

OER Use at SDCCD Fall 2020 and 2021

Data Briefing 3/24/2022

Context

Textbook affordability is an important yet complex issue facing students nationwide. Course materials costs vary widely by program at SDCCD, with students with Health Sciences and Business majors, as well as African American, Filipino, and Latinx students reporting high impacts of course material costs on their educational experiences (Table 7). Student survey results and course fill rates indicate that students consider the cost of textbooks when making course decisions, and 13% of students indicated their grade was negatively impacted because they couldn't afford course materials.

To reduce course material costs, the Board of Trustees established a goal that 15% of SDCCD courses use Open Education Resources (OER), which are free for students to access electronically and can be reproduced more cheaply than traditional course materials. Further, the Board remains committed to Board Policy 3306, which encourages faculty to choose affordable and necessary course materials and requires that information regarding course materials be made available in a timely manner.

Data in this Briefing

This briefing presents findings about OER use in Fall 2020 and Fall 2021 from four data sources. The **credit** course registration system includes section-level OER data available to students at time of registration, faculty, and administrators. For the credit colleges, section-level OER data including enrollments, sections, fill rates, and course outcomes, as well as data used to construct survey samples, came from the credit college course registration system. Data for non-credit OER came from a survey conducted by the SDCCD OER/Zero Textbook Costs Faculty Coordinator.

Metric	Source	Description
OER sections, enrollments, fill rates, success rates, completion rates	Course attribute visible in course registration system; enrollment data from SDCCD Information System. Provided by SDCCD OIER.	Sections with the "OER" indicator visible on the course registration system were identified by the SDCCD OIER. Data regarding sections, enrollments, fill rates, and course outcomes in OER sections was developed based on this indicator.
Faculty Perception of OER Use at Credit Colleges	Faculty Survey, Fall 2021. Provided by SDCCD OIER.	427 invitations, 87 respondents, 20% Response Rate. Survey active Nov. 3, 2021 to Dec. 13, 2021.
Student Perception of OER Use at Credit Colleges	Student Survey, Fall 2021. Provided by SDCCD OIER.	2,000 invitations, 136 respondents, 7% response rate. Survey active Nov. 3, 2021 to Dec. 15, 2021.
OER Use at the College of Continuing Education	Faculty Survey, Fall 2021. Provided by SDCCE OER/Zero Textbook Costs Faculty Coordinator, Diana Vera-Alba.	Faculty from every department invited, 57 respondents.

Definitions

- OER: Open Educational Resources. Teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others
- **OER Sections:** Sections that appear in the course registration system with an OER attribute.
- OER Enrollments: An enrollment in a section that appears in the course registration system
 with an OER attribute. Enrollments are duplicated, meaning one student in two courses is
 counted twice.
- **Fill Rate:** Enrollment in a section divided by that section's capacity.
- Course Completion Rate: The count of enrollments in a section that received an A, B, C, D, F, P, or NP grade out of total enrollments as of census.
- Course Success Rate: The count of enrollments in a section that received an A, B, C, or P grade out of total enrollments as of census.

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Summary

OER use appears to be growing at the credit colleges, with a 39% increase in the number of registration system-designated OER sections and 22% increase enrollments in those sections from Fall 2020 to Fall 2021. In Fall 2021, there were 273 OER sections at the credit colleges in Fall 2021 (City: 55, Mesa: 140, Miramar: 78), or 7% of sections across the colleges (City: 5%, Mesa: 8%, Miramar: 8%).

Key Finding 1) OER use at the credit colleges, as designated by a course attribute in the registration system, is growing, accounting for 7% of sections and 9% of enrollments in Fall 2021. Further, survey results suggest that OER use is more prevalent than is indicated by course designations in the registration system, and has increased compared to three years ago.

See Metrics Section 1: OER Use, Fall Terms for more detail.

- Among the subjects with the highest rates of OER use as indicated by the course registration system, more than 1 in 3 sections used OER materials in Fall 2021 (Child Development and Aviation Maintenance). Subjects in which more than 1 in 5 sections used OER were Aviation, Geology, and Sociology. See Metrics Section 2: OER Use by Subject for more detail.
- Courses with an OER designation in the course schedule have higher fill rates than non-OER sections.

Key Finding 2) While fill rates are slightly higher for OER sections than non-OER sections, there is evidence that improved communication and messaging around OER use in a section may encourage more even students to enroll in these courses.

See Metrics Section 3: Fill Rates for more detail.

- Sections with an OER designation in the course schedule showed slightly higher success rates than non-OER sections. See Metrics Section 4: Completion and Success Rates for more detail.
- Overall, there was moderate agreement among students and faculty that OER use has
 contributed positively to their educational experiences. The level of agreement for
 students (3.51) was remarkably similar to that of faculty (3.49). See Metrics Section 5:
 Student and Faculty Perceptions of OER for more detail.
- Student responses about the course material costs on their educational experience generally indicated a low level of impact.

Key Finding 3) Significantly higher (more negative) levels of impact were reported by African American, Filipino, and Latinx students, as well as students with majors in the Health Sciences, other career, and Business areas. Students at City and Miramar Colleges reported higher levels of course material cost impact than students at Mesa did.

See Metrics Section 6: Fill Rates for more detail.

 Textbooks, digital media, and journal articles were the most commonly reported types of OER used by both students and faculty. See Metrics Section 7: Types of OER Used for more detail.

Findings and Next Steps

Key Finding

- 1) OER use at the credit colleges, as designated by a course attribute in the registration system, is growing, accounting for 7% of sections and 9% of enrollments in Fall 2021. Further, survey results suggest that OER use is more prevalent than is indicated by course designations in the registration system, and has increased compared to three years ago.
- 2) While fill rates are slightly higher for OER sections than non-OER sections, there is evidence that improved communication and messaging around OER use in a section may encourage more even students to enroll in these courses.
- 3) Significantly higher (more negative) levels of course material cost impact were reported by African American, Filipino, and Latinx students, as well as students with majors in the Health Sciences, other career, and Business areas. Students at City and Miramar Colleges reported higher levels of course material cost impact than students at Mesa did.

Next Steps

Increased messaging to students in online orientations and throughout the registration process about the use of Open Educational Resources may further help students navigate away from courses with higher materials costs.

It appears likely that the official OER designation is a conservative measure of the use of OER in courses. A more comprehensive survey of faculty (with a larger sample) about OER use may provide data that could inform messaging to students about the credit colleges' attempts to lower costs for students.

This messaging may be particularly valuable to the groups students identified in key finding 3 who reported higher impacts of course materials costs.

Metrics

1. OER Use, Fall Terms: OER use appears to be growing at the credit colleges, with a 39% increase in the number of registration system-designated OER sections and 22% increase enrollments in those sections from Fall 2020 to Fall 2021.

In Fall 2021, there were 273 OER sections at the credit colleges in Fall 2021 (City: 55, Mesa: 140, Miramar: 78), or 7% of sections across the colleges (City: 5%, Mesa: 8%, Miramar: 8%). Survey results indicate a higher proportion of OER sections, with nearly two-thirds of both students and faculty indicating their sections use OER materials.

Key Finding #1: OER use at the credit colleges, as designated by a course attribute in the registration system, is growing, accounting for 7% of sections and 9% of enrollments in Fall 2021. Further, survey results suggest that OER use is more prevalent than is indicated by course designations in the registration system, and has increased compared to three years ago.

Two-thirds of both faculty and students surveyed indicated their courses at least sometimes use OER (see Figures 2 and 3). This is an increase from a previous faculty survey (Spring 2019), when 32% of respondents indicated they used OER. While there is a difference between occasional use OER and a course designated as OER by the course registration system, evidence in the survey nonetheless suggests more than 7% of sections are making significant use of OER.

Among faculty, between 16% and 23% of respondents indicated they always use OER textbooks, readings, journal articles, and digital media. 45% of faculty said they used OER in all their sections in Fall 2021, and 23% said they only use OER. Among students, 19% strongly agreed that their courses use OER as required materials and 17% strongly agreed their courses use supplemental OER courses.

While students in OER sections were over-represented among respondents, between 45% and 49% of students in sections that did <u>not</u> use OER (sections without an OER designation in the registration system) indicated their classes use supplemental or required OER (compared to between 61% and 63% of students in OER sections). Faculty teaching OER sections were similarly over-represented among respondents; nonetheless, responses from both those teaching an OER section and those not teaching an OER section indicate high levels of OER use (77% and 47%, respectively).

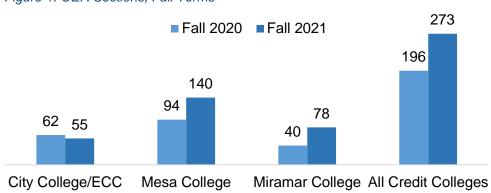


Figure 1. OER Sections, Fall Terms

Table 1. OER Sections, Fall Terms, by College

		Fall	2020	Fall 2021		% Change in	
		Count	%	Count	%	Section Count	
	Not OER	1,098	95%	1,044	95%	-5%	
City	OER	62	5%	55	5%	-11%	
	Total	1,160	100%	1,099	100%	-5%	
	Not OER	1,728	95%	1,620	92%	-6%	
Mesa	OER	94	5%	140	8%	49%	
	Total	1,822	100%	1,760	100%	-3%	
	Not OER	976	96%	936	92%	-4%	
Miramar	OER	40	4%	78	8%	95%	
	Total	1,016	100%	1,014	100%	0%	
All Colleges	Not OER	3,802	95%	3,600	93%	-5%	
	OER	196	5%	273	7%	39%	
Colleges	Total	3,998	100%	3,873	100%	-3%	

Note. Excludes cancelled sections and tutoring.

Table 2. OER and non-OER Enrollments, by Term

		Fall 2020		Fall 2021		% Change in	
			%	Count	%	Section Count	
	Not OER	28,016	93%	24,335	94%	-13%	
City	OER	2,247	7%	1,635	6%	-27%	
	Total	30,263	100%	25,970	100%	-14%	
	Not OER	44,911	93%	38,123	90%	-15%	
Mesa	OER	3,177	7%	4,199	10%	32%	
	Total	48,088	100%	42,322	100%	-12%	
	Not OER	26,646	95%	23,621	91%	-11%	
Miramar	OER	1,346	5%	2,435	9%	81%	
	Total	27,992	100%	26,056	100%	-7%	
	Not OER	99,573	94%	86,079	91%	-14%	
All Colleges	OER	6,770	6%	8,269	9%	22%	
Colleges	Total	106,343	100%	94,348	100%	-11%	

Note 1. Includes valid enrollments as of end-of-term. Excludes tutoring.

Note 2. Enrollments are duplicated, meaning 1 students enrolled in 2 courses counts twice.

Figure 2. Use of OER, Student Responses

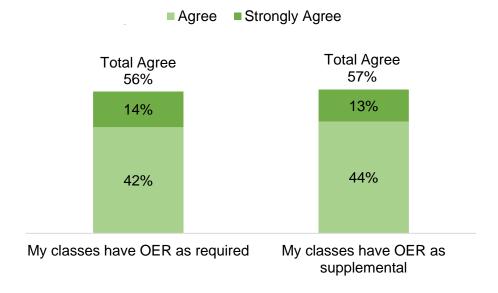
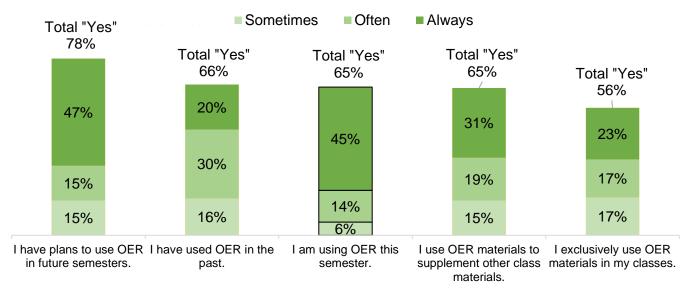


Figure 3. OER Use, Faculty Responses



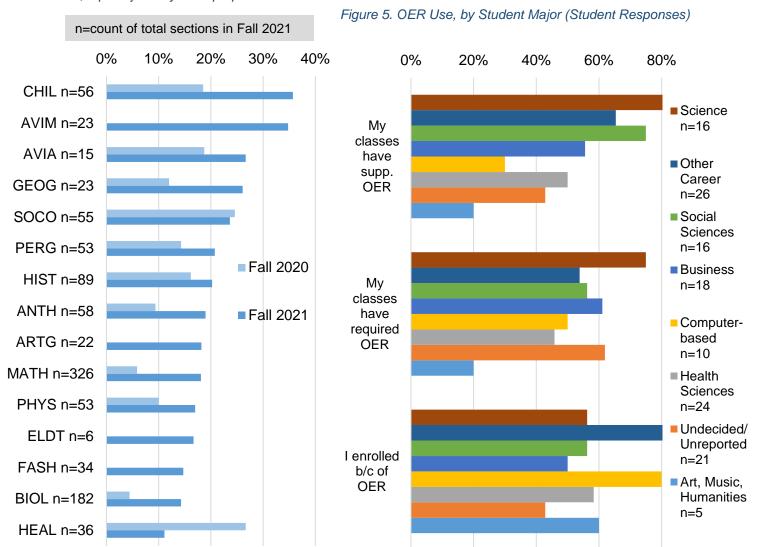
2. OER Use by Subject: Among the subjects with the highest rates of OER use as indicated by the course registration system, more than 1 in 3 sections used OER materials in Fall 2021 (Child Development and Aviation Maintenance). Subjects in which more than 1 in 5 sections used OER were Aviation, Geology, and Sociology.

Student survey results indicate that students with majors in Career Technical Education (CTE) fields, such as Aviation courses, choose a course because of its OER status: 81% of students with a major tied directly to an occupation (such as Aviation, Child Development, Interior Design, etc) said they enrolled in a the course because of its OER status.

In addition to students with majors in CTE fields, students with a Science and Social Science major also reported their courses use supplemental and required OER.

By section count, the top 5 OER subjects in Fall 2021 were Math (59 OER sections), Biology (26), History (18), Child Development (20), and Sociology (13).

Figure 4. Percent of sections in subject that were OER in Fall 2021, top subjects by OER proportion



3. Fill Rates: Courses with an OER designation in the course schedule have higher fill rates than non-OER sections.

OER Sections had higher fill rates at each of the colleges in both Fall 2020 and Fall 2021. In Fall 2021, the difference was most notable at City College and Miramar College (+7%). Students at these colleges report more negative impacts of course material costs on their educational experiences (see Table 7), and higher fill rates in OER sections likely reflect their attempts to navigate away from courses that may incur additional costs.

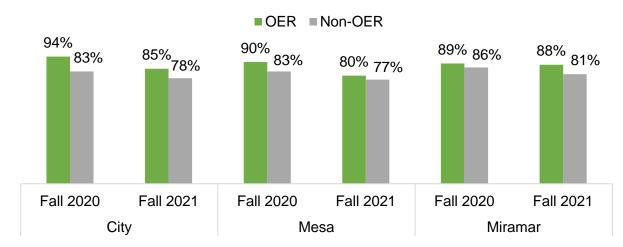


Figure 6. OER Section Fill Rates, Fall Terms

Note. Excludes sections with a capacity less than 10, tutoring, apprenticeship, in-service/public safety, and non-credit sections. Non-OER sections includes all other sections that did not have an OER marker on the course schedule.

Key Finding 2: While fill rates are slightly higher for OER sections than non-OER sections, there is evidence that improved communication and messaging around OER use in a section may encourage more even students to enroll in these courses.

35% of students surveyed said they learned their course used OER from the online schedule, compared to 53% who said they learned from an instructor announcement, and 46% who said they learned from the class syllabus.

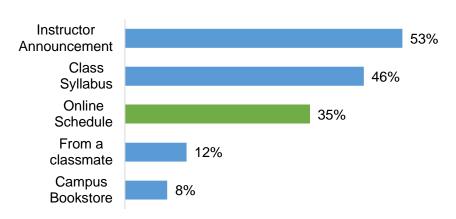


Figure 7. How did you learn your course used OER, Student Survey Results

4. Completion and Success Rates: Sections with an OER designation in the course schedule showed slightly higher success rates than non-OER sections.

While completion rates were comparable between OER and non-OER sections, success rates were 2% higher across the colleges (City: +9%, Mesa: +1%, Miramar: no difference). This comparison excludes courses which did not have both OER and non-OER sections in a given term

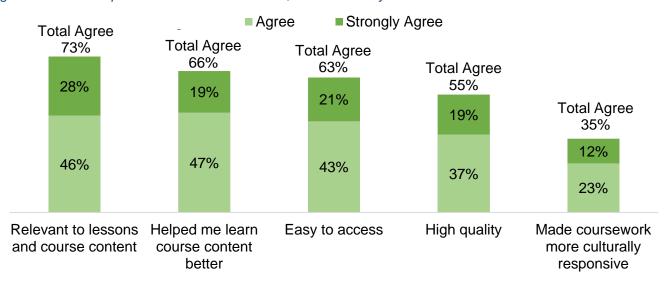
Higher success rates in OER courses align with student survey results, which indicate that a majority of students find that OER in their courses is relevant, helps them learn the course content better, is easy to access, and is high quality. See Table 5 for more detail by group. This response pattern was largely consistent across demographic groups, and was most notable among cis male students and students with a major in the Sciences, and least notable among students in a Business major or who had undecided/unreported majors.

Table 3. Completion and Success Rates in OER and non-OER courses

		Fall 2020		Fall 2021		Fall 21 OER and Non- OER Difference	
		Completion	Success	Completion	Success	Completion	Success
	OER	86%	68%	86%	70%	3%	9%
City	Non-OER	84%	64%	83%	61%	3/0	
	Overall	84%	64%	83%	63%		
	OER	87%	73%	86%	69%	-1%	1%
Mesa	Non-OER	87%	70%	87%	68%		
	Overall	87%	71%	86%	68%		
	OER	87%	72%	88%	74%	0%	0%
Miramar	Non-OER	87%	73%	88%	74%		076
	Overall	87%	73%	88%	74%		
All One all	OER	86%	71%	87%	70%	1%	2%
All Credit Colleges	Non-OER	86%	69%	86%	68%	1 70	
Colleges	Overall	86%	70%	86%	68%		

Note. Excludes courses without both OER and non-OER sections in the same term.

Figure 8. Positive Experiences with OER Materials, Student Survey Results



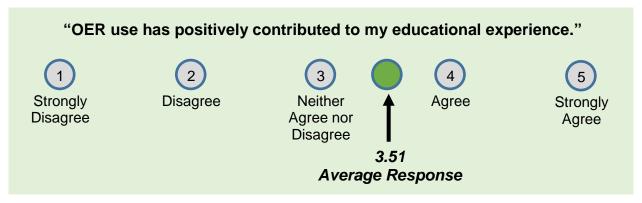
5. Student and Faculty Perceptions of OER: Overall, there was moderate agreement among students and faculty that OER use has contributed positively to their educational experiences. The level of agreement for students (3.51) was remarkably similar to that of faculty (3.49).

The student survey included five items for which agreement indicated a positive perception of OER use. The average response across all respondents was 3.51 out of 5, indicating a moderate level of agreement. This average was higher for the 83 respondents enrolled in a section designated by the course schedule as using OER (3.62) than for the 53 respondents who were not (3.32).

Positive perceptions of OER use among students was strongest among cis men (3.88) and students with a science-related major (3.83).

Conversely, respondents were not likely to agree with items about negative experiences with OER such as "I prefer traditional materials to OER" (17% agreed) and OER is my classes is out-of-date or irrelevant" (10% agreed). 28% of respondents did agree that they had technical challenges in accessing OER, indicating technical support from faculty or their departments may still be beneficial for some students. See Figure 10 for more detail.

Figure 9. Average Student Responses, Positive OER Use



The faculty survey included six items for which agreement indicated a positive perception of OER use. The average response across all respondents was 3.49 out of 5, indicating a moderate level of agreement. This average was higher for the 53 respondents taught in a section designated by the course schedule as using OER (3.58) than for the 34 respondents who were not (3.35). See Table 6 for more detail.

Figure 10. Average Faculty Responses, Positive OER Use

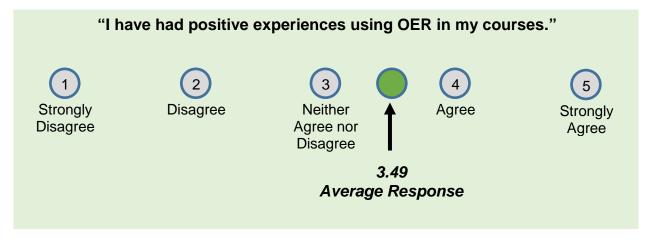


Table 4. Positive Experience with OER Use, Student Survey Results

Domain	Items	Category	Group	Average	Count
		Overall		3.51	136
		Callaga	City	3.44	31
		College Enrolled	Mesa	3.47	63
		Lillolled	Miramar	3.60	33
		Gender	Cis Man	3.88	32
	OER in my	Gender	Cis Woman	3.48	80
	classes		Latinx	3.42	47
			White	3.57	46
	is high quality.	Ethnicity	Asian	3.62	13
The use of OER	is relevant.	Ethnicity	African American	3.73	8
materials in my			Filipino	3.52	7
courses has	has helped me learn betterwas easy to accesshas made my classes more culturally		Multiple Ethnicities	3.66	7
positively contributed to		Orientation Enrolled in OER	Straight	3.56	83
my experience.			Gay	3.75	13
1=Disagree			Decline to state	2.87*	12
5=Agree			Asexual	3.78	10
			Bisexual	3.56	9
			Yes	3.62	83
			No	3.32	53
	responsive.		Business	3.23	18
		Major	Health Sciences	3.41	24
		Group with	Other Career	3.66	26
		15+	Science	3.83	16
		respondents	Social Sciences	3.63	16
			Undecided/Unreported	3.27	21

Note. See Table 7 in the Appendix for majors included in each Major Group.

Figure 11. Challenges to OER Use, Student Survey Results

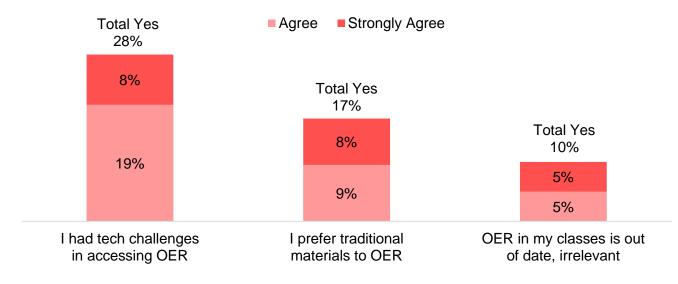


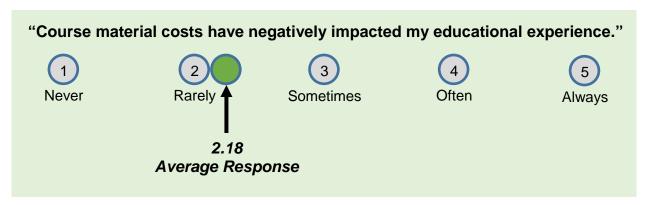
Table 5. Positive Experience with OER Use, Faculty Survey Results

Domain	Items	Category	Group	Average	Count
	OER materials arereadily availableof high qualityrelevant to my classesbeneficial to my studentsbeneficial to planning and curriculumhelpful in implementing culturally responsive pedagogy.	Overall		3.49	87
I have had		Taught At	City	3.38	26
positive			Mesa	3.42	36
experiences using OER in my courses 1=Disagree 5=Agree			Miramar	3.67	22
			Multiple	4.00	3
		Taught pre COVID	Yes	3.59	36
			No	3.42	50
		Taught OER	Yes	3.58	53
		Section Fall 21	No	3.35	34

6. Course Material Cost Impacts: While student responses about the course material costs on their educational experience generally indicated a low level of impact, significantly higher (more negative) levels of impact were reported by African American, Filipino, and Latinx students, as well as students with majors in the Health Sciences, other career¹, and Business areas.

The student survey included six items for which agreement indicated that their educational experiences were negatively impacted by the cost of course materials. The average response across all respondents was 2.18 out of 5, indicating an overall low impact of course material costs on students' educational experiences. This average was higher for the 83 respondents enrolled in a section designated by the course schedule as using OER (3.62) than for the 53 respondents who were not (3.32). **There were a number of notable trends in these responses**.

Figure 12. Average Student Responses, Course Material Costs



Key Finding 3: The groups below reported higher levels of impact on their educational experiences than their peers. For more detail, see Table 7.

- By Ethnicity: African American, Filipino, and Latinx students
- By Major area: students with Health Sciences, other Career, and Business majors.
- By course enrollment: Students not enrolled in an OER course
- By college: Students at Miramar and City Colleges

¹ The "Other Career" major group was created to assist analysis, and included student majors of Aviation, Child Development, Culinary Arts/Management, Fashion, Hospitality, Interior Design, Machine Technology, Paralegal, and Science in Diesel Technology.

Table 6. Impact of Course Material Costs, Student Survey Responses

Domain	Items	Category	Group	Averag e	Count
Domain	Items	Overall	Group	2.18	136
		Overall	City	2.42	31
		College	Mesa	1.99	63
	I have dropped a class	Enrolled	Miramar	2.30	33
	because of the cost of	0 1	Cis Man	2.20	32
	materials.	Gender	Cis Woman	2.29	80
	I did not purchase materials		Latinx	2.41	47
	for a class because they of		White	1.88	46
"Course	the cost.	Ethnicity	Asian	1.91	13
material costs	My grade was negatively impacted because I could not afford materials.		African American	3.17	8
have			Filipino	2.83	7
negatively			Multiple Ethnicities	1.62	7
impacted my educational experience." 1 = Never 5 = Always	I enrolled in fewer classes than I wanted to because of the cost of materials. The cost of course materials prevented me from enrolling in courses I am interested in.	Orientation Enrolled in	Straight	2.25	83
			Gay	2.21	13
			Decline to state	2.06	12
			Asexual	2.22	10
			Bisexual	2.56	9
			Yes	2.06	83
	The cost of course materials	OER	No	2.36	53
	prevented me from enrolling		Business	2.41	18
	in courses I am required to	Maria	Health Sciences	2.58	10
	take.	Major Group with 15+	Other Career	2.49	24
		respondents	Science	1.36	26
		•	Social Sciences	2.19	16
			Undecided/Unreported	1.77	16

Note. See Table 7 in the Appendix for majors included in each Major Group.

7. Types of OER Used: Textbooks, digital media, and journal articles were the most commonly reported types of OER used by both students and faculty.

Figure 13. Types of OER used, Student Survey Results

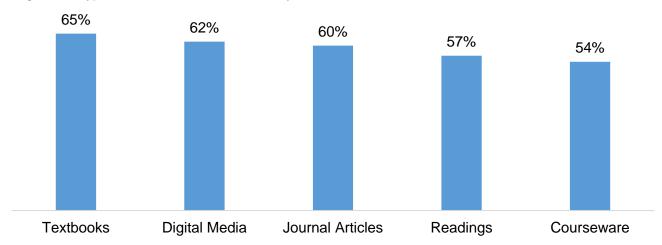
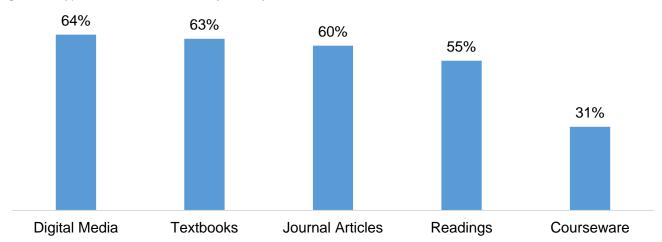


Figure 14. Types of OER used, Faculty Survey Results



Appendix: Contents

Student Survey Population, Sample, and Respondents

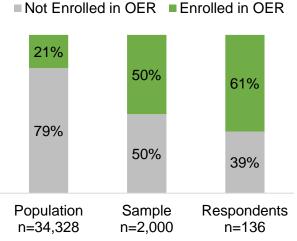
A survey was distributed to 2,000 students enrolled at San Diego City, Mesa, and Miramar Colleges in Fall 2021. The stratified sample of 2,000 students was selected from a population of 34,328.

Invitations to the survey were distributed to the sample on November 3, 2021. The survey remained active for six weeks, through December 15, 2021. Three reminders were sent to those who had not started the survey during that period. Of the 2,000 invitations, 136 students responded to the survey, or a 7% response rate.

Stratified sampling was used to produce similar representation of two sub-populations of students among respondents:

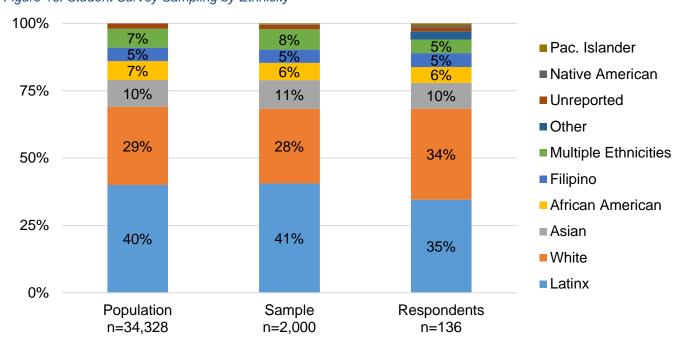
- Enrolled in a section which used OER, as designated by the course registration system
- Did not enroll in a section which used OER, as designated by the course registration system
- 1,000 students were randomly selected from each of the above sub-populations, resulting in a total sample of 2,000 students. Representation within each sub-population was compared to the population to ensure similar representation based on age, ethnicity, gender, and which colleges students attended in the Fall term. Representation within each sub-population was within 3% of representation in the population.

Figure 15. Student Survey Sampling



The over-sampling of those who enrolled in OER sections was meant to increase the saturation of OER experiences in the response set to gain a more complete understanding of the perception of OER use. Where survey results are used to inform the understanding of the prevalence of OER use, response patterns are compared between those who did enroll in OER sections and those who did not.

Figure 16. Student Survey Sampling by Ethnicity



Faculty Survey Population, Sample, and Respondents

A survey was distributed to 427 faculty who taught at San Diego City, Mesa, and Miramar Colleges in Fall 2021. The stratified sample of 427 faculty was selected from a population of 1,442.

Invitations to the survey were distributed to the sample on November 3, 2020. The survey remained active for five weeks, through December 13, 2021. Two reminders were sent to those who had not started the survey during that period. Of the 427 invitations, 87 faculty responded to the survey, or a 20% response rate.

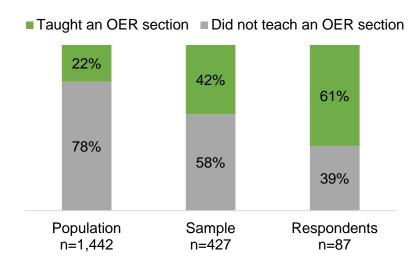


Figure 17. Faculty Survey Sampling

Stratified sampling was used to produce similar representation of two sub-populations of faculty among respondents:

- Taught a section which used OER, as designated by the course registration system
- Taught a section which used OER, as designated by the course registration system

427 students were randomly selected from each of the above sub-populations, resulting in a total sample of 427 faculty.

The over-sampling of those who taught an OER sections was meant to increase the saturation of OER experiences in the response set to gain a more complete understanding of the perception of OER use. Where survey results are used to inform the understanding of the prevalence of OER use, response patterns are compared between those who did enroll in OER sections and those who did not.

Table 7. Major Groups (for analysis) and Student Majors

Major Group	Student Major	Major Group	Student Major
	Art		Aviation
Ant Marsin O	Dance		Child Development
Art, Music, & Humanities	English		Culinary Arts/Management
Tumanities	French		Fashion
	Spanish	Other Career	Hospitality
	Accounting		Interior Design
	Agriculture and Business		Machine Technology
Business	Business		Paralegal
Dusiness	Business Administration		Science in Diesel Tech.
	Entrepreneurship		Astrophysics
	Marketing		Biology
0	Computer and Info. Sciences	Science	Chemical engineering
Computer- based Program	Cyber Security	Science	Chemistry
based Flogram	Graphic design		Engineering
	Allied Health		Marine Biology
	Dental assistant		Anthropology
	Dental Hygiene		Applied Linguistics
1.1	Kinesiology		Communications
Health Sciences	MLTT	Social	Political Science
Ociences	Nursing	Sciences	Psychology
	Nutrition		Social Science
	Public health		Social Work
	Radiology technology		Sociology