

# Supplemental Material

*CBE—Life Sciences Education*

Mills *et al.*

**Supplemental Table 1.** Summary of course statistics.

College	Semester	Year	Seated (S), Hybrid (H), or Online (O)	Peason, McGraw Hill, or OpenStax Text	Students enrolled	Total students using published textbook	Total students using open textbook
Anoka Technical College	Fall	2015	S	Pearson	46	158	150
	Fall	2015	H	Pearson	37		
	Spring	2016	S	Pearson	35		
	Spring	2016	H	Pearson	40		
	Fall	2016	S	OpenStax	41		
	Fall	2016	H	OpenStax	45		
	Spring	2017	S	OpenStax	24		
	Spring	2017	H	OpenStax	40		
St. Cloud Technical and Community College	Summer	2012	O	McGraw Hill	19	96	147
	Summer	2013	O	McGraw Hill	26		
	Fall	2013	S	McGraw Hill	24		
	Summer	2014	S	OpenStax	24		
	Fall	2014	S	OpenStax	48		
	Summer	2016	O	McGraw Hill	27		
	Summer	2017	O	OpenStax	29		
	Fall	2017	S	OpenStax	46		
Saint Paul College	Fall	2015	H	Pearson	23	162	193
	Fall	2015	O	Pearson	24		
	Spring	2015	S	Pearson	46		
	Spring	2015	O	Pearson	47		
	Summer	2015	O	Pearson	22		
	Spring	2016	O	OpenStax	23		
	Summer	2016	O	OpenStax	18		
	Fall	2016	O	OpenStax	47		
	Spring	2017	O	OpenStax	18		
	Spring	2017	S	OpenStax	48		
	Summer	2017	O	OpenStax	19		
	Fall	2017	O	OpenStax	20		
Century College	Fall	2015	S	Pearson	20	129	47
	Spring	2016	S	Pearson	43		
	Fall	2016	S	Pearson	24		
	Spring	2017	S	Pearson	42		
	Fall	2017	S	OpenStax	47		

**Supplemental Figure 1.** Faculty Survey on Open Educational Resources. This was distributed to two-year college biology faculty fall semester 2017.

## APPENDIX A

### Faculty Survey on Open Educational Resources

***Instructions:*** This survey is only for biology faculty (full and part-time) and should take less than 15 minutes to complete. Please only use this survey to comment on one Biology course. If you want to comment on books for multiple classes, please complete this survey again.

If you have any questions about the survey or OER, please do not hesitate to contact Dr. Kristyn VanderWaal Mills at [kristyn.vanderwaalmills@saintpaul.edu](mailto:kristyn.vanderwaalmills@saintpaul.edu).

*Survey adapted from: Bliss, T.J., Robinson, T.J. Hilton, J., Wiley, D.A. (2013) An OER COUP: College Teacher and Student Perceptions of Open Educational Resources, Journal of Interactive Media Education; and Allen, I.E. and Seaman, J. (2016) Opening the Textbook: Educational Resources in U.S. Higher Education, Babson Survey Research Group.*

What college are you currently teaching at (if teaching at more than one, list all colleges)?

How many credits are you currently teaching?

- 15+ credits as a UFT faculty
- 15+ credits as a UPT or TPT faculty (working full-time, but not UFT)
- 5-14 credits as a part-time faculty
- less than 5 credits as a part-time, adjunct faculty

How long have you been teaching at the college level?

- Less than 3 years
- 3 to 10 years

more than 10 years

What is your gender?

Male

Female

Thinking about the courses you currently teach, which biology course are you choosing to use for this survey?

(Please choose one course. If you want to comment on books for multiple classes, take the survey again!)

What is the textbook you assign for the course? Include online homework programs (i.e. LRNR, Wiley Plus, Mastering, etc.).

For this semester, how much do students spend on required materials for this course?

\$0

\$1 - \$49

\$50 - \$99

\$100 - \$200

I don't know the cost of the books

Why did you choose your current textbook? (Select all that apply)

This textbook has an excellent accompanying online program

- Students learn well from this textbook
- It was cost-effective for students
- I used this textbook at another college (as a student or an instructor)
- I did not choose the textbook as it was decided by the department

How would you rate the quality of the textbook used for this course?

- BETTER than the quality of texts in my other courses
- About the SAME AS the quality of texts in my other courses
- WORSE than the quality of texts in my other courses

Please briefly describe what made the quality of the textbook WORSE or BETTER than those in other courses.

Please read and rate each statement on how important textbook choice is in determining student success or learning (not including online programs).

	Strongly agree	Agree	Disagree	Strongly disagree
It is essential for all students to succeed in the course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is essential to earn an "A" in the course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is necessary for students to succeed in certain topics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is necessary only as a reference and review resource	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly agree	Agree	Disagree	Strongly disagree
Students do not need any additional materials beyond my lectures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you expect students to utilize the textbook in this course? (Select all that apply)

- Students should read each chapter before class
- Students should read each chapter after class
- Students should only read topics they struggle with
- Students should use the book as a reference for figures and terms
- Other:

Please read and rate each statement on how often do you think students actually use the textbook for this course throughout the semester.

	Often	Sometimes	Seldom	Never
Students never access or look at it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use it once or twice total	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use it about once a week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use it more than once a week	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you expect students to use the online homework program? (Select all that apply)

- Students take required quizzes through the program.
- Students should look at additional activities and resources for each topic (practice tests, games, interactive activities), but these are not required.
- Students use it to access the e-textbook more easily.
- Students buy it, but they do not have to use the features.
- We do not require a program beyond D2L.

Please read and rate each statement on how much you agree students actually use the online homework program.

	Strongly agree	Agree	Disagree	Strongly disagree
Students only take the required quizzes, and do not use other resources. It helps them check their understanding with in depth questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students take the quizzes AND use many of the other resources. These resources make an additional positive difference to student learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students read the text and take quizzes, but there are few additional resources that make a difference to student learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students do not buy the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How familiar are you with Open Educational Resource (OER)?

(OER is a resource available for no cost online and published using Creative Commons Licensing)

- Familiar and aware of how they can be used
- Familiar but unsure of usage
- Heard the term but that's it
- Not at all familiar

Is your textbook an OER?

- Yes
- No
- I don't know

How many courses have you used OER textbooks in?

- I have used OER in two or more courses
- This is the first course I used OER in
- Never

Given the opportunity, would you use a low cost/no cost open educational resource (OER) that is peer reviewed and proven?

- Yes
- No

How likely are these deterrents to affect the use of open educational resources (OER) in your classroom?

	Very likely	Likely	Unlikely	Very unlikely
No time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ancillary Materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Not high quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficult to integrate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other: <input style="width: 100px; height: 15px;" type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What are the most important benefits to using OER?

- Low or no cost to students



Ability to edit the material

Ease of integration

Other:

**Supplemental Figure 2.** Student Survey on Open Educational Resources. This was distributed to two-year college biology students fall semester 2017.

**APPENDIX A:**

**Student Survey on Open Educational Resources**

*Given to fall semester 2017 students*

*Instructions:* Give students a link to the survey during the first half of the course. Submit a confirmation of survey completion for 1-5 bonus points (professor-dependent). This survey should take less than 15 minutes to complete.

What college are you currently attending (if attending more than one, list all colleges)?

Who is your professor for biology?

What is the title of the biology course you are currently taking?  
(example: General Biology 1)

What is the textbook you are assigned for the course?  
Include online homework programs (i.e. LRNR, Wiley Plus, Mastering, etc.)

Have you taken biology before?

- Yes, high school level biology less than five years ago.
- Yes, high school level biology more than five years ago.
- Yes, college level biology less than five years ago.
- Yes, college level biology more than five years ago.
- No, I've never taken a biology course at high school or college level.

What is your gender?

- Male
- Female

Have you received any loans to fund your education?

- Yes
- No

Have you received any Pell grants to fund your education?

- Yes
- No

How many terms have you completed in any college?

- This is my first semester
- 1-2
- 3-4
- 5-6
- More than 6

Do you work while you are attending school?

- No, I am not working for pay.

- Yes, I work 5-15 hours a week part-time.
- Yes, I work 15-30 hours a week part-time.
- Yes, I work close to full-time or full time (30 or more hours a week)

What is your cumulative college Grade Point Average (GPA) on a 4.0 scale?

- 0.0 – 2.0
- 2.1 - 2.5
- 2.6 - 3.0
- 3.1 - 3.5
- 3.6 - 4.0
- This is my first term

On average, how many courses do you take each semester?

- 1-2
- 3-4
- 5-6
- 7 or more

For courses with required textbooks, how often do you typically use the textbook?

- Never
- About once a month
- About once a week
- More than one time per week
- Unknown, as this is my first semester with required textbooks

In general, how often do you purchase the required textbooks for the courses you take?

- Never
- Rarely

- About half the time
- Often
- Always

How much do you typically spend total on textbooks each semester?

- Less than \$100
- \$101 - \$200
- \$201 - \$300
- \$301 - \$400
- More than \$400

Did you spend any money on textbooks for this course?

- Yes
- No

How much did you spend on textbooks for this course?

- Less than \$20
- \$21 - \$50
- \$51 - \$100
- \$101 - \$150
- More than \$150

Why did you NOT spend any money on textbooks for this course?

(select all that apply)

- The texts were online and free
- I borrowed someone else's or the library's texts
- I couldn't afford to purchase the texts
- The texts were sold out

Other reasons:

How often are you using the textbook for this course?

- I have never accessed or looked at it
- I looked at it once, but have not really used it since
- I reference it less than once a week
- I access it one or more times per week

Describe your current use of your textbook for this course.

- I read each chapter completely.
- I look at the figures.
- I read it only for topics I struggle with.
- I do not use it.
- Other:

How would you rate the quality of the textbook used for this course?

- WORSE than the quality of the texts in my other courses
- About the SAME AS the quality of the texts in my other courses
- BETTER than the quality of the texts in my other courses

Please briefly describe what made the quality of this course's textbook WORSE or BETTER than those in other courses.

Imagine a future course you are required to take. If two different sections of this course are offered by the same instructor during equally desirable time slots, but one section

uses free textbooks and the other uses traditional published textbooks, which section would you prefer to enroll in?

- I would enroll in the section that uses a TRADITIONAL, PUBLISHED TEXTBOOK
- I would enroll in the section that uses an OPEN, FREE TEXTBOOK
- I would have no preference