
- In post-pandemic period will there be demands for supplementing some/all in-person library instruction sessions with pre-recorded lectures?
- Can we meet the demands for pre-recorded asynchronous library instruction with our other job responsibilities ?

Questions?

Thank You!

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