

Abstract

A syllabus is typically dense because it covers the rules/layout of the course. The intentional addition of visual aids in a syllabus may benefit students with weak verbal skills or those with learning challenges. I compared comprehension of a traditional versus visual syllabus in an introductory biology course to determine if one syllabus gives a more positive course introduction. A survey was offered at the beginning of the course with one syllabus, after which both syllabi were available for students to use throughout the semester. A second survey was offered at the end of the course to determine syllabus usage and reactions. Preliminary data indicate no significant difference in comprehension ability between the two syllabi. End of semester data indicate a strong preference for the traditional syllabus. Students commented that they appreciated the simplicity of the traditional syllabus which contrasts other scholarship, but may be indicative of STEM students.

Background

The syllabus is the gateway for any course giving a student their first impression as to the complexity and organization of the course. Traditionally, syllabi are intended to serve as a contract between instructor and student, a permanent record for the college/university, and as a learning tool for the student to view topics and course outcomes (Wolf *et al.*, 2014). As a result, syllabi are typically dense and wordy because they cover all the rules of the instructor and institution as well as provide the layout of the course. This format can be overwhelming to a student. Recent research shows that visual aids (such as pictures, graphs, key words charts, videos, and photographs) can support learning (Sperotto, 2016). The objective of including visual material is to increase engagement, comprehension, and information retention (Nilson 2002). A student with strong verbal skills may prefer a densely written syllabus (Yarosh, 2021). The intentional addition of visual aids in a syllabus (images, bold headings etc.) may benefit students who do not have strong verbal skills or who have learning challenges (Crispi and Stivers 2015).

Methods

In this study, I compared student comprehension of a traditional syllabus and visual syllabus in an introductory biology course for Fall 2022 to determine if one syllabus type gives a more positive experience/introduction into the course.

- An anonymous survey was offered at the beginning of the course.
- Students were recruited to take the survey and were randomly assigned to one of the two syllabi.
- Students were given 48 hours to complete the survey before I reviewed course material with them.
- After the survey was complete, both syllabi were available on CANVAS for students to use throughout the semester.
- A second anonymous 'end of the semester' survey was offered to determine syllabus usage over the course of the semester and reactions of using a particular syllabus.

FALL 2022

BIOLOGY 102 ORGANISMAL BIOLOGY

Catherine Mossman (She/Her)
Instructor

Welcome to Bios 102!

I am looking forward to working with you this semester.

A little bit about me: I have been teaching at UW-Parkside for over 20 years. BIOS 102 is one of my favorite courses to teach. My background is in Ecology and Animal Behavior. I am married and have two adult kids. My favorite hobbies are hiking and biking.

A little bit about the course: Bios 102 focuses on organismal diversity. It addresses questions such as: how many different kinds of organisms exist, how they function, how they interact, how we classify them, and how they have come to exist. This course will help you have a greater understanding of the organisms around you and their connection to each other and to you. This course also introduces concepts fundamental to your future Biology coursework.

Contact Info

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Phone: 262-595-2676

Student-Instructor Hours:
Mondays 12:00-1:00PM (Zoom Chat & Chew)
Tuesdays 11:00AM-Noon. Please contact me if these times don't fit your schedule. I am happy to schedule another block of time that works for both of us.

Lecture Class Meets...
Tues/Thurs 12:30-1:52PM
MOLN Room 105

Labs meet...
In GRNQ D131

Figure 2: First page of VISUAL syllabus

Table 1: Comparison of Two Syllabi

College	Traditional Syllabus	Visual Syllabus
Same wording of Information	✓	✓
Newspaper/Magazine Layout		✓
Use of visuals/Images Throughout		✓
Use of flow chart to Show course outline		✓

Results

- Comprehension of both syllabi at the beginning of the Fall 22 semester were not significantly different between the groups (χ^2 tests of individual questions, $p > 0.05$, $n = 31$).
- Beginning of the semester reactions to both syllabi were generally positive, with the common descriptor word for the traditional syllabus as being "informational" and the visual syllabus as being "organized." Twenty students of the original 31 students completed the end-of-semester survey.
- Seventy-five percent of students indicated that they used the traditional syllabus over the visual syllabus throughout the semester. Sixty-five percent used their chosen syllabus occasionally (2-5 times) and 35% indicated that they used their chosen syllabus more than five times throughout the semester.
- The most common word used to describe the chosen syllabus was "organized" (8/20 responses) with 7 of the 8 responses referring to the traditional syllabus. This is a reversal from the initial impression of the syllabus taken at the beginning of the semester.

Conclusions

- Preliminary data do not show a significant difference in comprehension ability between the tradition and visual syllabus. More data will be collected during the Spring 2023 semester to see if this pattern continues.
- End of the semester data indicate a strong preference for the traditional syllabus.
- Students commented that they appreciated the simplicity of the traditional syllabus to locate information quickly.
- Students who used the visual syllabus also had positive reactions, but fewer used it throughout the semester ($n=5$).
- Even if only a few students need/want to use a more visual syllabus, providing a choice may make the overall classroom experience inclusive and a worthwhile endeavor.

BIOS 102 ORGANISMAL BIOLOGY
FALL 2022

Lecture: Tuesdays & Thursdays 12:30-1:52PM (SEC 002)
MOLINARO HALL Room 105

Text: Reece JB, Urry LA, Cain ML, Wasserman SA, Minorsky PV and Jackson RB. 2021. *Campbell Biology*, 12th edition, Benjamin Cummings, San Francisco, CA

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Phone: (262) 595-2676
Student Instructor hours: Mondays 12:00-1:00PM (Zoom Chat & Chew); Tuesdays: 11:00-Noon; Please contact me if these times don't fit your schedule. I am happy to schedule another block of time that works for both of us.

Lab: Section 081 Mondays 2:00-4:50PM (Mossman)
Section 082 Tuesdays 8:00-10:50AM (Taft)
Section 083 Tuesdays 2:00-4:50PM (Taft)

IN PERSON LABS BEGIN WEEK OF September 12, 2022 in GRNQ D131. Part of Week 1 lab assignment available ONLINE beginning September 6, 2022

Texts: *Campbell Biology*, 12th edition, Benjamin Cummings, San Francisco, CA.

Lab Instructor: Catherine Mossman, Natalia Taft
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Phone: 262-595-2676

Introduction:
Hello and welcome to Bios 102! I am looking forward to working with you this semester.
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Figure 1: First page of TRADITIONAL syllabus

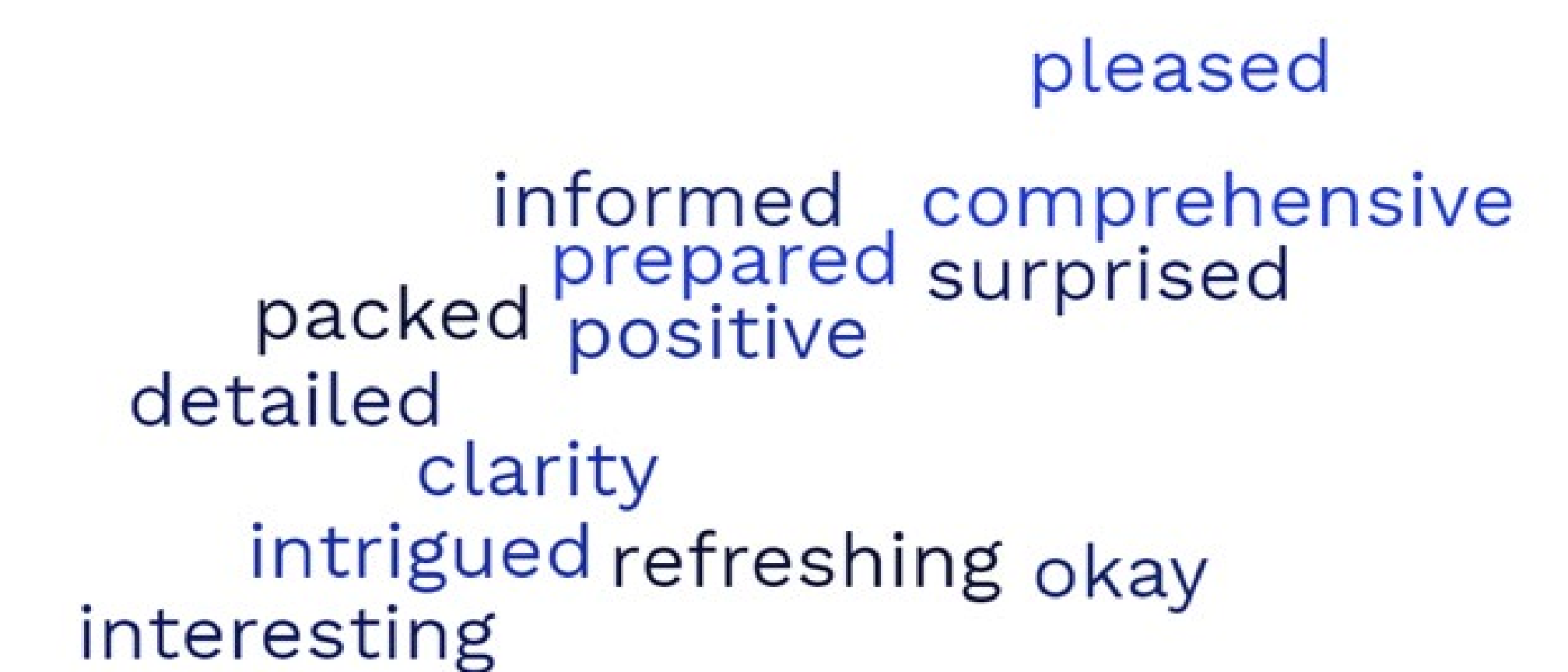
WORD CLOUD COMPARISON OF TWO SYLLABI

WHAT ONE WORD BEST DESCRIBES YOUR REACTION TO THIS SYLLABUS?

TRADITIONAL SYLLABUS



VISUAL SYLLABUS



PARTICIPATE!

Answer the following question on your phone:

What word best describes your expectation of a class syllabus?



Acknowledgments

I would like to acknowledge the UW System Wisconsin Teaching Fellows and Scholars Program for their generous funding to learn about the scholarship of teaching and applying it to my class during the 2022-2023 academic year.

References

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- Sperotto, L. 2016. The visual support for adults with moderate learning and communication disabilities: How visual aids support learning. *International Journal of Disability, Development and Education*. 63 (2), 260-263.
- Wolf, Z., Czekanski, K., & Dillon, P. 2014. Course syllabi: Components and outcomes assessment. *Journal of Nursing Education and Practice*, 4(1), 100-107.
- Yarosh, J.H. 2021. The syllabus reconstructed: An analysis of traditional and visual syllabi for information retention and inclusiveness. *Teaching Sociology*, Vol 49(2), 173-183.