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Textbook Alternative Incentive Programs at U.S. Universities: A Review of the Literature

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Résumé de l'article

Objective – This article reviews current literature on incentive grant programs for textbook alternatives at universities and their libraries. Of particular interest in this review are common patterns and factors in the design, development, and implementation of these initiatives at the programmatic level, trends in the results of assessment of programs, and unique elements of certain institutions' programs.

Methods – The review was limited in scope to studies in scholarly and professional publications of textbook alternative incentive programs at universities within the United States of America, published within ten years prior to the investigation. A comprehensive literature search was conducted and then subjected to analysis for trends and patterns.

Results – Studies of these types of programs have reported substantial total cost savings to affected students compared to the relatively small financial investments that are required to establish them. The majority of incentive programs were led by university libraries, although the most successful efforts appear to have been broadly collaborative in nature. Programs are well-regarded by students and faculty, with benefits to pedagogy and access to materials beyond the cost savings to students. The field of replacing textbooks with alternatives is still evolving, however, and the required investment of faculty time and effort is still a barrier, while inconsistent approaches to impact measurement make it difficult to compare programs or establish best practices.

Conclusion – Overall, the literature shows evidence of significant benefits from incentive programs at a relatively low cost. Furthermore, these programs are opportunities to establish cross-campus partnerships and collaborations, and collaboration seems to be effective at helping to reduce barriers and increase impact. Further research is needed on similar programs at community colleges and at higher education institutions internationally.

Evidence Based Library and Information Practice

Review Article

Textbook Alternative Incentive Programs at U.S. Universities: A Review of the Literature

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Abstract

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cost savings to students. The field of replacing textbooks with alternatives is still evolving, however, and the required investment of faculty time and effort is still a barrier, while inconsistent approaches to impact measurement make it difficult to compare programs or establish best practices.

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Introduction

The cost of textbooks is prohibitive for many postsecondary students. The National Center for Education Statistics found that for the 2016–17 academic year, the average cost of books and supplies for entering full-time undergraduate students at four-year institutions was $1,263, almost 10% of the average cost of tuition (National Center for Education Statistics, 2017). While textbook prices are no longer rising as quickly as they were in the earliest part of the 21st century, in part due to institutional efforts to make lower-cost options available (Levitan, 2018), providing relief from textbook costs is still a major concern for student success and college affordability. This is particularly true since high textbook costs have been shown to prevent students from acquiring needed materials for the academic curriculum (Senack, 2014).

One of the ways that colleges and universities have responded to this issue is by encouraging faculty to replace traditional course textbooks with materials that are available to students at no additional cost. These may include resources that are owned by the institution's library or open educational resources (OER). OER are commonly defined as educational resources, most often but not always available digitally and online, that are both free of cost and freely available for use, adaptation, and redistribution (Wiley et al., 2014). Both of these types of resources, however, tend to be less centralized and marketed to faculty than traditional textbooks, and faculty feedback has indicated that the cost of time and labour associated with creating, adapting, implementing, or even simply locating those that are appropriate can be substantial (Bell, 2012; Delimont et al., 2016; Batchelor, 2018). Belikov & Bodily (2016) have identified other significant barriers to faculty adoption of OER specifically, most notably lack of information on OER, lack of discoverability of OER, and confusion over the distinctions between OER and other types of resources.

To overcome these barriers, over the past decade, a growing number of postsecondary institutions have begun to offer faculty small financial incentives to encourage the use or development of textbook alternatives. Typically, these initiatives take the form of a small grant program where faculty apply and agree to certain requirements, a body within the institution evaluates their proposals, and a certain number of applicants are awarded some type of financial remuneration for the effort that their implementation of an alternative will entail. After their courses have been taught, participating faculty may be required to report out on their experiences, participate in later assessment efforts, or do both.

Aims

The aims of the present work are to conduct a narrative review of the professional and scholarly literature specifically on incentive grant programs for textbook alternatives and to

seek out themes and commonalities in the experiences of the authors and other participants. Key items to investigate include common patterns and factors in the design, development, and implementation of these initiatives at the programmatic level, trends in the results of assessment of programs, and unique elements of certain institutions' programs and what impact they appear to have had. Finally, conclusions and recommendations are drawn from the literature that may be used to inform developers and maintainers of similar programs in the future.

Methods

The first step in the process of gathering literature for this review was establishing a general scope for inclusion. While community colleges have developed a significant number of textbook alternative incentive programs, these programs differ significantly in implementation from those at four-year colleges and universities, and the latter is the focus of this present study. Similarly, many more incentive programs exist or have existed than those discussed here, but the set of cases to follow includes only those that have been presented in the literature to maximize the narrative description, reflection, and assessment data that are available. The scope of this work is also limited to studies of full incentive programs not individual course implementations or specific resources. Additionally, in recognition of the significant international differences around issues of OER and college affordability, I have considered here only studies of institutions from the United States. A comparison of global trends in OER implementations and incentives in higher education would be a valuable direction for future study but is not the aim of the present work.

With these foci in mind, I constructed and ran a search in five databases: Educational Resources Information Center, or ERIC; Education Source (EBSCO); Educational Administration Abstracts; Library Literature & Information Science Full Text (H.W. Wilson); and Library, Information Science & Technology Abstracts, or LISTA. I selected this set of databases because it comprises those available to me with the most significant literature coverage in education and in library and information science, with multiple databases included in each area to increase comprehensiveness. The search included results published since 2010 that contained variants of the terms "affordable," "alternative," or "replace" anywhere, contained variants of the terms "program" or "initiative" or "fund" or "grant" anywhere, and contained variants of the term "textbook" specifically in the title or subject terms. The term "open" was originally included in the first set of terms, but it returned too many irrelevant results simply concerning the development of individual open textbooks and did not significantly increase the relevant results over the other terms and as such was ultimately eliminated.

When initially conducted, the search retrieved 152 results, of which approximately 30 were selected. I reviewed and weeded these initial 30 results for their relevance to the scope stated previously and reviewed the bibliographic references of each work for additional relevant publications that the original search might have missed. The search also included using the directory of institutions available from SPARC's Connect OER site to identify institutions with financial incentive programs for materials replacement and searching the names of these individual institutions along with variants of the word "textbook" across multiple library and information science databases. In this stage, the search specifically focused on library and information science databases because of SPARC's large academic library membership. After this stage, the results underwent a similar process of review, weeding, and citation mining.

Additional criteria for inclusion and exclusion emerged and were applied after this process to further narrow the results. Sources were included only if they described the development of the program, the assessment of the program,

or both in enough detail to answer most of the following questions:

- Who on campus led or leads the program?
- When and how did it begin?
- What were the steps taken to begin the program?
- Who were the partners on- and off-campus?
- From where did funding come?
- What was the total funding and how much was awarded to each recipient?
- What were the application requirements?
- How many applications have there been?
- What was assessed?
- What were the results?
- What strategies have been considered to increase the impact of the program?

I selected these questions for their particular importance to campus stakeholders who would be responsible for the creation of an incentive program and who would be most interested in knowing what results such a program might produce. Sources were excluded if insufficient detail about the formation or assessment of the program was provided to answer most of these questions. For example, cases where an incentive program was discussed briefly as part of a broad description of campus OER efforts were omitted. Some sources were also excluded because their primary focus appeared to be the creation of an OER publishing platform that happened to be incentivized by grants rather than focusing on replacing textbooks and reducing course costs through the incentive program. Studies focusing more on the content, delivery systems, or pedagogical value of textbook alternatives than on the development and functioning of an incentive program were likewise considered to be out of scope, unless they were connected to a program on which other, more general studies were available.

After establishing a final list of remaining studies had been, I took extensive notes on any description of the development and assessment of programs that had been included and analyzed the results for trends and recurring themes across institutions. Specifically, the answers to each question identified previously were compared across institutions and coded into commonly recurring categories or noted as unique. Where no answer was found in the literature to a question for a given institution, more information was sought on the website and other publicly available materials of the institution's textbook alternative program. If no information could be found by consulting these materials, the answer to that question was noted as "not stated."

Results

Table 1 provides the U.S. institutions included in this review, with the years that their textbook alternative incentive programs began. (Some of the institutions listed established these initiatives as part of a larger program for textbook affordability, but the date provided is the date that the incentive program, specifically, began.)

Leaders and Partners

In the studies examined, program leaders have overwhelmingly been university libraries or library systems. Where libraries were not the sole program leaders, programs were instead led by campus-wide committees that included library representatives; libraries were represented in the leadership of all programs considered. In most cases, however, on- or off-campus partners have also supported programs in conjunction with libraries. Table 2 identifies the leadership and additional partners of each included institution.

University bookstores were, by a narrow margin, the most common partner on textbook alternative incentive programs. This seems surprising given bookstores' presumed interest in the continued sale of traditional textbooks.

Table 1
Institutions and Start Dates of Their Textbook Alternative Incentive Programs

Start date	**Institution(s)**
2010	Temple University
2011	University of Massachusetts-Amherst
2013	North Carolina State University Kansas State University University of California, Los Angeles San Jose State University
2014	University of Oklahoma
2015	University System of Georgia East Carolina University & University of North Carolina-Greensboro (joint collaboration) University of Texas at San Antonio
2016	Rutgers University University of Washington Florida State University University of North Dakota

Table 2
Participants in Textbook Alternative Incentive Programs by Institution

Institution	**Program leader(s)**	**Other partners on program**
Temple University	Library	None
University of Massachusetts-Amherst	Library	Faculty centre OpenStax Open Textbook Network Provost's office
North Carolina State University	Library	University bookstore
Kansas State University	Collaborative university-wide faculty team, including library representatives	Student government University administration University senate
UCLA	Library	California Digital Library Student government University bookstore University senate University system administration
San Jose State University	Library	Faculty centre University bookstore University system administration
University of Oklahoma	Library	College of Arts and Sciences College of Business Faculty centre OpenStax Open Textbook Network

University System of Georgia	Libraries network	GALILEO (virtual library project) Online core curriculum leadership OpenStax State of Georgia University presses
East Carolina University & University of North Carolina-Greensboro	Libraries	Provost's office University bookstore
University of Texas at San Antonio	Library	Faculty centre OpenStax Registrar Student government University bookstore
Rutgers University	Library	Student section of NJPIRG (public interest research group)
University of Washington	Library	Friends of the UW Library organization Open Textbook Network Rebus Foundation
Florida State University	Library	None
University of North Dakota	University-wide committee chaired by library and provost representatives	Faculty Student government Technology and instruction centres

While Agee and Mune (2014) note the apparent strangeness of such partnerships, they claim that most university bookstores now rely on the revenue streams from other merchandise more than that of textbooks and tend to find that the goodwill generated by collaborating on textbook affordability outweighs the revenue lost by decreasing textbook sales (p. 18).

Funding and Awards

Numerical comparisons of incentive programs based on the literature are not necessarily definitive due to differences in measurement strategies, lengths of assessment periods, and other factors between studies. Nonetheless, a few rough patterns do emerge on comparison of funding sources, total amounts, and amounts per award by program. Table 3 shows this information (where available) for the represented institutions.

Library budgets were the most common source of funds (where stated) by a significant margin, while various grant sources from within or without the university system were also relatively common. No individual program described investing more than $60,000 total in incentive grants, and most total funding pools were somewhere between $10,000 and $40,000, with a substantial number also totaling less than $10,000. Some institutions opted for a flat amount for individual awards, while others used tiered funding distributions that provided larger incentives to faculty teaching higher-enrolment or higher-impact courses. In either case, only one program offered award amounts of less than $500 and only one offered amounts of more than $5000, and for the minimum award amount was most commonly between $500 and $1000.

Table 3
Funding and Awards for Textbook Alternative Incentive Programs by Institution

Institution	Funding source	Total funding pool	Amount per award
Temple University	Library budget	Not stated	$1000
University of Massachusetts-Amherst	Library budget Provost	$10,000	$1000 for smaller classes $2500 for larger classes
North Carolina State University	Not stated	Not stated	Between $500 and $2000
Kansas State University	University grant Library budget Administration (later)	$60,000 (first round) $40,000 (second round) $50,000 (administration funding)	Not stated
UCLA	Library budget University system grant Campus partners	$27,500	$1000 for courses under 200 enrolment $2500 for courses over 200 enrolment
San Jose State University	University system grant	$20,000 (first round) $49,000 (second round)	$500–$2000 (first round) $1000 (second round) $1500 (final)
University of Oklahoma	Not stated	$9600 (pilot)	$1200–$2500 (pilot) $250–$2500 (second year)
University System of Georgia	State budget	Not stated	Up to $10,800 for courses under 500 enrolment Up to $30,000 for courses over 500 enrolment
East Carolina University & University of North Carolina-Greensboro	Library budget Provost State grant	$10,000 (pilot) Not stated for grant phase	$1000
University of Texas at San Antonio	Library budget	$7500	$1500
Rutgers University	Library budget Donor funding	Not stated	$500 - $1000
University of Washington	Friends of the Library grant	$4500	$1500
Florida State University	Library budget	$6000	$1000
University of North Dakota	Local foundation Library donor fund	$25,000 (partially for non-incentive costs)	$3000

Table 4
Applicants and Requirements for Textbook Alternative Incentive Programs by Institution

Institution	Total applicants	Accepted applicants	Grant requirements
Temple University	11	11	Proposal only
University of Massachusetts-Amherst	8	8	Workshop attendance Assessment Syllabus submission Repository deposit of materials Final report
North Carolina State University	Not stated	Not stated; 20 total courses	Application only
Kansas State University	14	12	Application only
UCLA	27	Not stated	Workshop attendance
San Jose State University	23	Not stated; 25 total sections in first round	Workshop attendance Syllabus submission
University of Oklahoma	Not stated	5	Application only
University System of Georgia	Not stated	29+ in round 1	Assessment Sustainability measures Open access to materials Final report Peer review (highest level)
East Carolina University & University of North Carolina-Greensboro	22 (pilot) Not stated (grant phase)	10 (pilot) 38 (grant phase)	Meet with librarian
University of Texas at San Antonio	11 (first round) 33 (second round)	5 (first round) Not stated (second round)	Application only
Rutgers University	Not stated	32 (first round) 57 (by time of writing)	Assessment Syllabus submission
University of Washington	3	2	Proposal only
Florida State University	7	6	Memo. of understanding Workshop attendance Meet with librarian
University of North Dakota	2	2	Workshop attendance Meet with librarian

Applicants and Requirements

Most programs appear to have had relatively few applicants and awardees, where numbers were provided, with almost all having fewer than 30 total applicants and several having fewer than 10. A majority of programs also accepted a relatively high percentage of their applicants, with a significant majority either accepting all applicants or accepting more than two-thirds of the total pool. Only two programs that provided application and acceptance statistics accepted fewer than 50% of those who applied. By a narrow margin, the majority of programs also required only an application or proposal, but other common requirements were for faculty to attend a workshop on implementing textbook alternatives, to submit a proposed syllabus revisions incorporating the replacement materials, to participate in some form of assessment of the program, to meet with a librarian for support, to submit a final report on their project, or to make any modified or created materials available openly in kind either via the institutional repository or otherwise. Applications for the University System of Georgia's grants were also required to describe the measures they intended to take for sustainability, and applications for the largest and most far-reaching award type (aimed at textbook replacements affecting entire departments or institutions) were required to undergo double-blind peer review (Gallant, 2015).

Table 4 provides the number of applicants to each program, the number that were accepted and funded, and what was required of faculty to apply for a grant where each was stated.

Student Impact and Cost Savings

As mentioned in the section on funding and awards, comparing the numbers of students impacted or their cost savings across multiple institutions is difficult since not all institutions measured comparable spans to one another, and the time frame or calculation formula used for a reported figure is not always clear. Rough categories of impact do emerge from the literature, but these are not necessarily accurate representations of the current state of these programs. Table 5 provides the reported estimates of students impacted and cost savings by programs where these were given.

With regard to the figure stated for the University System of Georgia, it should be noted that Croteau (2017) gives the figure for the first round of grants as $760,000, which does not seem compatible with the $9 million figure provided by Gallant (2015). This may be due to a difference in calculation methods between the two authors, as the formulae in use are unclear. Given the amount of the system's grants, its state support, and affiliated efforts to eliminate materials costs for online courses across the system, however, it is also not impossible for the cost savings to have increased to this degree over time.

Most studies that reported numbers of students impacted indicated that their programs had affected fewer than 2000 students—relatively few, given the enrolment numbers for most of these institutions. Many of these studies were, however, reporting on pilot programs, and presumably future efforts would seek to expand their scope of impact. Moreover, in those instances where both an initial total investment amount and an estimation of cost savings were included, the difference of the two was generally substantial. Figure 1 shows the initial investment and cost savings by institution where stated.

An important caveat when comparing these numbers is the point that student cost savings are not calculated identically by each institution. The most commonly cited method of calculating cost savings was to multiply the cost of course materials before and after program participation by the number of enrolled students and subtract the latter from the former, but precise applications of this formula varied. At Florida State, for example, this formula was used with

Table 5
Students Impacted and Cost Savings from Textbook Alternative Programs by Institution

Institution	Estimated students impacted	Estimated cost savings
Temple University	Not stated	Not stated
University of Massachusetts-Amherst	1600 (2011–2015)	$101,632 (2011–2015)
North Carolina State University	Not stated	$250,000
Kansas State University	10,941 (2015–16) 17,963 (first two years total)	$921,000 (2015–16) $1.61 million (first two years total)
UCLA	Over 1000	$112,000
San Jose State University	777 (first round)	$117,739 (first round)
University of Oklahoma	420 (pilot)	$116,000 (pilot) $274,000 (second year, first semester)
University System of Georgia	Not stated	$9 million (first two rounds)
East Carolina University & University of North Carolina-Greensboro	Not stated (pilot) 3300 total (grant phase)	$150,120 (pilot) $547,000 total (grant phase)
University of Texas at San Antonio	568	$94,000
Rutgers University	9000	Over $2 million
University of Washington	180	$27,000
Florida State University	Not stated	$56,000
University of North Dakota	Not stated	$3.7 million maximum (two years)

an estimated average of students enrolled annually in the courses in question (Soper et al., 2018), while UCLA and UMass-Amherst used actual observed enrolment numbers but estimated the costs of course materials (Smith, 2018; Farb & Grappone, 2014). Reporting on the program at San Jose State included both estimated and actual savings. The former was calculated based on the estimated number of students or the enrolment cap and the list price of previously used materials and the latter based on the actual observed total cost of course materials and number of students who actually enrolled (Bailey & Poo, 2018). At the University of Oklahoma, potential cost savings were calculated in advance for purposes of evaluating proposals, using a similar formula of projected enrolment multiplied by original and reduced costs of materials, but it unclear whether this was also how the final cost savings were calculated (Waller et al., 2018). A number of other studies provided no formula for their cost estimates at all, and descriptions of the programs at UT San Antonio and the University of Washington stated only that cost savings were calculated by their partners at OpenStax or the Open Textbook Network (Ivie & Ellis, 2018; Batchelor, 2018).

Further complicating the matter, several authors suggested that student cost savings may be lower than the estimations because of methods that students commonly use to acquire textbooks for less than what the texts would cost if purchased new, such as rentals, buying used texts, using older editions, and similar methods (Lashley et al., 2017; Walker, 2018; Todorinova & Wilkinson, 2019). Kansas State program evaluators even attempted to compensate for

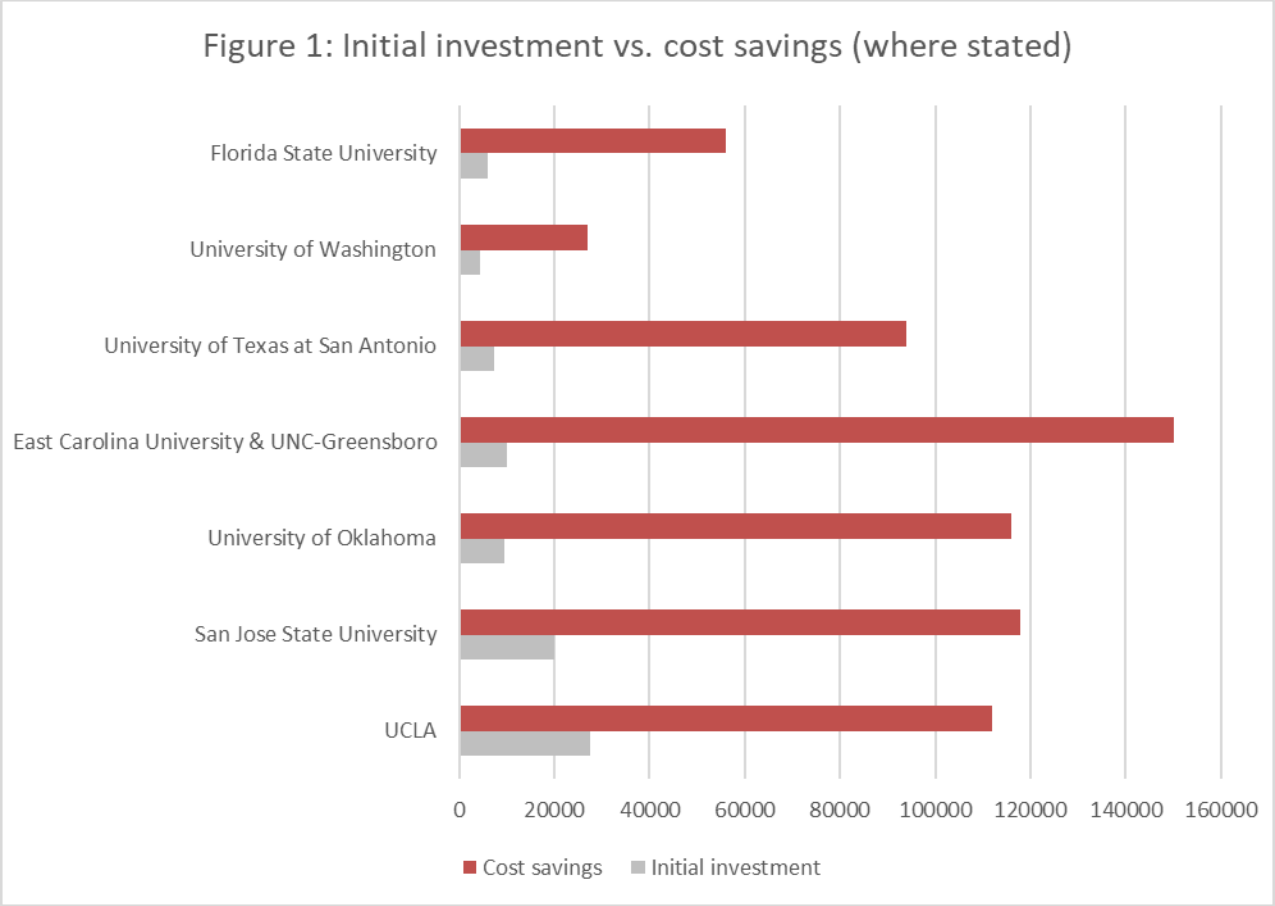

Figure 1
Initial investment versus cost savings (where stated).

this consideration in their calculation formula for student cost savings by using the actual cost of textbooks in their calculations only if they would have cost under $100 and using $100 as a flat cost for any texts costing $100 or more (Lashley et al., 2017). The study at the University of North Dakota simply acknowledged that its calculation using original new textbook costs multiplied by enrolment numbers represents a maximum possible cost savings to students from the program and that the real impact was most likely lower (Walker, 2018).

Other Trends in Assessment

Student impact and cost savings were the most commonly assessed data from incentive programs, but a number of programs also included assessment of other factors. In several studies, student academic performance was measured before and after the implementation of textbook alternatives, and in all cases performance was found to be the same or better afterward (Smith, 2018; Croteau, 2017; Thomas & Bernhardt, 2018). Furthermore, Grimaldi, Mallick, Waters, and Baraniuk (2019) have pointed out that measures of textbook alternatives' impact on student learning to date have probably underrepresented the benefits because the measures examine the difference in performance of all students in the course and not only the students who could not otherwise have afforded access to the textbooks, which does not accurately represent where the impact on learning should be expected.

Table 6
Results of Student Feedback on Textbook Alternative Programs by Institution

Institution	Positives noted by students	Negatives noted by students
Temple University	Cost savings	Preference for print
Kansas State University	Cost savings Ease of access Customization	Preference for print Dislike of specific replacements used
UCLA	Cost savings	Not stated
University of Texas at San Antonio	Accessibility Ease of use	Not stated
Rutgers University	Cost savings Ease of use	Difficulty in notetaking and collaboration

Table 7
Results of Faculty Feedback on Textbook Alternative Programs by Institution

Institution	Positives noted by faculty	Negatives noted by faculty
Temple University	Cost savings to students Increased student access Ability to customize & update	Time investment
North Carolina State University	Improved teaching	Not stated
Kansas State University	Cost savings to students Improved teaching Ability to customize & update Perceived student satisfaction	Time investment Technological issues Copyright challenges
UCLA	Improved teaching	Not stated
University System of Georgia	Improved teaching	Not stated
University of Texas at San Antonio	Improved teaching	Quality concerns
University of Washington	Improved teaching Ability to customize & update	Time investment Quality concerns

Beyond performance measures, both faculty and student feedback on textbook alternative incentive programs was overwhelmingly positive at all institutions where it was collected. Tables 6 and 7 detail specific positives and negatives noted in student and faculty feedback, respectively, for those programs where it was collected.

It is also of note that when students were asked to evaluate the quality of the materials they were provided in lieu of textbooks at University System of Georgia institutions, the principal finding was that students were not effective evaluators of resource quality, and their estimations were disproportionately swayed by superficial factors like visual appearance (Croteau, 2017).

Identified Challenges

Some authors identified major challenges in implementing their institutions' programs. As suggested previously, one of the most

commonly recurring challenges was the amount of time and effort that implementation required for participating faculty, and some program organizers observed a need for increased recognition of faculty efforts in this area with regard to tenure and other professional advancement decisions (Agee & Mune, 2014; Delimont et al., 2016; Bazeley et al., 2019). The need for relevant faculty training and support was also widely recognized, and faculty feedback at some institutions indicated that more support was needed than had been provided (Bailey & Poo, 2018; Young, 2016; Delimont et al., 2016; Subramony, 2018).

Strategies for Sustainability and Increasing Impact

Many of the programs discussed in the literature were in early stages or pilot versions at the time of writing, and few were in a position to discuss any sustainability planning or outcomes specifically. Most authors, however, at least discussed future directions for the program in question, the majority of which focused on increasing the program's impact. These strategies could be said to be a means of planning for sustainability in themselves, as the greater the program's apparent success the greater the likelihood of continued funding and labor to support it.

The most common planned strategies for ensuring sustainability and increasing the impact of programs were targeting courses with particularly high enrolment or with high course costs or both and working to increase collaboration with additional partners across campus, particularly faculty and other units. Table 8 lists the planned strategies for increasing impact for the institutional programs where they were given.

Unique Program Elements

While some common trends can be observed across multiple institutions, there are a few programs with unique and notable elements in their design, implementation, or context. The University System of Georgia's Textbook Transformation Grants program, for example, clearly represents something of a standout case among those described as it spans a full system of state institutions, is funded at the state level, and provides awards that are closer to full grants than the micro-grant models used at other universities. It is also unusual because, while other programs offer tiered awards based on enrolment numbers, the Textbook Transformation Grants program actually offers four different grant types based on type of alternative implementation: one for faculty simply using OER or other resources with no cost to students; one for faculty using open textbooks produced by the initiative OpenStax with whom the program is partnered; one for faculty creating course packs sourced from library resources in partnership with a librarian; and one for large-scale transformations of multiple courses, a department, an institution, or multiple institutions (Croteau, 2017). At the same time, the last funding level would surely not be possible without state-level support for the program and the possibility of relatively large awards. Similarly, UCLA and San Jose State were both able to develop relatively large funding pools and disburse relatively high numbers of awards in large part due to investment in their programs from the state level (Farb & Grappone, 2014; Bailey & Poo, 2018). When local governments invest in the affordability of higher education in this manner, there does seem to be an impact on the relevant programs.

Internally, however, other institutions have been able to use innovative approaches to improve the effectiveness of their incentive programs. NCSU's program, one of the oldest and most influential, stands out for its use of data from its parallel textbook lending program to inform choices of target for the textbook alternative incentive program (Thompson et al., 2017). This hybridization shows the value of taking a multivalent approach to textbook affordability and how one initiative at an institution can be

Table 8
Planned Strategies for Ensuring Sustainability and Increasing Impact by Institution

Institution	Sustainability and impact strategies planned
University of Massachusetts-Amherst	Targeting high-enrolment/high-cost courses Increasing collaboration across campus Moving to a tiered funding structure Increasing overall funding Providing release time for participating faculty
North Carolina State University	Targeting high-enrolment/high-cost courses Providing greater support to participants Moving to a tiered funding structure Seeking support from student government Department- or curriculum-level replacement
Kansas State University	Increasing collaboration across campus Department- or curriculum-level replacement Funding program from student tuition
UCLA	Targeting high-enrolment/high-cost courses Seeking more applicants Assessment and program improvement
San Jose State University	Targeting high-enrolment/high-cost courses Department- or curriculum-level replacement Seeking more applicants
University of Oklahoma	Targeting high-enrolment/high-cost courses Increasing collaboration across campus Providing greater support to participants Pushing open sharing of adapted/created materials
East Carolina University & University of North Carolina-Greensboro	Targeting high-enrolment/high-cost courses Providing greater support to participants
University of Texas at San Antonio	Increasing collaboration across institutions
Rutgers University	Increasing student awareness of affordability initiatives
University of Washington	Using Rebus Foundation partnership to distribute labor
Florida State University	Targeting high-enrolment/high-cost courses Increasing collaboration across campus Increasing collaboration across institutions
University of North Dakota	Increasing collaboration across campus Seeking support from student government

used to improve another. Kansas State's program is remarkable for its unusual level of success and penetration into the culture of the university, with support from across the administration and multiple units of the institution, and a funding pipeline directly from university-level student fees and donations (Lashley et al., 2017). The secret to its success may be in its origin as a multi-departmental faculty collaboration, which was effective and timely enough to attract the interest and support of the administration. Finally, the program at East Carolina University and UNC-Greensboro is unique in being a partnership between two universities to create a communal incentive program and thus maximize their resources and return. Even where other institutions are within the same state or even system, most have tended

to maintain their own individual programs. The case of East Carolina University and UNC-Greensboro, however, alongside that of the University System of Georgia shows that cross-institutional collaboration has the potential to make universities more successful in their efforts than they could be alone.

Discussion

Limitations

By its nature, the present review is limited in its representation of textbook alternative incentive programs. As a narrative review of the literature, it is bound by the acknowledged limitations of such reviews, specifically a lack of critical appraisal of the evidence found in the literature and strict evaluative criteria for inclusion. Given the relative newness of these types of programs and the scarcity of the available literature, all relevant studies were included to maximize the size of the data pool without regard for methodological rigour by individual authors. This uncritical approach and the inconsistencies in available data from the studies that were included may ultimately skew the perceived results.

Furthermore, for the reasons that were discussed in the Methods section, I consulted only published literature (and primarily peer-reviewed scholarly and professional literature). This decision conflicts, however, with the fact that even the oldest programs of this type are less than a decade old, and many programs are likely not yet at a stage to yield publishable results. Programs not represented in this review may eventually yield significantly different results than those that have been discussed. Many programs are also likely still not in their final forms and may continue to change over time given the relative newness of these types of intervention. There is a need for ongoing investigation and review of incentive programs like those discussed here as well as similar discussion of programs at community colleges and outside the U.S.

Libraries as Collaborative Leaders

It is fair to say that libraries provide the leadership for the majority of incentive programs discussed here. Equally apparent, however, is that in each of these cases partnerships with other bodies across campus, and even outside of it, have been vital. Involving administrators, faculty, and students in the process of managing incentive programs and other textbook affordability measures has been a key component of the success of all of these programs and has allowed the library to build buy-in across communities, share leadership with other stakeholders, and learn more about their needs and perspectives on the issues. Working with broader OER organizations and communities also provides leadership support for librarians in working with these programs and in many cases has helped to source the resources that faculty use when replacing their textbooks (such as in the cases of partnerships with OpenStax and the Open Textbook Network). The program descriptions indicate that support from the state government can increase what an incentive program is capable of offering and accomplishing—but it is quite possible for a program to be very extensive, well-funded, and successful without the support of the state, such as in the case of Kansas State. Funds can be drawn from a variety of sources, and strong collaborations within campus seem from the literature to be a more reliable predictor of success than support from without.

Benefits of Incentive Programs

Another strong indication of the literature is that the return on investment of incentive programs is very high, both in terms of numbers of students impacted and the textbook cost savings effected. None of the programs examined seem to have invested much more than $50,000 total in their incentives and most much less than that. Yet student cost savings have been reported in the hundreds of thousands or even millions for the same programs with impacts on hundreds,

thousands, or tens of thousands of students. As previously mentioned, establishing direct connections between the inputs and outputs of various programs is difficult due to their differences in measurement approaches, but the total funding amount for a program does not always seem to be closely related to its eventual impact. The number of students that each individual faculty recipient is able to reach by replacing textbooks may be a more significant factor than how many faculty receive awards or the size of the awards they receive. In any case, it is impressive to produce these kinds of results by distributing micro-grants of only $500 to $2500 to only 10 to 30 faculty members. Tiered awards by enrolment numbers may be an effective approach to targeting higher-impact courses, although enough assessment data of such structures is not yet available to make a determination.

Beyond cost savings, faculty and student responses to these programs have been reported as highly positive across all studies where they have been collected, with some notable minor drawbacks failing to outweigh the overall benefits. Not only do students and faculty both value the financial savings for students in these cases, but faculty at some institutions have reported feeling that they have become better, more thoughtful, and more innovative educators as a direct result of implementing textbook alternatives. Using OER or strategic selections from the library collection appears to help faculty think more critically and more deeply about their subject matter than does simply using a preset commercial textbook, and developing new OER can be seen as a valuable scholarly pursuit that deepens disciplinary knowledge and pedagogical deliberation. A vitally important next step, however, will be the appropriate recognition of this work with respect to faculty tenure and professional advancement decisions. Not only is it vital to acknowledge faculty efforts toward creating open resources as the scholarly participation that these resources represent, but also it is necessary for faculty to be supported in this way if they are to make time for participation in the OER world amid their already busy schedules. The studies also indicate the vital importance of providing support in the form of training, professional development, and guidance as faculty take on these new challenges so that their efforts are successful and their participation in the program continues. Encouragingly, there is mounting evidence that fears about textbook replacement's negative impacts on student performance have been unfounded, as the majority of cases have seen unchanged or improved academic achievement with the implementation of new resources. The positive impact is likely even greater than has been reported. The points made by Grimaldi et al. (2019) about the insufficiency of statistical approaches in this area are well taken.

Conclusions

The emerging literature on textbook alternative incentive programs indicates that these programs have a significant positive impact. Primarily, the studies considered here have found these programs to greatly benefit students financially and to inspire improvements to faculty pedagogy. Furthermore, the programs are relatively affordable to begin and maintain, especially compared to the returns on the investment that have been reported. There are still significant barriers to entry associated with these initiatives, particularly faculty time and training and buy-in from both faculty and students, but cross-campus collaborations and expanding the types of incentives offered to faculty may help to increase participation. It is also worth noting, however, that there is a great deal of diversity in institutional approaches to these types of programs. The literature shows no standardization to speak of nor even sufficient evidence for a set of best practices or recommendations to emerge. While enough prior examples exist that each new institution initiating an incentive program need not reinvent the wheel, program developers at each institution will have to carefully consider their institution's individual needs and characteristics

to develop the approach to funding, leadership, number of awardees, implementation, and assessment practices that will be most effective locally.

A major concern for the future of several programs considered here is increasing student impact and the resulting cost savings. This is not surprising given that these are the primary criteria by which these types of programs have tended to be assessed. A number of potential strategies for accomplishing this have been discussed, but it may be that the most effective way to increase impact is simply to find ways to develop buy-in and investment from more and more units across campus as evidenced by the extraordinary success of the program at Kansas State. Indeed, the most important factor in these programs so far may also be the one that holds the key to growth and success in their future: partnerships. Collaborations within and between universities between different fronts in the fight for college affordability and across systems and consortia all seem to hold the most promise in terms of improving and expanding textbook alternative incentive programs and other efforts to improve educational access and success. The strength of communities and organizations working together is clearly felt in all the success stories that have been recounted here, and if that lesson is taken to heart, even greater successes may lie ahead.

As research in this area is still limited, a number of possible directions exist for future studies to pursue. A review of the literature (and possibly other documentation) on programs at community colleges would be of value for comparison to these findings and analysis of the similarities and differences in approach between different institutional types. Studies of the practices of institutions outside the U.S. would also be of significant interest. A more comprehensive review of data on all existing incentive programs, including those without associated publications, would be a daunting task but also potentially of substantial value. Furthermore, as indicated by Grimaldi et al. (2019), there is a need for more rigorous and more nuanced analysis of the impact of implementing alternatives on students' academic performance because the results in this area have thus far been inconclusive. Similarly, moving toward standardization of institutional formulae for calculating student cost savings would be tremendously beneficial as future researchers seek to more accurately understand the impacts of these programs.

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