



PERC REPORT

2019 Tennessee Community College Student Course Materials Survey

January 2020



THE UNIVERSITY OF
TENNESSEE
KNOXVILLE

POSTSECONDARY EDUCATION
RESEARCH CENTER

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EXECUTIVE SUMMARY

In Fall 2019, nearly 2,000 Tennessee community college students participated in the first Tennessee Community College Student Course Materials Survey. The survey was conducted by a doctoral student at The University of Tennessee Knoxville with support from the Postsecondary Education Research Center, the Tennessee Board of Regents Office of Policy and Strategy, and Offices of Institutional Research at each of the 12 participating campuses.

The Course Materials Survey was modeled after peer-reviewed national and state textbook affordability surveys that addressed student spending, purchase behaviors, and points of impact for course material costs on academic decisions and the student's ability to progress. The survey also addressed the extent to which required materials were being used in the classroom.

For this survey, required course materials referred to textbooks, digital access codes, software, lab manuals, etc. that students were required to purchase as per the "Required Textbooks" section of their course syllabus. The survey did not concern supplementary or "recommended" materials that students were not required to purchase.

The results in this report are intended to help inform educational leaders and policymakers as they develop recommendations and initiatives geared toward increasing the affordability of required course materials and college in general. To provide further insight, demographic questions regarding income, financial aid, first-generation status, intention to transfer to a four-year institution, work habits, race, ethnicity, age, gender, and more were included.

RESEARCH QUESTIONS

The research questions analyzed in this report are as follows:

1. On average, how much are Tennessee community college students spending on required course materials? Where and how are they making those purchases?
2. How do students perceive required material costs influence their academic decisions and ability to progress?
3. How often do students purchase required materials that are not used?

The report is organized beginning with this executive summary and key findings, followed by a more detailed description of findings relevant to the above research questions, and then finally an appendix with additional information on study design, participants, and references.

Additional analyses are forthcoming in the researcher's dissertation project, including whether these points of impact are significantly more pronounced for at-risk minority, low-income, and first-generation college student populations. Inquiries, comments, and feedback related to this research may be directed to Principal Investigator Elizabeth Spica (spica@vols.utk.edu).

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SUMMARY OF KEY FINDINGS

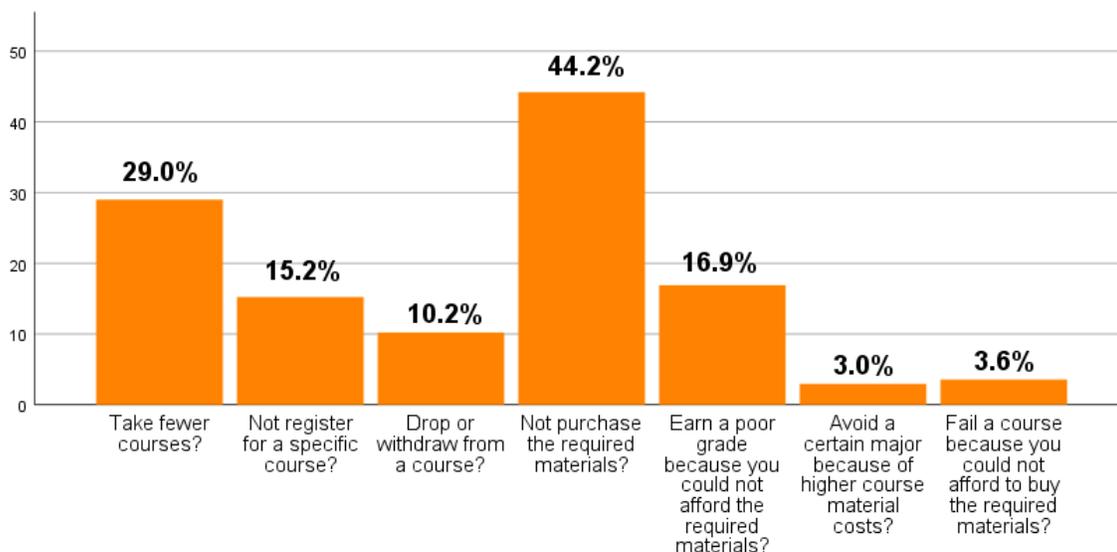
KEY FINDING 1. For the fall 2019 semester, students reported spending an average of \$119.18 per course. Students acquired materials most frequently from their campus bookstore, followed closely by online purchases from Amazon/Chegg.

Close to half (48.6%) of students spent over \$300 on course materials for the fall 2019 semester, with 20% spending more than \$500. Only 12.7% spent less than \$100. The most frequently reported spending range was between \$201 and \$300 (20.8%). Regardless of where they made the purchase, the purchase of used materials was more common than new, followed third by rentals. Students also reported relying on one another, with 17.1% borrowing or sharing materials. The campus library was the least utilized method of acquiring required materials.

KEY FINDING 2. Course material costs can have a negative influence on a student's academic decisions and ability to progress to graduation.

Due to the cost of course materials, at some point in their college career students have not purchased required materials (44.2%); taken fewer courses (29%); earned a poor grade (16.9%); not registered for a specific course (15.2%); and dropped or withdrawn from a course (10.2%). Of the 3% who reported avoiding specific majors because of course material costs, 75.5% of those majors were in STEM-related fields.

Points of Impact for Required Course Material Costs



Note: 1,792 respondents, with an average 1.6 items selected by each respondent

KEY FINDING 3. Students are purchasing required materials that are not being used.

More than forty percent of students (44.4%) reported purchasing required materials in the fall 2019 semester that were not being used. Throughout their time at their current community college, 43.5% reported purchasing materials that went unused either once or twice. Over ten percent (11.8%) have purchased materials that went unused three or more times.

ABOUT THE AUTHOR

Elizabeth Spica is a PhD student in Educational Leadership and Policy Studies at the University of Tennessee, Knoxville, where her research focuses on solutions that reduce barriers to college affordability. At UT, she assists with the coordination and development of the undergraduate Leadership Studies Minor and serves as member of the UT Libraries Open Education Working Group. Prior to returning for her PhD, Elizabeth held roles in student success administration, marketing, and curriculum design for higher education publishing and EdTech companies.

CONTENTS

EXECUTIVE SUMMARY 2

RESEARCH QUESTION 1 *On average, how much are Tennessee community college students spending on required course materials? Where and how are they making those purchases?* 4

RESEARCH QUESTION 2 *How do students perceive required material costs influence their academic decisions and ability to progress?* 10

RESEARCH QUESTION 3 *How often do students purchase required materials that are not used?* 17

CONCLUSION & FUTURE DIRECTIONS 18

APPENDIX. STUDY DESIGN 19

REFERENCES 24

RESEARCH QUESTION 1

On average, how much are Tennessee community college students spending on required course materials? Where and how are they making those purchases?

Close to half of students reported spending \$300+ on required course materials in the fall 2019 semester, with 20% spending over \$500. The average spending per course was \$119.18.

Close to half (48.6%) of students spent over \$300 on course materials for the fall 2019 semester, with 20% spending over \$500. Only 12.7% of participants spent less than \$100. The most frequently reporting spending range was between \$201 and \$300 (20.8%). Average total semester spending reported was \$383.08.

Table 1 below reports average student spending for Tennessee community college students

Table 1. Fall 2019 Average Spending

	Frequency	Percent
\$0 – \$100	239	12.7%
\$101 - \$200	338	17.9%
\$201 - \$300	392	20.8%
\$301 - \$400	298	15.8%
\$401 - \$500	241	12.8%
\$501 - \$600	144	7.6%
\$601 or more	234	12.4%

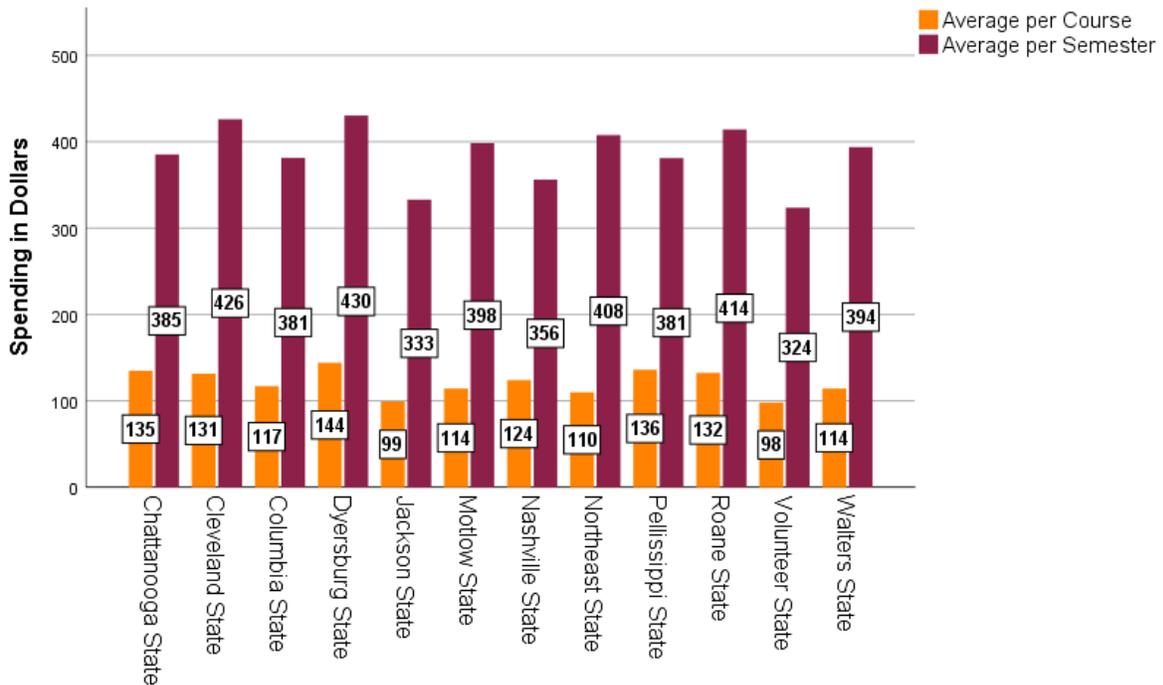
Note: 1,886 respondents

Overall average spending per course was \$119.18 (N=1,886, SD=135.20). This amount is consistent with findings of Nyamweya 2018's national study that estimated the average price for traditionally copywritten course materials to be \$134.26 per course (in contrast to the \$17.32 average cost for courses where Open Educational Resources were in use).

The findings from this TN Community College study are also similar to findings of a 2018 survey of students across Florida's 40 public colleges and universities (Florida Virtual Campus, 2019). In the Florida Virtual Campus Survey, close to half of students (45.8%)

reported spending more than \$300 on textbooks during the Fall 2017 and Spring 2018 terms. A higher percentage of Tennessee community college students reported spending more than \$500 (20%, as compared to 14.7% of students at Florida institutions). It is important to note that these percentages, while instructive, do not provide a direct comparison, as the populations surveyed differ (students at 12 Tennessee community colleges versus students across 40 public colleges and universities in the Florida College System). Figure 1 provides a breakdown in spending per course and per semester by community college.

Figure 1. Average Spending per Course and Semester by Community College



Note: 1,875 respondents

Tennessee community college students were also asked to report the number of courses they were taking in the fall 2019 semester where they spent \$0 on required materials. Over half (62.3%) purchased materials for each of their courses. Over a quarter (29.8%) had either one or two courses where they did not spend any money on course materials. Only 8% reported having three or more courses where they did not purchase materials.

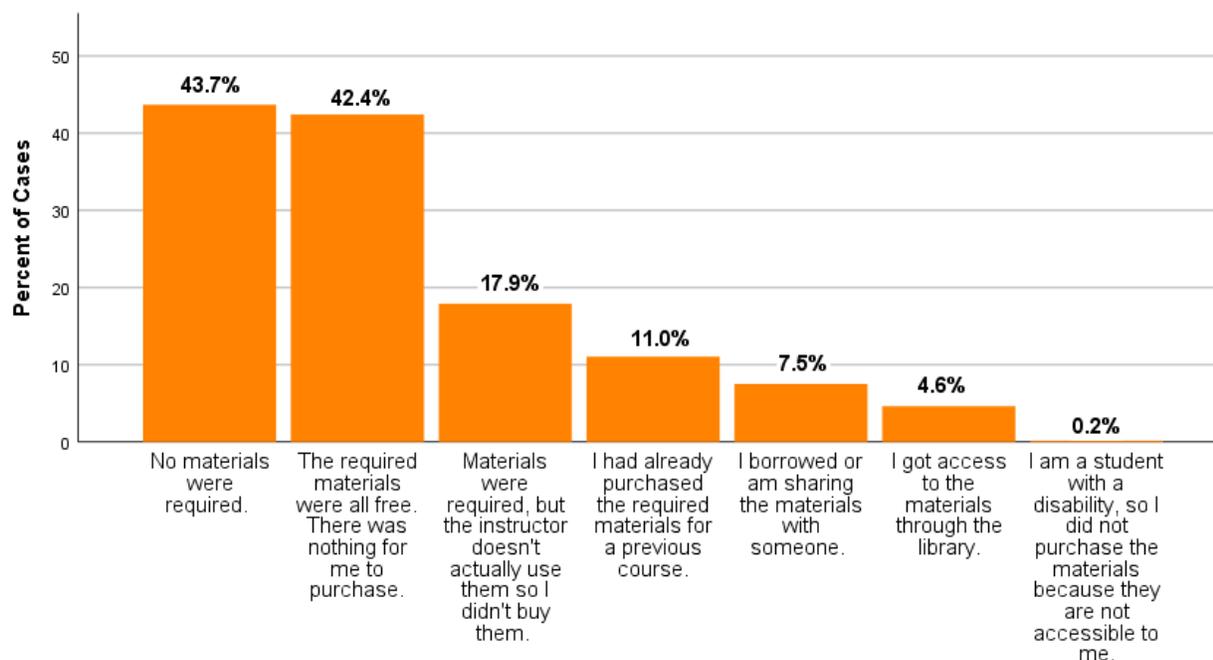
Of the 721 students who reported having at least one course where they spent \$0 on required materials, 43.6% had courses where no materials were required. In these cases, the instructor may have utilized openly licensed materials or freely accessible electronic materials within the Learning Management System or via the internet. They may have also made materials accessible via the library course

reserves, distributed materials in class, and/or made materials available by some means other than student purchase.

Of those 721, 17.9% reported spending \$0 because their instructor was not using the materials that they had required students to purchase. In those cases, the student decided not to purchase the materials.

Additional reasons were given as to why students spent \$0 on required materials. Over ten percent (11.3%) had already purchased the materials in a previous course and 7.7% were borrowing or sharing materials. Almost five percent (4.6%) were able to access their materials through the library, and 0.3% were students with disabilities that did not purchase because the materials were not accessible. Figure 2 provides a full listing of responses:

Figure 2. Why Students Spent \$0 on Materials for Fall 2019 Semester



Note: 812 responses, averaging 1.3 selections per respondent.

Students Rely on Campus Bookstores to Acquire Course Materials

Students reported most frequently acquiring materials from their campus bookstore, followed by online purchases from Amazon/Chegg. Used purchases were more common than new purchases, followed third by rentals. The campus library was the least utilized method of acquiring required course materials.

Students were asked to select up to three sources where they usually acquire required course materials. 1,897 students responded, submitting a total of 4,976 responses with an average of 2.6 responses per student. Because students were able to select multiple options, the percentages reported in this section add up to more than 100%, as each reflects the portion of overall respondents utilizing each method.

The most frequently reported method of acquiring course materials was through the campus bookstore. Approximately half of students typically purchase materials from the campus bookstore. For campus bookstore purchases, used purchases (50.9%) were more

popular than new (40.7%), followed by rentals (33.9%).

Fewer students reported purchasing from off-campus store locations (12.9% purchasing used, 3.7% purchasing new, and 8.2% renting from off-campus stores). The less frequently reported use of off-campus stores may be a result of not all community colleges having off-campus bookstores.

Second to the campus bookstore, Amazon/Chegg was the second most frequently reported purchase source, with more students renting than purchasing. **36.1% reported renting online from Amazon/Chegg, a higher percentage than those renting from campus bookstores.** 35.7% of students reported purchasing materials from Amazon/Chegg. eBay was the least commonly reported purchase source (9.1%). Additional sources mentioned in the open-ended comments were primarily online and included thriftbooks.com, knetbooks.com, cheapestbooks.com, and Facebook Marketplace.

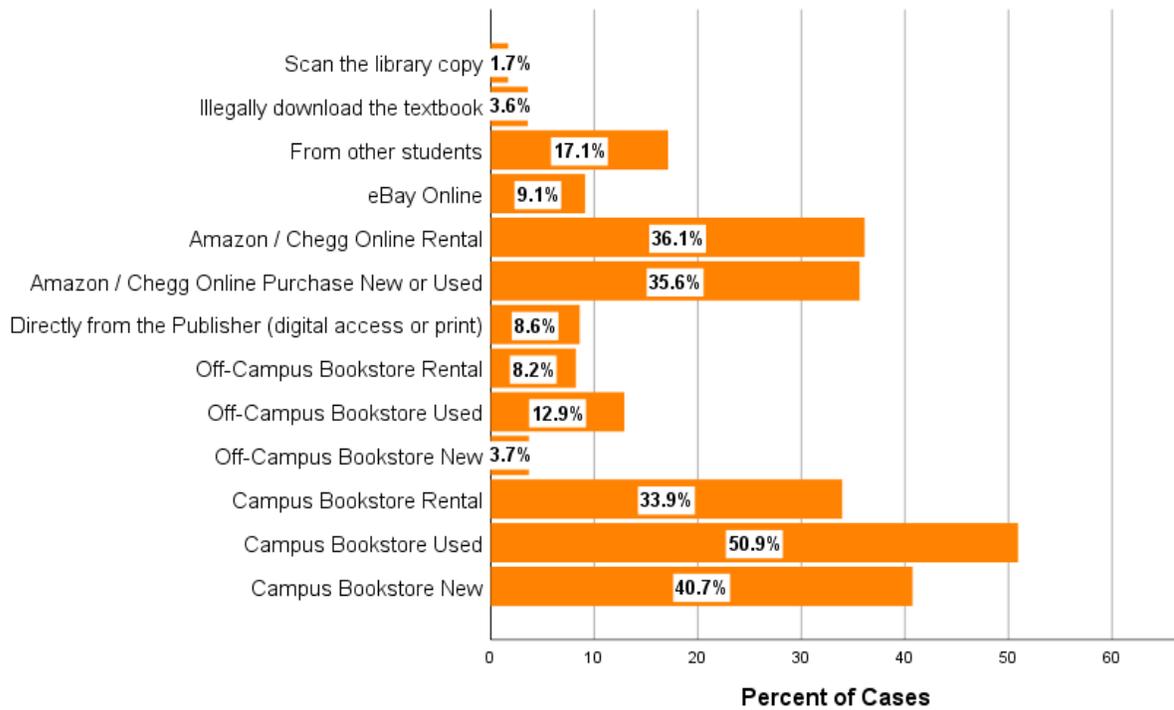
Students also reported relying on one another, with 17.1% acquiring materials from other students. Only 8.6% reported typically getting their materials directly from the publisher, either in the form of digital access or print. 3.6% reported illegally downloading textbooks.

These findings also suggested that the campus library was the least utilized method of acquiring required course materials, with only 1.7% of respondents indicating they accessed required course materials by scanning copies in the library course reserves. On the one hand this could indicate a lack of awareness of campus library services; on the other, it could indicate that required course materials are not available at the campus library. **While libraries have**

traditionally excelled in providing access to reserve copies of printed textbooks, they are less capable of providing access to digital and subscription-based resources. Required course materials that require a digital access code, for instance, present an issue in that access codes are typically tied to a single user for the purposes of completing online homework and enabling automatic assignment grading and sync capabilities with the instructor's electronic gradebook. This functionality prevents multiple users from accessing under the same code.

Figure 3 provides a breakdown of where students usually acquire their course materials.

Figure 3. Students Usually Acquire Materials from Campus Bookstores and Online



Note: 4,976 responses, average of 2.6 selections for each respondent.

Students Fund the Purchase of Required Course Materials with Grants, Scholarships, Cash, and Personal Savings

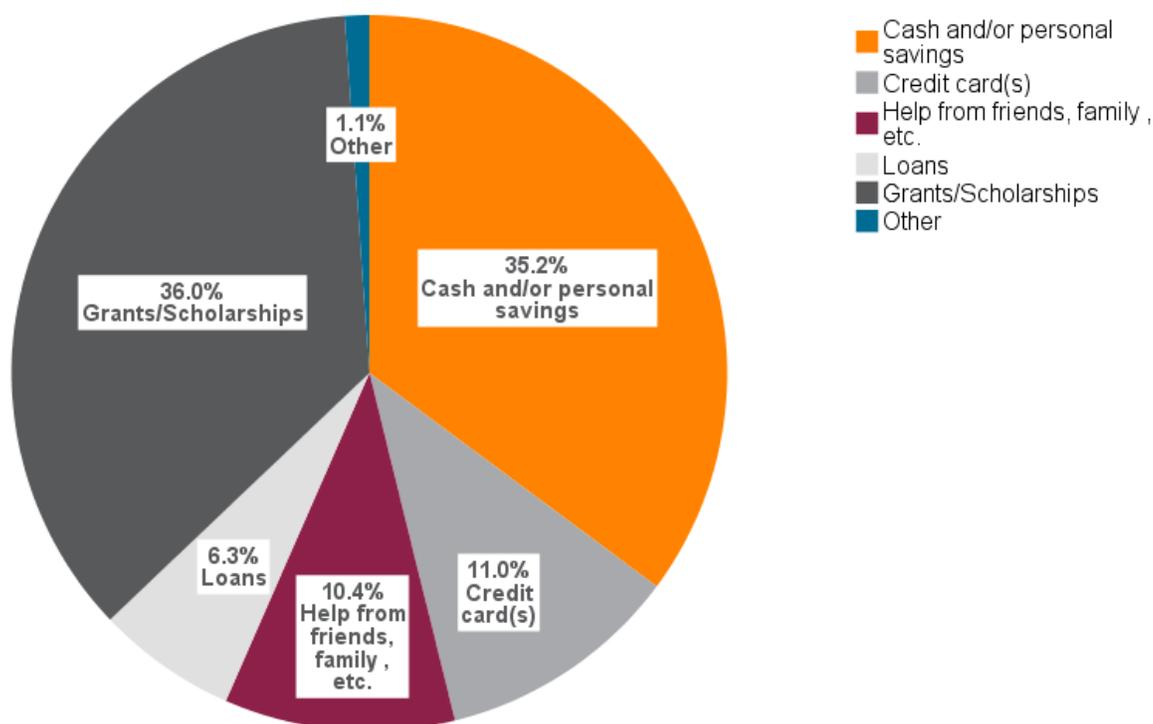
Students were asked to report their primary source of funding for required course materials. The 1,911 students who responded reported their primary source of funding to be grants and scholarships (36%), followed closely by cash and personal savings (35.2%). Credit cards and help from parents, family members, employers, and friends were the next most frequently reported methods of purchasing course

materials (credit cards 11%, help from others 10.4%).

Other primary sources of funding included students' workplaces, the TN Early Childhood Training Alliance (TECTA), state employee fee waivers, vocational rehabilitation, and assistance from the community college itself.

Figure 4 provides a breakdown of responses:

Figure 4. Students Primarily Fund Course Materials with Cash and Savings



Note: 1,911 respondents

The next question asked students to report the portion of course material costs that was covered by their financial aid (scholarships, grants, and loans). Of the 1,912 respondents, almost half (46.4%) either did not receive financial aid or had none of their course material

costs covered by financial aid. Of that category, 31.8% reported receiving financial aid but that none of it covered their course materials: *"I had to use my own money and some of my mom's until my Pell money was given to me because*

we are required to have the course material before our scholarship checks come in.”

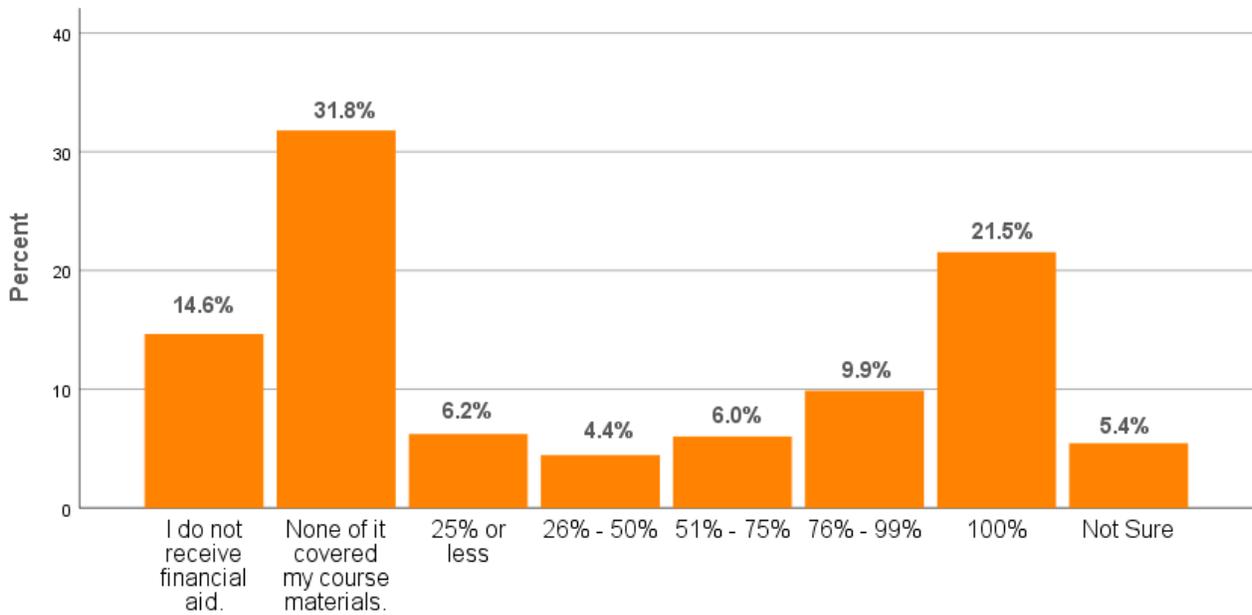
On the other end of the spectrum, 21.5% of students reported that financial aid completely covered the cost of their course materials. One student remarked about scholarships covering eBooks delivered via inclusive access, “*I was awarded TN Promise and the Hope scholarship that paid for ONLY my eTextbooks.*” Under this type of plan, students receive a discounted eTextbook and the cost of those materials is

added to their tuition bill at the time they register for the course.

Over a quarter of students (26.5%) had at least some of their material costs covered by financial aid, and 5.4% were unsure whether financial aid covered the cost of their materials.

Figure 5 summarizes the portion of course material purchases covered by financial aid:

Figure 5. Financial Aid Fully Covers the Materials Cost for Only 21.5% of Students



Note: 1,912 respondents

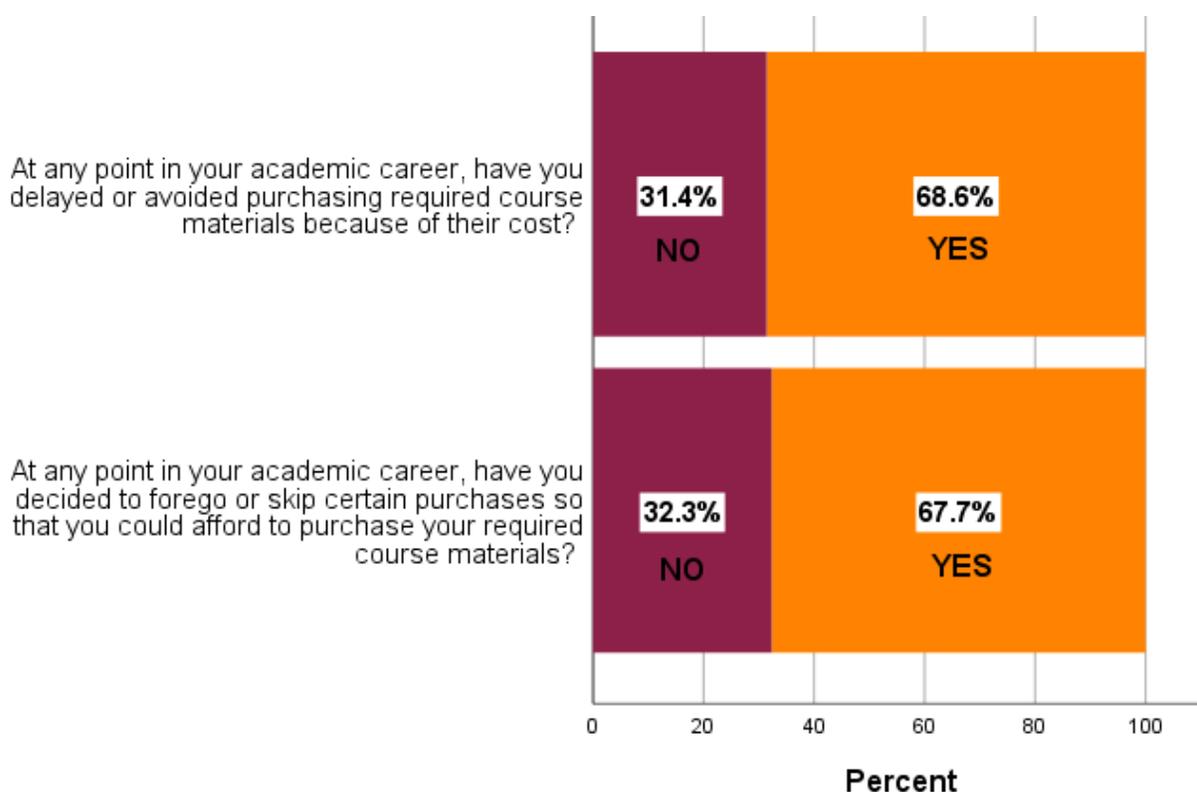
RESEARCH QUESTION 2

How do students perceive required course material costs influence their academic decisions and ability to progress?

The findings indicate that students make decisions about their education based on the cost of materials, and that they suffer both in and outside of the classroom when those costs exceed their ability to pay.

68.6% of student respondents reported delaying or avoiding the purchase of required course materials due to their cost. 67.7% have foregone or skipped certain purchases in order to afford their required course materials. See Figure 6 below:

Figure 6. Student Purchase Behaviors and Academic Decisions



Note: 1,912 respondents

These findings are similar to other studies. For example, one study of 676 students at Brigham Young University that found 66% of students have made decisions not to purchase a textbook due to cost (Martin, Belikov, Hilton, Wiley, and Fischer, 2017).

Tennessee community college students were also asked to report on specific academic decisions they have made that concern the cost of course materials. Of the 1,792 students who responded to the question, a total of 2,806 responses were selected, an average of 1.6 items selected per student. Since students were allowed to select multiple options for this

question, the percentages reported add up to more than 100% as each item reflects the percentage of response received from the overall 1,792 respondents.

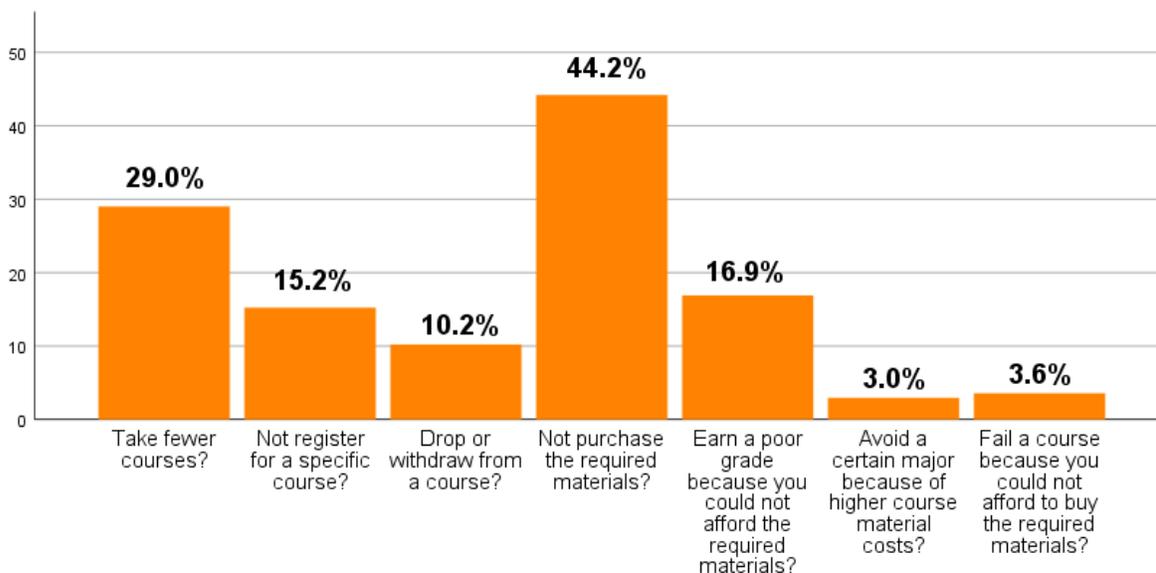
Due to the cost of course materials, at some point in their academic career:

- 44.2% have not purchased required materials
- 29% have taken fewer courses
- 16.9% have earned a poor grade
- 15.2% have not registered for a specific course
- 10.2% have dropped or withdrawn from a course
- 3.6% have failed a course
- 3% have avoided certain majors

Each of these negative impact categories provides insight into ways in which the cost of course materials may negatively influence academic decisions, purchase behaviors, and ultimately a student’s ability to progress to graduation. As one student commented, “I was going to take 5 classes this semester, but 2 of the accounting classes I was going to take had required books of around \$200 each and I just couldn’t afford that, so I opted to go an extra semester to get my degree so I could take those classes at another time.”

Figure 7 provides a full breakdown of Tennessee community college student responses:

Figure 7. Points of Impact: Required Course Material Costs



Note: 1,792 respondents, with an average 1.6 items selected by each respondent

These findings are in line with (but seemingly not quite as dire) as similar findings from the 2018 Florida Virtual Campus survey of students at 40 public colleges and institutions in the Florida College System. In this survey, 64.2% of students reported not purchasing the required

textbook because it cost too much; 35.6% said they earned a poor grade because they could not afford to buy the textbook; 17.2% said they failed a course because they could not afford to purchase the textbook (Florida Virtual Campus, 2019).

Students forego purchases in order to afford required course materials.

The 67.7% of students who reported delaying or foregoing purchases in order to afford required course materials were asked to provide more information on the types of purchases they have foregone. 1,408 respondents answered the question, with each selecting on average 4.3 categories.

The top five categories reported were clothes, shoes, or other apparel (69.7%); recreation (62.9%); self-care (60.0%); other educational expenses (52.0%); and savings and debt reduction (50.8%).

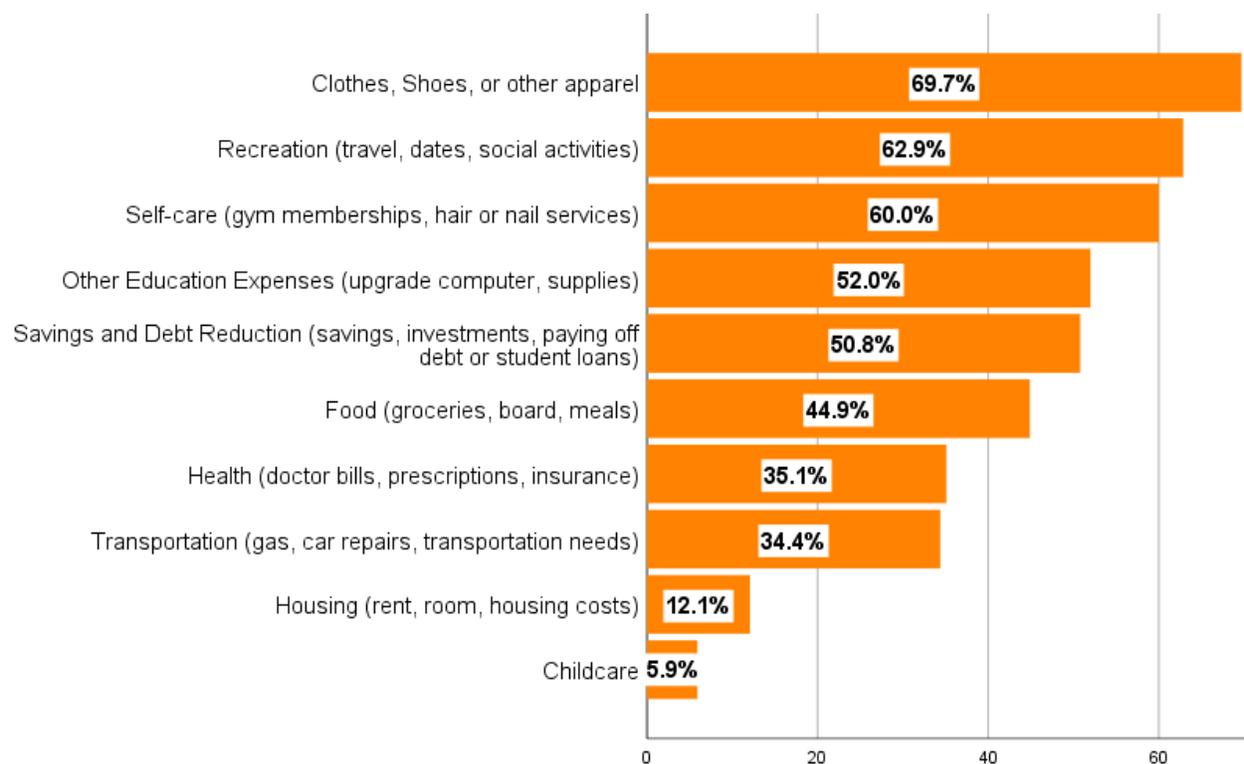
44.9% of respondents reported foregoing the purchase of food (groceries, board, meals).

While food did not rank in the top 5, many open-ended comments related to foregoing food purchases, eating less, and carefully selecting meals in order to afford required course materials.

The least foregone purchase was childcare, reported by only 5.9% of respondents. Housing also appeared lower in the rankings (12.1%), with transportation (34.4%) and health (35.1%) also ranking toward the lower end of the response categories.

Figure 8 provides a full breakdown of purchases foregone by category:

Figure 8. Purchases Foregone to Afford Course Materials



Note: 1,408 respondents, average of 4.3 items selected by each respondent

To help further illustrate the nature of purchases foregone in order to afford required course materials, Table 2 provides representative

quotes from the open-ended comments as related to the top 6 purchase categories:

Table 2. Comments on Purchases Foregone in Order to Afford Required Materials

% Impact and Purchase Category	Student Comments
<p>69.7%</p> <p>Clothes, shoes, or other apparel</p>	<p><i>“This fall my two sons wanted me to take them shopping for some new clothes for school. We were all excited and ready to go when I found out that my Spanish I required course material was going to cost me \$228 alone. I knew I had required material for three more classes coming and had to decide to put off buying new clothes and supplies for my children. Although my kids were not mad, they really want mom to succeed in college, they were sad and this caused me to struggle with the depression brought on by not being able to follow through with the plans my children and I had. I hope I never have to deal with this situation again, and even more I hope no one else has to go through this same situation as well.”</i></p> <p><i>“Work in a strict business casual office, and have gained weight. Went a while with long shirts and leaving my dress slacks unbuttoned because I could not afford a new pair that fit due to expenses of school.”</i></p> <p><i>“Just keeping life as simple as possible to be able to afford the gas to get to class. not buying new clothes, shoes, etc... not getting hair appointment.”</i></p>
<p>62.9%</p> <p>Recreation (travel, dates, social activities)</p>	<p><i>“A family trip before the semester was set to begin was put on hold because I had to pay for tuition and books.”</i></p> <p><i>“I am a working (full time) mother and the sole financial provider in my home. My husband is the main caregiver while I work and go to school. We are living very lean and any extra expenses are just not possible. Books and education are a necessity, so things like hair appointments, new clothes or vacations get put aside to save for when we can afford it.”</i></p> <p><i>“I couldn’t go on vacation because I didn’t know how much I was going to need for my courses material.”</i></p> <p><i>“Postponing family visiting or visiting family out of town, purchasing food that can be prepared once and eaten the remainder of the week to save”</i></p>
<p>60.0%</p> <p>Self-care (gym memberships, hair or nail services)</p>	<p><i>“I would never plan to spend money on recreation or self-care at this time due to schooling costs and built up credit cards from purchasing books materials and gas money to get to and from school.”</i></p> <p><i>“I had to cancel my gym membership because of gas money it takes to get to school.”</i></p> <p><i>“I normally can not afford self care until in the middle of the semester. This is when I would treat myself to try and relieve anxiety.”</i></p> <p><i>“Lots of times I go without hair cuts and I go without many things so that my children can have things. I am blessed at a second chance at coming back to school.”</i></p>

Table 2 (continued from previous page).

% Impact and Purchase Category	Student Comments
<p data-bbox="289 407 363 436">52.0%</p> <p data-bbox="224 470 428 617">Other education expenses (upgrade computer, supplies)</p>	<p data-bbox="461 407 1458 470"><i>"I could not buy an upgraded laptop for school due do having to purchase new books and materials with access code."</i></p> <p data-bbox="461 491 1468 793"><i>"I could use a laptop for my college work, because what I have right now is an iPad. I'm thankful to have the iPad (purchased at college bookstore at a great discount at the beginning of my first year) because otherwise I would not have any computer right now. But there are some things an iPad either won't do, or does very inefficiently. What I try to do is keep up with my homework during the hours the school library/computer lab is open so that I can do the things I need to do then. But my school is not open very late (till 7:30 pm M-Th; till 5 or 5:30 pm on Fridays) and not at all on weekends, so if something comes up I forgot or didn't know about and it's the weekend, I have to wait till I can get to the school on Monday or however soon I can go."</i></p> <p data-bbox="461 814 1445 932"><i>"My laptop is 9 years old. It works, just not very well. I considered buying a newer one last year, but my books were so expensive that I couldn't pull it off. I have since improved my situation well enough to get a better PC and still afford my course materials."</i></p>
<p data-bbox="289 995 363 1024">50.8%</p> <p data-bbox="217 1058 435 1247">Savings and debt reduction (savings, investments, paying off debt or student loans)</p>	<p data-bbox="461 995 1458 1087"><i>"I rack up credit card bills, deplete my savings and skip or delay car payments to pay \$300-\$500 on books per semester. If I didn't have TN Reconnect paying tuition, I would not be in school at all."</i></p> <p data-bbox="461 1108 1468 1323"><i>"I qualified for the TN Reconnect grant, but found out after enrolling that it only covers tuition, not fees and materials. I did qualify for the Diversity grant, but still it did not cover everything. I have had to forego any trips to visits family out of state because of the expense of the fees and materials over and above what the Reconnect Grant and Diversity grant covered. If not for the helps of others I still would not have been able to complete my degree as at my age I do not want to go into debt."</i></p> <p data-bbox="461 1344 1403 1407"><i>"I couldn't pay more than the minimum on my credit card and I have delayed Dr appointments."</i></p>
<p data-bbox="289 1470 363 1499">44.9%</p> <p data-bbox="224 1533 428 1596">Food (groceries, board, meals)</p>	<p data-bbox="461 1470 1468 1591"><i>"When I found out I would not get the option to get my books with the Pell grant at the beginning of the semester I took my personal money and bought the books, so I had no money left over to spend on eating out and buying extra things. I did not die though, everything was okay."</i></p> <p data-bbox="461 1617 1445 1743"><i>"My kids and I went on a strict ramen noodle diet to afford my materials this semester. No eating out, no buying new school supplies or clothing or doing any start of the semester hair cuts... strict budget of pay basic bills (rent, water, electric), have gas for transportation to/from school, and ramen noodles."</i></p> <p data-bbox="461 1764 1458 1919"><i>"Because I had to buy a 300 dollar book and a 150 dollar code for my A and P 2 class I only had 87 dollars left till my next pay day which was in two weeks, I lived off of a bag of white rice till I got paid. I also had to be very careful with my gas, there were a couple of nights where I slept in the parking lot at my work so that I could save on gas."</i></p>

Course material costs can influence the courses and programs that students pursue.

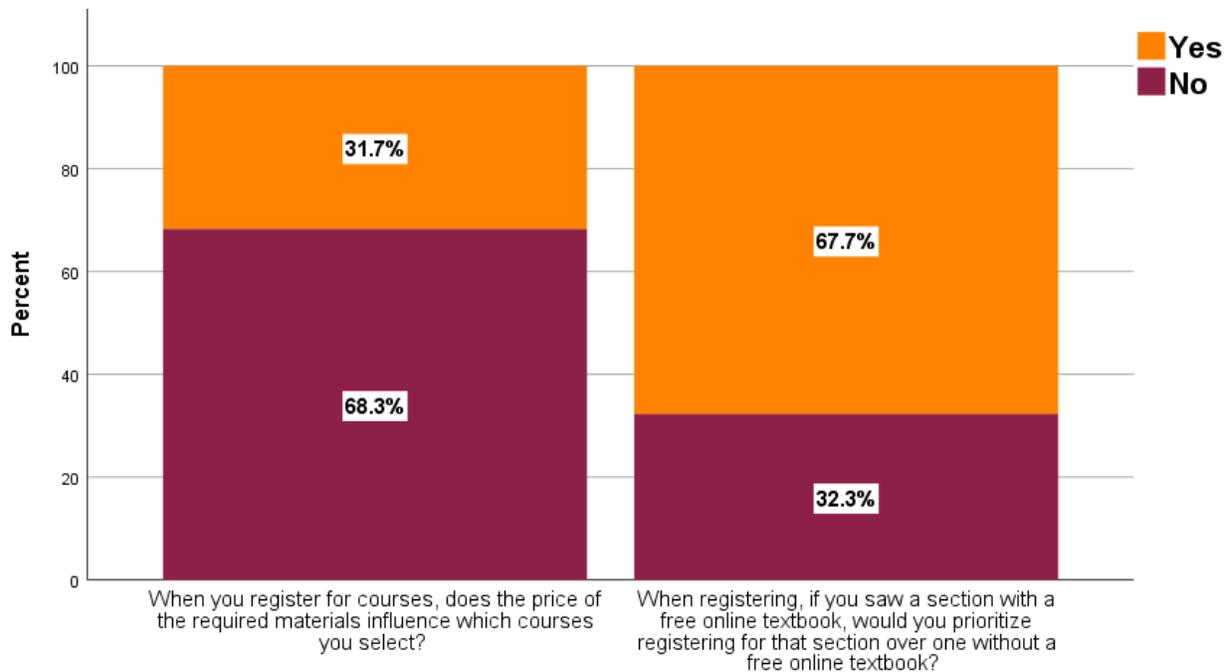
Students were also asked additional details about majors avoided because of course material costs, and the findings suggest that the cost of required materials can have an impact on the courses and programs students choose to pursue.

Of the 3% who reported avoiding a specific major, 75.5% of those majors were in STEM-related fields, with nursing and healthcare fields most prominently avoided. One student commented, *“For my first semester of nursing school, I spent around \$900 on just textbooks. I probably spent around \$1,500 for all of the required things for the Nursing Fundamentals class. And, I have yet to use some of the access codes and books! So I wasted my money on some books that were 'required' when I will never use them.”*

Another student: *“Medical book was over \$300 and my book advance is \$500 and my online courses are \$100 a piece so I end up having to put money with it that I don't have and have to borrow. I ended up missing one book for A&P this semester because of the online part being an extra \$160 that I did not know about that was not an option. Ended up failing this semester because I was unable to get the book.”*

Two further survey questions regarding the influence of required materials cost on course selections provided conflicting responses. In one question, the majority of students (68.3%) reported not being influenced by the price of course materials when they select courses. In a subsequent question, 67.7% said they would prioritize registering for a section with a free online textbook over a section that did not have a free online textbook. See Figure 9:

Figure 9. Influence of Cost on Course Selection



Note: 1,408 respondents, with an average of 4.3 items selected by each respondent

Responses to the first question may indicate that the cost of materials has a minimal impact on which courses students select. However, these responses may be just as likely the result of course material cost information not being available for students to consider at the time they select and register for courses.

Despite the best efforts of bookstore partners to gather information on required materials from faculty, course material pricing and other information is often not available at the time of registration. Therefore, students are usually not able to factor in those costs as part of their

decision. One student noted in the free response, *“If the prices of the books or the materials needed are ever disclosed when signing up for the class, I don't know where and no one I have asked seems to know either. You have to sign up for the class before you can get any information, either by going to the bookstore to be given your list or to wait until class starts to get a syllabus. There's either that punch in the gut feeling of the professor listing off expensive books, or worse, access codes, or the flood of relief when the professor says they will not require books and will either hand out material or use free sources.”*

RESEARCH QUESTION 3

How often do students purchase required materials that are not used?

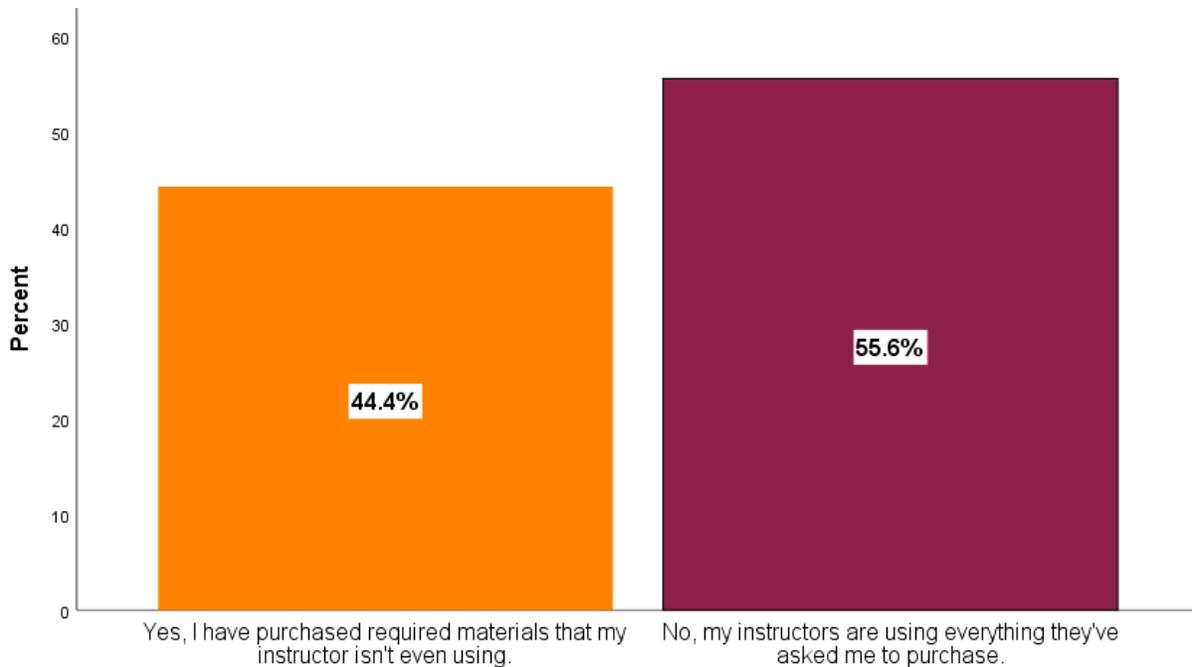
44.4% of students reported purchasing required materials that were not being used in the classroom.

Students were asked how many times in the fall 2019 semester that they purchased required materials that were not being used in the course. Of 1,903 respondents, 44.4% reported purchasing required materials that their instructor was not using in the course. Over half (55.6%) reported their instructors were using all

materials that the students had been required to purchase.

Regarding the high percentage of unused materials, it is possible the required materials would be used later in the semester. However, the survey was launched after the mid-point of the semester (mid Oct-Nov 1), a point in time where it might be reasonably expected for any required materials would have been incorporated. See responses in Figure 10 below:

Figure 10. Students Purchase Materials That Are Not Used



Note: 1,903 respondents

The next question asked students to report how many times at their current community college that they had purchased materials that were not used in the course. Almost half (44.7%) of the 1,683 respondents to the question reported that their instructors had always used the materials they had required the student to purchase.

Another 43.5%, however, reported purchasing materials that went unused either once or twice throughout their time at their current community college. 11.8% purchased materials three or more times that went unused throughout their time at their current community college. Table 3 reports all responses.

Table 3. Required Materials Not Being Used During Time at Current Community College

	Frequency	Percent
None - my instructors have used the materials they've required me to purchase.	752	44.7
One	443	26.3
Two	290	17.2
Three	80	4.8
Four or more	118	7.0

Note: 1,683 respondents

CONCLUSION & FUTURE DIRECTIONS

This first administration of a large-scale, Tennessee community college-specific survey sought to uncover the extent to which the cost of required materials presents barriers to student success. The findings suggest that Tennessee community college students are impacted by course material costs in the same ways as students throughout the rest of the nation, and these points of impact can be negative in terms of promoting student access, success, and the ability to persist toward secondary degrees and credentials.

These findings should be of importance to Tennessee legislators and educational leaders as they continue to develop policy in accordance with Tennessee Code Annotated (T.C.A.), Title 49, Chapter 7, Part 1 that mandates the development of policies for minimizing the cost of textbooks and course materials. In an age where numerous low- and no-cost alternatives like Open Educational Resources (OER) exist, these survey results call into question whether the least costly practices are being considered. These results also illuminate the obsolescence of provisions such as that copies of textbooks are to be made available for student use at no cost through the department or library reserve system. Given that most general education content is now freely available on the internet, the breaking point appears to lie in students' inability to purchase access to complete homework through publisher-provided systems. These barriers might otherwise enable them to succeed in coursework, make timely progression to graduation, and ultimately fulfill the promise of a better life offered to those who pursue higher education.

Additional analyses are forthcoming in the researcher's dissertation project, including whether these points of impact are significantly

more pronounced for at-risk minority, low-income, and first-generation college student populations.

While these data certainly illustrate conditions for students of Tennessee community colleges, limitations exist with the current design in its reliance upon self-reported behaviors, which may not present a completely accurate representation. The sample size for this study, while robust enough to be generalizable to the 89,078 students who enrolled in TBR community colleges for the fall 2018 semester (99% confidence, 2.9% margin of error), was still relatively small and lacked participation from a community college serving one of the most impoverished areas of the state and nation. Low participation rates may have been due to the email invitation going into students' spam folders. They might also have been due to the lack of incentive –no prize drawings, extra credit, and/or assignment points were offered to encourage students to complete the survey. Conversely, the lack of participation incentive served as an advantage to the extent that those who did choose to complete the survey did so completely on their own volition.

Looking toward the future, it may prove beneficial to refine and repeat the survey in order to gain a comparative measure of student spending, cost-related academic decisions, and purchase behaviors. A comparative measure will be vital as Tennessee community colleges continue to launch and gauge the efficacy of initiatives geared toward increasing course material and college affordability. For these future studies, the data gathered here will function as a baseline.

APPENDIX. STUDY DESIGN

INTRODUCTION

Higher education contributes to the capacity to earn a livelihood and improve financial and social well-being, regardless of one's race or ethnicity. Workers with more education have lower unemployment and higher earnings than workers with less education (US Bureau of Labor Statistics, 2013). These benefits, however, are not accessible to all. Despite affordability's being a key predictor for college enrollment and academic success (Advisory Committee on Student Financial Assistance, 2002; Heller and Becker, 2003; Becker, 2004; Becker and St. John, 2006), the cost of higher education continues to rise at an alarming rate, over 538% since 1985 (US Bureau of Labor Statistics, 2009).

To help mitigate these costs, Tennessee has introduced programs to eliminate barriers associated with the cost of tuition. However, costs related to course materials may continue to present barriers. According to a 2013 U.S. Government Accountability Office report, while overall consumer prices rose only 28% from 2002 to 2012, new textbook prices rose by 82% (tuition and fees rose 89% over that same period). When students are unable to pay these costs out of pocket, they often turn to student loans. Consequently, student loan debt now ranks second behind mortgage debt at an estimated \$1.5 trillion, an increase of \$20 billion between the second and third quarters of 2019 (Federal Reserve Bank, 2019).

The cost of course materials has become such a concern that at least 30 states have introduced legislation to address their affordability (Baek and Monaghan, 2013). Congress has also acknowledged the need to address costs with the 2015 Affordable College Textbook Act (H.R. 3840/S. 1864), which requires programs like the Department of Labor's Trade Adjustment Assistance Community College and Career Training program to openly license and make all curricula and materials freely available (TAACCCT, 2018). Congress also recently renewed a \$5 million federal appropriation for the creation of openly-licensed textbooks, an initiative first funded in their Fiscal Year 2018

omnibus bill (Congress Renews Open Textbook Pilot for a Second Year, 2019).

Locally, libraries have attempted to reduce costs by making materials available on a loan basis and promoting the use of Open Educational Resources (Thomas & Bernhardt, 2018; Hendrix, Lyons, & Aronoff, 2016; Chadwell & Fisher, 2016; Colson & Donaldson, 2017). Even publishers and campus bookstores have positioned themselves to provide more affordable options, offering everything from textbook rentals to "inclusive access" programs and "all you can eat" type subscription services (Graydon et al, 2011; Kronk, 2018).

Further perplexing, however, is how cost data differ across studies. A study conducted fall 2016 across Virginia Community Colleges revealed average semester material costs to be between \$413.47 and \$637.09 (Miller, et al, 2016). In 2017, the National Center of Education Statistics identified the average college student budget for books and supplies in the 2016-17 academic year to be \$1,263 for students attending 4-year institutions and \$1,458 for students attending 2-year institutions (NCES, 2017). Then, according to the National Association of College Stores, the average college student's expenditures on required course materials for the entire school year was much lower, dropping from \$701 in the 2007/08 school year to \$638 in the 2013/14 school year (NACS, 2018). Similarly, the national IPEDS database facilitated by the National Center for Education Statistics provides only a blurred indicator of actual costs, lumping the cost of required course materials and "supplies" together (IPEDS 2018).

The answers are unclear, and none of the studies address Tennessee-specific student populations. Very little information exists regarding 1) how much students at Tennessee community colleges are spending on required materials, 2) whether those costs present barriers to their success, and 3) whether students are receiving value out of that which they are required to purchase in terms of whether those materials are actually being used

in the classroom. Without this knowledge, it is difficult for Tennessee legislators and educational leaders to develop policy that maximizes the potential for students to succeed in coursework, progress to graduation, and ultimately fulfill the promise of a better life offered to those who pursue higher education.

This study was approved by the University of Tennessee Knoxville Institutional Review Board (UTK IRB-19-05272-XM). Additional information on participants and survey administration can be found in the following section.

PARTICIPANTS

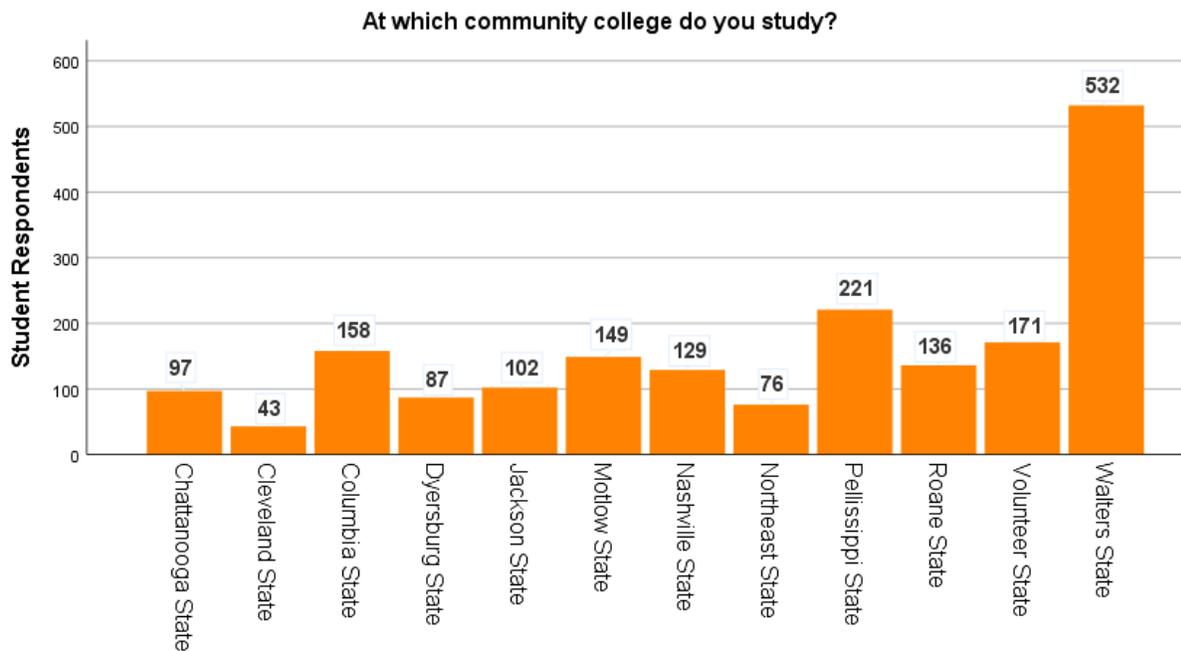
Almost 2,000 students enrolled across 12 of Tennessee’s 13 community colleges participated in the survey (n = 1,912). The majority of respondents (77.7%) reported taking 3 or more courses for the fall 2019 semester. Students also reported participating in a variety of programs:

- 655 in Tennessee Reconnect
- 602 in Tennessee Promise

- 434 in Tennessee Hope
- 8 in Veteran Reconnect
- 506 respondents reported participating in none of these programs, and 92 were unsure whether they were participants in any program.

Figure 11 provides a breakdown of respondents by community college:

Figure 11. Participants by Community College



Note: 1,901 respondents

Most respondents also work at a job in addition to their studies. Of 1,909 who responded to how much they work, 37.2% worked more than 30 hours a week, 28.2% worked 15-30 hours a week, and 13.3% worked 1-15 hours a week. 21.4% did not work in addition to their studies.

While most students (89.5%) reported having sufficient home internet access to complete homework and other course-related assignments, others reported difficulties: “While

my internet access is decent, I am luckier than most. Many rely on publicly available internet like at McDonalds. I really like the program at my school that lends out hotspots for students but it shouldn't be up to the school to provide a service that should be available to all.” In addition to using the internet available through campus and public libraries, the free wifi at McDonald’s was mentioned several times in the open-ended comments: “If I can't afford internet and professors put work due on the weekend

then I have to try and find wifi. When McDonald's is locked up you can't get access to the wifi. Ends up either not getting the assignment done or rushing through it and not getting the best grade that you could have received."

53.8% of respondents planned to transfer to a four-year institution after finishing the program in which they were enrolled; 21.3% did not intend to transfer, 24.8% were unsure (n=1,904).

Most students reported a single ethnicity; some responded by selecting more than one. Most respondents were either first or second year

students. The majority of respondents (68.2%) were first-generation college students, meaning that neither of their parents graduated from a four-year college/university.

Students were also asked to estimate their annual household incomes. For this survey, household income was defined as the combined amount earned by all adult members of the household each year.

Tables 4-8 display summaries regarding participant ethnicities, first semester of enrollment, age, gender, and estimated household income:

Table 4. Participant Ethnicities

	Responses		Percent of Cases
	N	Percent	
Black or African American	141	7.1%	7.5%
Hispanic or Latino	112	5.6%	5.9%
Asian	38	1.9%	2.0%
American Indian or Alaska Native	29	1.5%	1.5%
Native Hawaiian or other Pacific Islander	6	0.3%	0.3%
White or Caucasian	1607	80.5%	85.0%
Prefer Not to Respond	64	3.2%	3.4%

Note: 1,997 respondents

Table 5. First Semester of Enrollment at Current Community College

	Frequency	Percent
Fall 2019	732	38.3%
Spring 2019	107	5.6%
Fall 2018	494	25.9%
Spring 2018	74	3.9%
Fall 2017	216	11.3%
Other	286	15.0%

Note: 1,909 respondents

Table 6. Age

	Frequency	Percent
18-24	985	51.6%
25-34	406	21.3%
35-44	260	13.6%
45+	232	12.1%

Note: 1,883 respondents

Table 7. Gender

	Frequency	Percent
Woman	1455	76.4%
Man	413	21.7%
Non-Binary/Third Gender	11	.6%
Prefer not to respond	26	1.4%

Note: 1,905 respondents

Table 8. Estimated Household Income

	Frequency	Percent
Less than \$13,000	153	8.1%
\$13,001-\$16,999	95	5.0%
\$17,000-\$19,999	66	3.5%
\$20,000-\$24,999	122	6.4%
\$25,000-\$31,999	140	7.4%
\$32,000-\$35,999	114	6.0%
\$36,000-\$46,999	168	8.9%
\$47,000-\$55,000	144	7.6%
\$55,000-\$64,999	116	6.1%
\$65,000-\$74,999	123	6.5%
\$75,000-\$99,999	108	5.7%
\$100,000 or more	106	5.6%
Not Sure	276	14.6%
Prefer not to Answer	163	8.6%

Note: 1,894 respondents

ABOUT THE SURVEY

The Tennessee Community College Student Course Materials survey was administered via email invitation sent by Research Directors at each participating campus beginning October 17, 2019. Campuses were also given the choice to deploy an additional, optional survey notice and link within their password-protected campus portal. The timing of the survey fell during the 8th week of the semester, one week following fall break, with the goal to identify a point in time when students would still be likely to recall how much they spent on materials while also having enough of the semester underway to determine whether or not those materials were being used.

The survey remained open for two weeks, closing on October 31st, with a first reminder sent after nine days and a final reminder two days before the survey close. Halfway into the survey, an email was also sent by Research Directors to instructors notifying them of the survey and requesting they remind (but not incentivize) their students to read the email invitation and consider completing the survey. The complete survey timeline is indicated below:

- Thursday, October 17, 2019 – Survey Launch / Email Invitation to Students
- Monday, October 21, 2019 – Email from IR Directors to Instructors
- Saturday, October 26, 2019 – Email Reminder 1
- Tuesday, October 29, 2019 – Email Final Reminder
- Friday, November 1—Survey Close

All participating institutions adhered to the above timeline, with the exception of Chattanooga State, which launched September 19 in order to avoid conflict with another survey during the scheduled time.

The Course Materials survey adapted peer-reviewed instruments from several state and

national course material affordability studies, namely the Florida Virtual Campus (2019), Martin, et al. (2017), and NACS (2018). See brief info on each below and full citations in the references section:

- Florida Virtual Campus (2019) has conducted textbook surveys every two years since 2010 and is a commonly referenced national model for course material affordability surveys.
- Martin, et al (2017) focused heavily on points of impact for textbook costs, including the purchases students forego in order to pay for their course materials.
- NACS (2018). This survey from the National Association of College Stores centered around student spending, purchase, and course material preferences.

All research and survey questions were shared and tested with TBR community college campus Research Directors prior to launch. Average time for students to complete the survey was 10 minutes.

DATA ANALYSES

Multiple-choice and multiple-select items were analyzed quantitatively through descriptive analysis, with frequencies and percentages reported for nominal and ordinal-scaled variables. Means and standard deviations were calculated for all continuous variables and Likert scale items.

Representative free response items were included to add further depth to the findings. These open-response items will be further examined using thematic analysis and made available as part of the researcher's dissertation project later in 2020.

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2019 Tennessee Community College Student Course Materials Survey

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