

The Impact of Typical Textbook Behaviors on Satisfaction with Zero Textbook Cost Materials

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ABSTRACT

Open Educational Resources (OER) and Zero Textbook Cost (ZTC) courses have the ability to decrease the costs of higher education and provide more equitable access to learning materials. Students at a regional public master's-level institution enrolled in ZTC courses, some of which used OER, were surveyed about their satisfaction and use of ZTC materials as compared with their commercial textbook and course material use. Students generally rated high levels of satisfaction with the OER/ZTC materials. A high level of satisfaction with OER/ZTC materials is consistent with other findings. Students' attitudes and behaviors with commercial textbooks predict their OER/ZTC satisfaction. Students who are more likely to have access to textbooks in their typical courses and where costs of textbooks are less of a barrier, are more satisfied with OER/ZTC materials than those who are less likely to have access, or where costs are more of a barrier. This finding counters to what one would expect if providing more equitable access was a key influence on student satisfaction with OER/ZTC courses. These findings suggest that better understanding the relationships students have with traditional materials could improve student satisfaction and use of OER/ZTC materials.

Keywords: Open Educational Resources (OER), Zero Textbook Costs (ZTC), student survey, student satisfaction, equitable access

El impacto de los comportamientos típicos de los libros de texto en la satisfacción con materiales de costo cero para libros de texto

RESUMEN

Los cursos de Recursos Educativos Abiertos (REA) y Costo Cero de Libros de Texto (ZTC) tienen la capacidad de disminuir los costos de la educación superior y brindar un acceso más equitativo a

los materiales de aprendizaje. Los estudiantes de una institución pública regional a nivel de maestría inscritos en cursos de ZTC, algunos de los cuales usaban REA, fueron encuestados sobre su satisfacción y uso de los materiales de ZTC en comparación con su uso comercial de libros de texto y material del curso. Los estudiantes generalmente calificaron altos niveles de satisfacción con los materiales OER / ZTC. Un alto nivel de satisfacción con los materiales REA / ZTC es consistente con otros hallazgos. Las actitudes y comportamientos de los estudiantes con los libros de texto comerciales predicen su satisfacción con los REA / ZTC. Los estudiantes que tienen más probabilidades de tener acceso a libros de texto en sus cursos de educación general y donde los costos de los libros de texto son una barrera menor, están más satisfechos con los materiales REA / ZTC que aquellos que tienen menos probabilidades de tener acceso, o donde los costos son más altos. una barrera. Este hallazgo contradice lo que cabría esperar si proporcionar un acceso más equitativo fuera una influencia clave en la satisfacción de los estudiantes con los cursos OER / ZTC. Estos hallazgos sugieren que una mejor comprensión de las relaciones que los estudiantes tienen con los materiales tradicionales podría mejorar la satisfacción de los estudiantes y el uso de los materiales REA / ZTC.

Palabras clave: Recursos educativos abiertos (REA), Cero costos de libros de texto (ZTC), encuesta de estudiantes, satisfacción de los estudiantes, acceso equitativo

典型课本行为对零课本费用材料满意度产生的影响

摘要

开发教育资源 (OER) 和零课本费用 (ZTC) 课程能够减少高等教育成本, 并提供更公平的学习材料获取。一所地区公立院校的研究生参与了ZTC课程 (其中一些人曾使用过OER), 并接受了有关与商业课本和课程材料使用相比其对ZTC材料的满意度和使用情况的调研。学生普遍对OER/ZTC材料的满意度较高。其他研究也得出了与OER/ZTC材料高满意度一致的结论。学生对商业课本的态度和行为能预测其对OER/ZTC的满意度。在一般教育课程中更有可能获取课本且更能支付课本费用的学生, 与不太可能获取课本、或支付课本费用存在困难的学生相比, 前者对OER/ZTC的满意度更高。该研究发现与预期相反 (即假设提供更公平的课本获取是学生OER/ZTC课程满意度的关键影响因素, 则会有哪些

预期)。上述研究发现暗示，对学生和传统材料之间的关系进行更深入的理解，能提高学生对OER/ZTC材料的满意度和使用情况。

关键词：开放教育资源（OER），零课本费用（ZTC），学生调研，学生满意度，公平获取

Introduction

The cost of college is rising, and virtually all courses require textbook materials (Allen & Seaman, 2014). Complicating this further, Martin et al. (2017) found that students chose not to purchase a textbook and try to pass the class without access to materials. Individual financial situations of students play an important role in this decision with more than one-third of students reporting food insecurity and more than one-third of students reporting housing insecurity in a survey of university students by Goldrick-Rab et al. (2018). The decision to not purchase textbooks can lead to problems with ill-prepared students in class and low performance on assessment measures. Spica and Bidix (pre-print) found nearly two-thirds of students reported delaying textbook purchasing, and over three percent attribute course failure to their inability to purchase a textbook. This is corroborated by Jenkins et al. (2020) in their exploration of additional textbook access barriers affecting underserved college students. These decisions also lead to campus-wide faculty adoption initiatives like the work of Brandle et al. (2019) in the CUNY system among others.

Open Educational Resources (OER) and Zero Textbook Cost (ZTC) adoption programs have become more prevalent on higher education campuses partly to counteract these rising costs, and partly to connect students with access to course materials. OpenStax (2018) defines OER as openly published, remixable textbooks and materials connecting faculty and student-learners with materials for free. While OER indicates the author or publisher allows users to download, share, edit, remix, and re-post the textbook and/or materials, ZTC courses use published materials that may not be remixable, library resources (such as articles, books, and materials). ZTC also indicates websites, videos, government websites, and more. ZTC does not carry a direct cost to students, the cost burden instead falls to institutional libraries, government organizations, and publishers with open access.

For public liberal arts institutions like Millersville University, reducing the cost of attendance and increasing textbook and material access offer strong motivations to develop incentivized adoption programs. Arguments for reducing the cost of attendance to students led to Administrative support of an OER/ZTC incentivized adoption

program. Argument for increasing student access to course materials led to large numbers of applicants to the incentivized adoption program. While OER and ZTC materials reduce student cost of attendance, [Sheu and Grissett \(2020\)](#) found that quality and cost both matter to student perceptions. For an institution with strong ties to our public mission, understanding the relationship between student perceptions of materials, student ability to access materials, and student attitudes about the usefulness of materials helps situate the impact of free course materials on student's ability to pass a course.

Literature Review

Research on student perceptions of OER/ZTC material is quickly growing ([Hilton, 2016 & 2020](#) provide extensive overviews). There are diverse findings in efficacy and use, but overwhelmingly, previous research has found that ZTC materials save students money ([Bliss et al., 2013](#); [Nusbaum, Cuttler, & Swindell, 2020](#); [Pfannenstiel et al., 2020](#)). Previous research has explored the effect of ZTC materials on student economics and student retention and grades. [Pina and Moran \(2018\)](#) found an economic impact, students saved money, but they found no significant difference on grades and retention in the courses studied. Unlike Pina and Moran, [Colvard et al. \(2018\)](#) found OER positively impacts grades and completion rates. Other researchers explored the impact of OER adoption on student learning performance ([Croteau, 2017](#); [Clinton and Khan, 2019](#); [Lin, 2019](#)). As

noted by [Hilton \(2020\)](#), the research on efficacy includes a wide range, and varied set of data.

[Brandle et al. \(2019\)](#) report on student positive impressions of ZTC materials, and student ability to access course materials during the first week of class. [Hilton \(2020\)](#) reports on perception studies and the huge variety in variables within perception datasets. [Brandle et al. \(2019\)](#) also point out that students may struggle to access technology that allows them to access ZTC materials.

This wide set of findings point to questions about the approaches and research questions being asked. Importantly, [Grimaldi et al. \(2019\)](#) raise important questions about why these findings have so many different results, raising the idea of an access hypothesis. First, Grimaldi et al. point out that “access [as] the primary mechanism for how OER might affect learning outcomes” then the variety is expected, and the approach not well-suited. As they note, a typical educational intervention impacts all students enrolled in the course. The appeal of OER is access to the textbook on the first day of classes for all students. Access on the first day as ‘educational treatment’ is only new for a subset of the students - students who don't purchase textbooks, students who can't afford to purchase textbooks, students who choose not to purchase immediately, etc.

Access to course materials is complex. While cost is one factor, ideas held by students about the usefulness of textbooks, the usefulness of textbooks

to their learning in a particular class, and more complicate access. Even with OER, students who struggle to pay for textbook materials may also not have technology tools to access the materials. To complicate that further, prior beliefs about textbooks, and prior experiences with passing courses without purchasing textbooks may influence student perceptions of the ZTC materials adopted.

Building on this existing research, this study explores student satisfaction with ZTC materials. We asked the following research questions:

- RQ1: Did gender significantly impact student satisfaction with ZTC, the usefulness of materials/textbooks, whether they can access or if they avoid purchasing textbooks?
- RQ2: What is the impact of costs and access on ZTC satisfaction?
- RQ3: Did student beliefs about their ability to pass a class without textbooks influence their satisfaction with OER?
- RQ4: Did expected grade predict student satisfaction with OER, the usefulness of materials/textbooks, whether they can access or if they avoid purchasing textbooks?

Methodology

Purpose

The purpose of this study was to examine the relationship between Zero Textbook Costs (ZTC) resources, student ability to ac-

cess and student attitudes about the usefulness of textbook/class materials. The study also examined how much students are spending on textbooks and if this interferes with their ability to obtain the materials. The full student perception survey is available in [Appendix A](#)

Design

An expedited IRB application was approved by the Millersville IRB in September 2019. Students were informed about the purpose of the study and were invited to provide their consent before data collection occurred. Data was deleted for students who did not consent to participation but completed the survey anyway. This study was pre-experimental, cross-sectional, retrospective, and self-report.

Sampling and Data Collection

Students from 21 courses during the Fall 2019 semester were invited electronically to participate in the study for an approximate total of 1142 of students invited which resulted in 469 surveys completed. After duplicate or blank entries were removed by listwise deletion, 442 students remained.

Variables

Materials

Student attitudes were assessed by two questions regarding the (1) usefulness of textbooks or class materials to improve their grades or to (2) help them learn. Participants can respond with a 6-point Likert Scale with Strongly Disagree to Strongly Agree.

Total scores ranged from 2 to 12 with higher numbers indicating a more positive view of textbooks usefulness. The materials total composite variable has excellent internal consistency ($\alpha=.91$, Pfannenstiel, et al., under review).

Pass

Student attitudes were assessed by a single question regarding whether or not they can pass any class without the use of textbooks/materials. Participants can respond with a 6-point Likert Scale with Strongly Disagree to Strongly Agree. Scores ranged from 1 to 6 with higher numbers indicating a more positive view of textbooks usefulness and their inability to pass a class without them and lower numbers indicating student confidence that they did not need textbook/materials to pass any class.

Access

Student access was assessed by two questions that asked about their access to all the required textbooks/materials: (1) I always purchase...(2) I have access... to all the required textbooks/materials. Participants can respond with a 6-point Likert Scale with Strongly Disagree to Strongly Agree. Higher scores indicated higher access with scores ranging from 2 to 12. The measure had adequate internal reliability ($\alpha=.74$, Pfannenstiel, et al., under review).

Costs

Student perceptions of how cost impacted their access to textbooks was assessed by two questions: (1) Costs have led me to decline purchasing..., (2) I

avoid paying for... all the required textbooks/materials. Participants can respond with a 6-point Likert Scale with Strongly Disagree to Strongly Agree. Higher scores indicated a higher likelihood that cost did not interfere with student purchase or accessing textbooks with scores ranging from 2 to 12. The measure had adequate internal reliability ($\alpha=.69$, Pfannenstiel, et al., under review).

ZTC/OER Satisfaction

Student satisfaction with the textbooks/materials was assessed with 11 questions that were developed by the authors. Questions included assessing satisfaction, use, ease, quality, effectiveness of ZTC. Participants can respond with a 6-point Likert Scale with Strongly Disagree to Strongly Agree. Higher scores indicated higher satisfaction. The measure had excellent internal reliability ($\alpha=.94$, Pfannenstiel, et al., under review).

Class Category

Students reported which class that they participated in that used ZTC materials. After cleaning the data, specific classes were identified (i.e., Communication 100, Communication 301) but these courses were collapsed into type or category of classes (i.e., Communication). If student input was unclear and did not provide sufficient information to determine the course, the specific course or category would be labeled as "unknown".

Descriptive Statistics

ZTC scores ranged significantly by gender and class category. Women had the highest level of satisfaction with the ZTC materials ($M=55.2$, $SD=10.2$, $N=306$) when

compared to men ($M=51.6$, $SD=10.7$, $N=123$) and transgender students ($M=48.8$, $SD=23.5$, $N=4$). See Table 1 for gender and class category on ZTC satisfaction scores. The bolded numbers are the highest and lowest numbers in that section.

Table 1: Gender and class category on ZTC satisfaction

Class category	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
	Total			Male			Female			Other		
Unknown	53.7	7.7	13	43.5	0.7	2	55.6	6.8	11	-	-	-
Art	53.1	10.7	75	52.0	8.6	30	53.8	11.9	45	-	-	-
Biology	51.8	10.7	66	44.8	11.2	13	53.5	9.9	53	-	-	-
Communication	54.5	11.7	87	53.7	11.6	37	55.0	11.9	49	62.0	-	1
Education	55.4	10.2	65	46.0	15.6	4	56.0	9.6	61	-	-	-
English	51.8	10.8	43	48.7	7.8	18	55.7	9.2	23	34.5	29.0	2
Psychology	56.8	9.4	84	56.5	10.6	19	56.8	9.1	64	64.0	-	1
Total	54.1	10.6	433	51.6	10.7	123	55.2	10.2	306	48.8	23.5	4

Class category impacted level of satisfaction with the ZTC materials. Psychology students had the highest level of satisfaction and this satisfaction was stable regardless of gender ($M=56.8$, $SD=9.4$, $N=84$) whereas biology total ($M=51.8$, $SD=10.7$, $N=66$) and English total ($M=51.8$, $SD=10.2$, $N=43$) had the lowest levels of satisfaction. Psychology did not differ by gender but biology did vary greatly by gender in that females had higher satisfaction ($M=53.5$, $SD=9.9$, $N=53$) than males ($M=44.8$, $SD=11.2$, $N=13$).

Male students whose course category was unknown represented the lowest satisfaction among all groups ($M=43.5$, $SD=.7$, $N=2$) but this only represented 2 students. After the unknown group, the male students in biology ($M=44.8$, $SD=11.2$, $N=13$) and educa-

tion ($M=46.0$, $SD=15.6$, $N=4$) were the next lowest satisfaction. The two course categories that had the largest difference between men and women were the unknown course category and education. Women who had an unknown course category had a 12.1 higher ZTC satisfaction score while women from education had a 10-point higher satisfaction when compared to men. One limitation with this data is that female participants ($N=306$) were at least twice as many as the male participants ($N=123$) which influenced the total scores.

Student responses for the variables, Access and Costs, are shown in Figures 1 and 2, respectively. Students generally report towards having more access to textbooks and materials as seen by the trend towards scores near the maximum SD in Figure 1. Stu-

dent responses for the impact of costs on acquiring textbooks and materials is more evenly distributed along the scale, as shown in Figure 2.

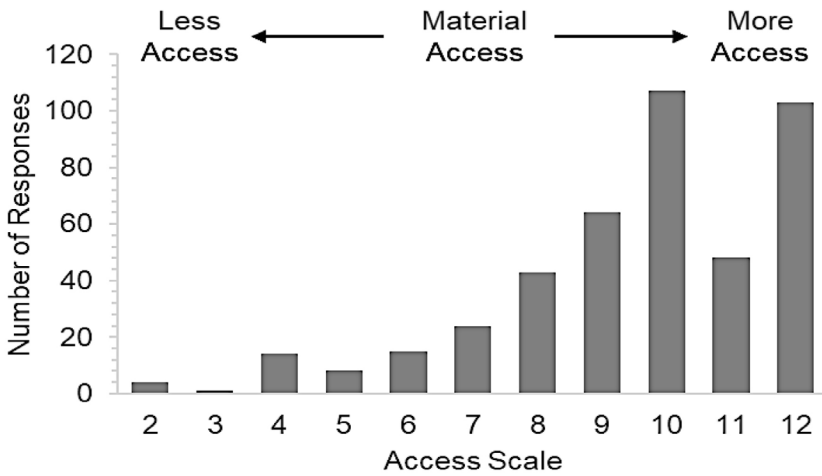


Figure 1: Student responses on Access Scale. Possible values range from 2– 12 with 2 representing lowest possible access and 12 representing highest possible access.

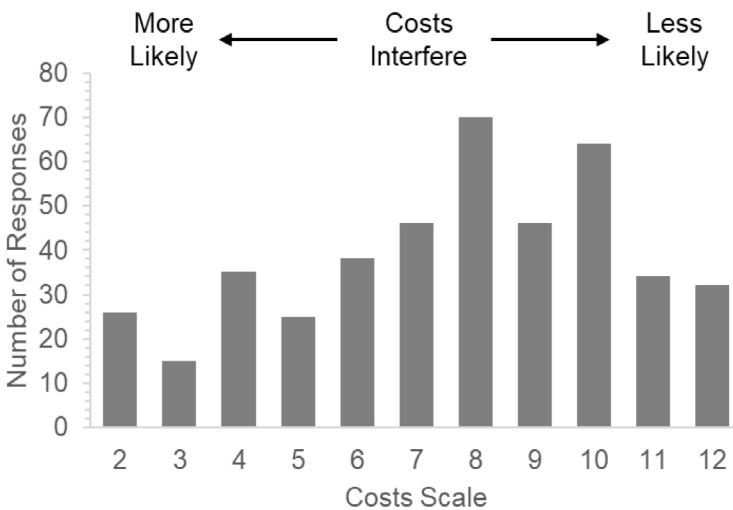


Figure 2: Student responses on Costs Scale. Possible values range from 2– 12 with 2 indicating students that it is more likely that costs interfere and 12 indicating that it is less likely that costs interfere with acquiring textbooks/materials.

Students reported broad over-all ZTC satisfaction. The student ZTC response score breakdown is shown in Figure 3. The majority of responses re-

port high satisfaction with the largest number of students reporting the highest possible satisfaction score (66).

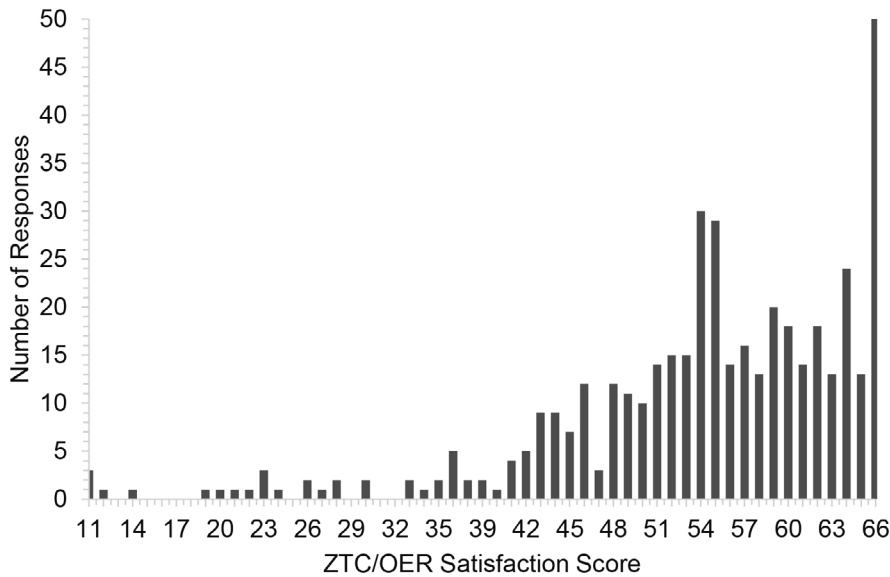


Figure 3: Student responses on ZTC/OER Satisfaction Scale. Possible values range from 11 – 66 with 11 representing lowest possible satisfaction and 66 represent highest possible satisfaction.

Results

RQ1 Did gender significantly impact student satisfaction with ZTC, the usefulness of materials/textbooks, whether they can access or if they avoid purchasing textbooks?

Independent sample T-tests were completed to determine if gender played a significant role. Females ($M=55.2$, $SD=10.2$) were significantly more likely to be satisfied with ZTC when compared to males ($M=51.1$, $SD=10.7$) $F(427) = .36$, $p < .001$. Females ($M=9.7$, $SD=2.1$) were significantly more likely to ensure that they have access to textbooks when compared to males ($M=9.2$, $SD=2.3$) $F(425) = 3.2$, $p < .05$. Gender did not significantly impact student beliefs about the usefulness of materials/textbooks nor whether they avoid purchasing

textbooks. Overall females were more significantly likely to ensure that they had access to the textbooks and were more satisfied with ZTC materials.

RQ2 What is the impact of Costs & Access on ZTC satisfaction?

A multiple regression analysis was consulted to examine the predictors of ZTC satisfaction. Two predictors were entered into the model stepwise: access and costs. Together these predictors accounted for 12% in the variance of ZTC satisfaction. Both variables were significant predictors Costs ($\beta=.36$, $p<.001$) and Access ($\beta=.29$, $p<.001$). Students who report high access to textbooks/materials and that costs did not interfere with their purchase significantly predicted higher ZTC satisfaction.

RQ3 Did student beliefs about their ability to pass a class without textbooks influence their satisfaction with OER?

ANOVA analysis was completed to determine if the statement, “I can pass any class without textbooks/materials” would impact student satisfaction with ZTC. Agreeing or disagreeing with this statement had no impact on student satisfaction with ZTC ($p=ns$).

RQ4 Did expected grade predict student satisfaction with OER, the usefulness of materials/textbooks, whether they can access or if they avoid purchasing textbooks?

Students who expected a D grade ($M=41.8$) were significantly less likely to be satisfied with ZTC when compared to C ($M=52$), B ($M=53.5$), or A ($M=55.5$) grades. Expected grades did not significantly impact their beliefs about the usefulness of materials/textbooks, whether they can access or if they avoid purchasing textbooks.

Discussion

The results of this study are consistent with previous findings that students report high satisfaction with using ZTC materials. In this study students report relatively high satisfaction with ZTC materials over a wide-range of classes. The mean ZTC satisfaction score is 54.1 where a ZTC score of 55 represents an average rating of “agree” for all 11 Likert-scale items. If we look at responses, shown in Figure 3, that represent an average “Slightly Agree” response (44 on ZTC

satisfaction score) and an average of “Agree” (55 on ZTC satisfaction score), we see that 88% of respondents have a ZTC satisfaction score of 44 or higher and 56% of respondents have a score of 55 or higher. Students who “Strongly Agreed” with every Likert-scale ZTC satisfaction question have an overall score of 66, which represents 12% of the sample. Broad student satisfaction over a wide variety of courses speaks to the quality of ZTC learning materials, effective integration of those materials within courses, and the benefits of free access.

Females are more likely than males to purchase and access textbooks for their courses and also score higher on the ZTC satisfaction score. Females as a group reporting higher general textbook access and also higher ZTC satisfaction speaks well for the quality of ZTC when compared with commercial textbooks as a group that uses commercial textbooks more views ZTC materials more favorably. This could be due to females using the ZTC materials more than males, consistent with their commercial textbook usage.

The other potential predictors of ZTC satisfaction examined showed that expected grade, students’ general access to course materials, and students’ general avoidance of paying for course materials are all positively associated with ZTC satisfaction. While these are all positively associated with ZTC satisfaction, they do not seem to be strong predictors as ZTC satisfaction is broadly high. For student expected grades, students expecting an A, B, or

C in the course, which represents 99% of respondents, report having similar ZTC satisfaction, but have higher satisfaction than students who are expecting a D in the course.

In the multiple-linear regression model, higher general access to course materials and higher likelihood of cost not interfering with access to course materials are associated with higher ZTC scores. The linear regression model accounts for 12% of the variance in ZTC satisfaction scores. Beta-values (β) provide the modeled change in ZTC satisfaction given a one-unit increase in the Costs ($\beta = 0.36$) or Access ($\beta = 0.29$) variables. Both Costs and Access variables can vary between values of 2 and 12. The model predicts that a respondent reporting the lowest possible score (2) in the Costs category would report a ZTC satisfaction score that is on average only 3.6 points lower than a respondent who reported the highest possible score (12). The trend of students with greater typical access to materials and smaller cost barriers reporting higher ZTC satisfaction is surprising given that ZTC materials potentially have the largest impact for students who do not typically access or purchase materials. This trend, while significant, leads to relatively small differences in overall ZTC satisfaction scores which speaks to the broad positive experience students have with ZTC materials.

ZTC initiatives are often championed as providing equitable access and lower costs of attendance for students. The results here show that overall, students' satisfaction with ZTC does not

trend in the expected direction. One might expect that students who are more sensitive to cost would be more satisfied with ZTC materials, but students who report being less sensitive to the costs of commercial textbooks are the ones that report an overall higher satisfaction with ZTC.

As ZTC materials are designed to provide more equitable access to materials, we might expect that students who do not typically have access to commercial course materials would view ZTC materials more favorably than students who do have access to commercial course materials. We find the opposite to be true in our sample. Students who report typically having greater access to course materials view ZTC materials more favorably than students who typically have less access to course materials. This finding might imply that students who do not typically have access to course materials have already developed habits that allow them to navigate courses without using textbooks and simply providing them more equitable access does not change their developed habits. This would imply that guiding students on using materials could be especially important once more equitable access is provided through the use of ZTC.

Alternatively, the finding that students who typically have access to course materials rate ZTC materials more favorably than those who do not typically have access could be explained by an experience effect. Students who have experience with course materials recognize that the ZTC materials are of

high quality as compared with the commercial textbooks they typically use.

The broad student satisfaction with ZTC materials is a strong indicator for success, but better understanding student past behaviors, how those learned behaviors influence their interaction with ZTC materials, and how to encourage students to develop effective behaviors for using ZTC are all critical in developing ZTC adoption movements that have a large impact for students who currently cannot access or purchase the materials when commercial textbooks are used.

Study Limitations

Students surveyed in this study are all enrolled at a Regional Master's Level institution. The faculty who taught the courses surveyed are largely either long-term ZTC users or participated in a semester-long professional development session for finding, adopting, and using ZTC. Satisfaction with ZTC could vary widely if the faculty member assigning the ZTC materials has not appropriately vetted the materials or integrated them into the course design.

Conclusion

Starting with the questions raised by [Grimaldi et al. \(2019\)](#) about the complications of 'access' as it relates to OER is important work. Often, student perception studies examine student perceptions of the quality of textbooks and ways of accessing materials ([Lin, 2019](#); [Bliss et al., 2013](#)).

While these studies raise important considerations, understanding student perceptions of ZTC materials based on expected grade offers needed insight to the potential impact of free materials on student grades, and impacts perceptions of access. Based on our survey, students reporting high access to course materials, who also reported costs did not interfere with their purchase significantly, generally felt more positively about ZTC materials. We can extrapolate this to mean students able to afford access to materials, who generally see them as useful, also report ZTC materials are useful. A key demographic for ZTC materials are students who may struggle to afford textbook materials. Based on our research, this group may not perceive ZTC materials with as much positive satisfaction. This has potential implications for how ZTC materials could be adopted in courses to better support student learning, adding instructional design as yet another possible complication in understanding access to ZTC and OER. While this should not hinder adopters, it is important to consider the complex interplay among student perception, cost, access, and expected grade.

Acknowledgements

This work would not have been possible without the financial support of the Provost and Dean's at Millersville University. Additionally, the authors would like to thank the work of the OER Working Group for all their support of the various elements of the OER initiative projects like this require.

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APPENDIX A

Student Perceptions of OER

This survey was created to understand student perceptions of OER at Millersville University. The survey was designed as part of the Open Textbook Initiative (OTI), a program that incentivized faculty to adopt Open Educational Resources (OER) and/or Zero Textbook Cost (ZTC) materials, administered through the OER Working Group. The survey has been administered to students in ZTC courses, faculty recipients of the OTI and faculty members in the OER Working Group.

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1) This survey is to help us understand student perceptions of OER. Your faculty member forwarded this survey because they have adopted OER. Please tell us which course are you currently taking that asked you to complete this survey?

a) Open ended

2) What is your major?

a) Open ended

Demographics – This information is being collected to understand more about the OER use experience. Personal information will remain confidential. Your name and M number will not be made public.

3) What is your name?

a) Open ended

4) What is your M#? (number only)

a) Open ended

5) Gender

a) Male

b) Female

c) Other

6) How many semesters have you completed at Millersville (Fall, Spring, Summer, winter)?

a) 0-30

7) How much (\$) do you typically spend on textbooks each semester (\$0-1000)?

a) Open ended

8) How much (\$) did you spend on textbooks this semester (\$0-1000)?

a) Open ended

9) On average, how much (\$) do you typically spend on textbooks for any one class (\$0-1000)?

a) Open ended

10) How much (\$) did you spend on textbooks for this class (\$0-1000)?

a) Open ended

11) In what percentage of courses do you have access to all the required textbooks/materials whether by purchasing it, borrowing, renting, course reserves or getting them for free? (0-100%)

12) On average, how many credits do you register for each Fall/Spring semester?

a) 0-21

13) On average, how many credits do you register for each Summer semester?

a) 0-21

14) On average, how many credits do you register for each Winter semester?

a) 0-21

15) What grade do you expect to earn in this class?

16) I could have passed this class without a textbook

a) Strongly disagree

b) Disagree

c) Somewhat disagree

d) Somewhat agree

e) Agree

f) Strongly agree

17) What are downsides to using electronic free textbooks?

a) Open ended

18) What else would you like to share regarding your experience using electronic free textbooks/materials?

a) Open ended

Instructions: In the following questions, free textbooks/materials will be all Open Educational Resources (OER), open materials, library resources, and other free-to-student materials adopted for this course

Scale: strongly disagree, disagree, slightly disagree, slightly agree, agree, strongly agree

19) I used/read the free course electronic textbooks/materials for this course

20) I was more satisfied to use free electronic textbooks/materials over paid textbooks/materials

21) The free electronic textbooks/materials in this course were easy to use

22) The free electronic textbooks/materials in this course were easy to understand

23) The quality of the free electronic textbooks/materials for this course were high.

24) The free textbooks/materials for this course were effective to help me learn.

25) I understood this course's content better using the free textbooks/materials than when using paid textbooks/materials.

26) I was able to put more effort into this course because of the free textbooks/materials.

27) I was able to take useful notes using the free electronic textbooks/materials just as I would have with a paid textbook.

28) I read more using free textbooks/materials than if the course required paid textbooks/materials.

29) I would register for a future course that uses free textbooks/materials like the one(s) used in this course.

Please answer these questions based on how you typically obtain or access course textbooks/materials.

30) I always purchase the required textbooks/materials.

31) I have access to all the required textbooks/materials in all my courses (either by paying for it or getting it for free).

32) Costs have led me to decline purchasing required textbooks/materials.

33) I avoid paying for required textbooks/materials.

Please answer these questions based on your typical experiences with classroom textbooks/materials.

34) Using textbooks/materials improves my grades.

35) Using textbooks/materials help me learn in classes.

36) I can pass any class without textbooks/materials.