Affordable Instructional Resources Initiatives at Universities in the USA

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Abstract

Affordable higher education is one the most pressing issues in the United States which get intensified when coupled with rising costs of textbooks and educational materials. One of the effects of high costs of instructional materials is that it impacts undergraduate students' college choices, results in course withdrawals, and poor academic performance. The objective of this study is to explore the components that are needed to launch and sustain Affordable Instructional Resources (AIR) initiatives (course materials provided at little to no cost) at highly selective universities. The study has employed a qualitative approach and collects data with the help of artifact analysis. The results display several strategies to build and sustain the AIR initiatives.

Keywords: affordable instructional resources, highly selective universities, student support, Undergraduate students.

Background

In the United States, the academic success of undergraduate students and graduation completion rates are largely based on their undergraduate learning experiences. These experiences are closely linked to affordability which is defined as the ability to pay for needed or appropriate education (Baum & Ma, 2014). According to Hill & Vaughan (2019), "the cost of course materials is outpacing the rate of inflation" and hence, "students are struggling to afford necessary materials and, as a result, are suffering academically" (p. 1). As this and other studies show, economic factors play a large role in the success of undergraduate students. Thus, the increasing costs of educational material may become one of the major obstructions to undergraduate students' learning.

As the high cost of course materials has attracted recent attention at the U.S. universities, and therefore, each student-incurred cost has undergone a thorough analysis. The average cost of books and supplies for a college student is estimated at $1,240-$1,440 for the 2018-19 academic year (The College Board, 2019); and it is reported that two-thirds of students will not use a textbook because of the cost (Diaz, 2017). College students increasingly forego textbook purchases and this lack of access results in course withdrawal and poor performance (Woodward, 2017). The ever-increasing costs

have a greater impact on low-income, and first-year students, all of whom represent the most vulnerable class of students from a student access perspective (Tinto, 2006).

To offer affordable education, it is imperative for selective universities and colleges to either reduce what Gearhiser (2016) terms the "hidden cost" of higher education or provide free instructional resources to their students. And therefore, the present study asks: *At highly selective universities, what are the components that are needed to launch an Affordable Instructional Resources (AIR) initiative (course materials provided at little to no cost)?*

Students at highly selective universities have been demanding their institutions pay attention to the rising costs of not only textbooks but other course materials like online homework platforms, software, art material, and laboratory instruments (Goulding, 2018). This inquiry is important because of growing concern over rising instructional material costs expressed by students, along with the underrepresentation of low-income and minority students at highly selective institutions (Reardon et.al., 2012; Giancola & Kahlenberg, 2016).

This research, studies websites of highly selective universities in the United States that have launched the AIR initiatives. It details out the composition of the AIR and the actions of the universities to launch and run the initiative. By contributing to the research on affordability factors, this study should foster equitable learning experiences and contribute to students' success.

To understand the available literature, the following section analyses the existing research and accordingly the domains of the literature review follow.

Literature Review

This literature review aims to find out the organization of the AIR initiatives. There is very little research on highly selective institutions and their efforts in making instructional resources affordable to their undergraduate students. The first domain of this literature describes what are highly selective institutions, their students' profiles, and shifting demographics. The second domain analyses the need for AIR initiatives and related efforts.

Highly Selective Universities and Changing Demography

Highly selective universities are characterized by their admission selectivity criteria. However, with access and affordability initiatives undertaken by the selective universities, the trends are changing as they are admitting and accommodating an increasingly diverse student body.

What are highly Selective Universities?

Selectivity is defined by high rejection levels and high yield among the relatively few who gain admission. Many colleges and universities consider selectivity in admissions as an institutional

goal with as much weight as the goals of educational excellence. According to Lewis (1988), there are two fundamentally different approaches to selectivity: the first approach argues that a college's selectivity is measured by the proportion of applicants denied admission, whereas the second approach is based on the quality of the students who enroll. This also means that in selective universities "the number of applicants far exceeds the number of available positions," and thus those universities exercise "considerable discretion in the admission process" (Ehrenberg & Sherman, 1984, p. 204).

Nearly all selective institutions are also among the wealthiest (Kuh & Pascarella, 2004). One higher education association that includes such wealthy institutions is the Consortium On Financing Higher Education (COFHE) (Brint & Clotfelter, 2016). COFHE is comprised of 35 member institutions: highly selective, private liberal arts colleges and universities, including all eight Ivy League schools and the five of the surviving Seven Sisters. Its member institutions are "committed to meeting the full demonstrated financial need of its admitted students" (" Consortium on..," n.d.). The admission goals of each COFHE institution may vary, but there are certain similarities within their student profiles. The admission criteria and the number of related factors determine who enters these highly sought-after institutions.

Student Profile

What are those factors contributing to the prospects of admission into highly selective universities? Test scores, grade point averages, course selections, extracurricular activities, and personal essays are all considered during the admission process (Bastedo & Flaster, 2014). According to a study by Stanford's Centre for Education Policy analysis, not only achievement profiles but race and income are strongly associated with enrollment in highly

selective colleges over the last 30 years (Reardon et al, 2012). The racial gaps in enrollment at selective institutions occur partly because "Black K–12 students are more likely than their White counterparts to attend underfunded schools, are taught by inexperienced and out-of-field teachers, and assigned less rigorous coursework" (Nicholas & Evans-Bell, 2017, p 3).

According to Department of Education (2016) data, 72% of students in the nation's selective institutions are from families in the wealthiest quartile —the top 1% of the income scale. High-achieving students from the bottom socioeconomic quartile are only one-third. The disparity of income has grown over time as more seats in highly selective schools have been filled by students from high-income families. Just as stark as income disparities are racial disparities in selective institutions, as evidenced by the fact that Black and Hispanic students remain substantially underrepresented (Reardon et al, 2012).

Though the dominance of white and wealthy students in highly selective universities exists, there are consistent efforts in increasing the number of underrepresented minority and low-income students.

Changing Trends in Students' Demography

Despite continuing efforts of highly selective institutions in increasing the access of underrepresented minorities and low-income students, inequality and underrepresentation exist (Glynn, 2017; LaViolet&Wyner, 2018). To enhance access, highly selective universities have employed several measures. Programs like "Detroit Promise Path" of Manpower Demonstration Research Corporation (MDRC) provide students with campus coaches and financial stipends to help them both successfully enroll in college and persist beyond the first semester (Ratledge, 2016).

Similarly, COFHE institutions are also committed to fulfilling their students' demonstrated needs. This entails the need for efforts to make education affordable to diverse student bodies —AIR initiatives would count as one of them.

Affordable Instructional Resources Initiatives (AIR)

Affordable Instructional Resources take various forms in universities and colleges, as many are making consistent efforts to meet the objectives of their affordable materials initiatives.

Need for Affordability of Instructional Resources

As the cost of education and course materials has garnered attention over the recent past, each student-incurred cost has undergone a thorough analysis. According to the U.S. Bureau of Labor Statistics, prices for educational books and supplies were 145.34% higher in 2019 versus 2000 (a $145.34 difference in value) (Bureau of Labor Statistics, 2019). A 2015 analysis of Bureau of Labor Consumer Price Index (CPI) data found that textbook prices rose by 1041% from 1977 to 2015, over three times the rate of inflation (308%) over the same period (Popken, 2015). An independent analysis of CPI data (Bureau of Labor Statistics, 2016) found that textbook price increases outpaced even the overall cost of college tuition during the same period. At an increase of 778% during this period, college tuition rose at more than double the rate of inflation but did not approach the inflation of textbooks. Interest Research Groups (PIRGs) state that students pay an average of USD 1168 on textbooks and other course materials per year (Student PIRGs, n.d.).

The net result is that rising textbook and course material costs are more noticeable among low-income, first-generation, and first-year students, all of whom represent the most vulnerable from a student success perspective (Tinto, 2006). Concrete steps have been taken at the legislative, aggregate (consortia), and institutional level to ensure students' success, access to, and affordability of instructional resources,

Legislative Efforts. The federal government has taken several steps to increase access to higher education in general - central to the goals of the Higher Education Opportunity Act (Higher Education Opportunity Act, 2008; Capt, 2013). As a continuation of the Act of 2008, the federal textbook price disclosure law was issued on July 1, 2010, which considers costing as an integral part of textbook selection. According to this act, institutions are required to disclose "to the maximum extent practicable," textbook information, including cost, in their course schedules during the registration process. It also requires colleges to list ISBNs and retail price information for the required and recommended textbooks for each class in the course schedules. This is intended to allow students to shop around for cheaper textbooks (Student PIRG, 2010; US Department of Education, 2008). Over 30 states introduced legislation related to the textbook issues addressed in the act (West Virginia Higher Education Policy Commission and Community and Technical College System, 2009).

The effort to fight the ever-rising price of textbooks and supplemental materials has culminated in the creation of networks and consortiums like OTN and UNIZIN.

Notable Consortia Programs. Apart from the legislative efforts the consortia level programs are emerging in support of affordable alternatives. The Open Textbook Network (OTN) and UNIZIN are such notable examples in which multiple institutions contribute to the consortia to support the open textbook library, ongoing professional development, and community of practice (Salem Jr. 2016). UNIZIN, which is comprised of a dozen large institutions, is developing an instructional ecosystem using vendor-created and consortia-developed solutions. Their goal is to encourage cross-institutional sharing and the development of open and affordable course content (UNIZIN, 2016).

AIR Initiatives at Higher Education Institutions. Universities and colleges in the United States have pioneered the cause to reduce cost or make textbooks available for free to their students. Many university systems have initiated projects to offer affordable textbook options such as eTextbooks, textbook rental models, and open textbooks (Hull & Lennie, 2010; Johnson, 2011; Maxwell, et. al., 2011; Young, 2010a; Young, 2010c). At the institution level, the AIR initiatives take various forms owing to differences in their composition, advocacy, and funding. There are different names for the initiatives depending on their goals and objectives. For example, OER, which encourages the use of open-access textbooks.

Research Methodology

This study employs a qualitative approach; artifact analysis —a review of publicly available data from websites.

Artifact Analysis

The purpose of this method was to explore components of AIR for benchmarking. Two types of data sources were utilized here: university websites and publicly available documents at highly selective universities that describe the strategy, organizational structure, staffing, funding, and assessment of AIR. The purpose of this method was to find out the themes that emerge while analyzing university websites that will be used for benchmarking. Since this was an exploratory search, an inclusion criterion was utilized to locate the pertinent resources. A list of keywords such as "affordable educational material," "affordable instructional resources," and "affordability of textbooks" were used to identify universities that have established AIR initiatives and included in the analysis. From the targeted university websites, major segments that mentioned AIR were identified and recorded on coding sheets and further categorized into meaningful themes such as need, composition, impact assessment, and sustainability of AIR initiatives. The themes created an overall picture of the AIR initiatives at several universities.

In conclusion, the data collected in this study potentially could be used for benchmarking and provide a comparative analysis of various highly selective universities running AIR initiatives.

Data Results Summary

Broadly, the data provide a picture of how highly selective universities build, implement, and sustain AIR initiatives. Once all secondary data is collected from websites and institutional document analysis, the study utilized an open-coding method to identify key themes. Starting with the artifact analysis, this section summarizes the findings from the website search of universities.

Artifact Analysis

The objective of the artifact analysis, the website search is to explore AIR initiatives at higher education institutions in the United States that would inform the overall approach of universities towards affordability. There exists a volume of institutions that have launched AIR; their websites were identified using a Google search. The search resulted in identifying 40 institutions that have used public-facing landing web pages that use one of the search keywords. After examining all 40 web pages, 22 institutions that feature AIR initiatives were identified, meaning they have a dedicated web page or section describing AIR initiatives.

Types of Institutes with AIR Initiatives

Institutes are divided according to the funding types, Private or Public, and further identified as highly selective institutes.

Figure 1.

Number of institutes identified with AIR initiatives and their types
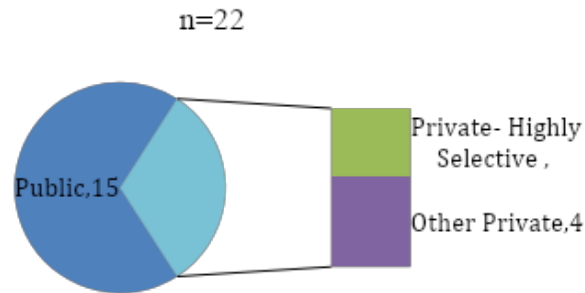
After identifying the institution types, the researcher noted the following features on their websites: name of the initiative; how are the initiatives supported or sponsored; and the strategies to contain or reduce the cost of instructional materials.

Institutional Support/ Sponsorship

Each institute under the study is building the AIR initiative either with the support of a single or several university units. The most identified units during the search are libraries, the office of the Provost/Chancellor, special task forces, or a combination of two or more. To be precise, out of 22 universities at 20 the AIR initiatives are supported by libraries in collaboration with special task forces. The task forces are comprised of faculty, staff and administrators, and/or the chancellor/ provost's office. For example, in California State University, the chancellor's office and library run the initiative, while nine other universities from the list have special task forces to lead various projects under AIR. Some of the other university units that merit attention are campus book stores, student governance, office of diversity, and low-income-first-generation office. At Stanford and Bernard College, the AIR initiatives are spearheaded by the Office of diversity and a low-income-first-generation office. On the other hand, the University of California, Los Angeles, the University of Texas at Austin, and Duke have partnered with the student government and campus bookstore. In summary, AIR is supported by a combination of several units on university campuses. They are presented in Figure 7 below:

Table 1.

List of campus units

University departments/units supporting Affordable Instructional Resources Initiatives				
Central administration such as the office of the- President Provost Chancellor Registrar Diversity & Inclusion Low-income & First generation Academic Senate	**Libraries**	**Special Taskforces comprising of several stakeholders such as** - Faculty, Administrators, Librarians, and IT personnel	**On-campus Books stores-** such as Barnes & Noble, Co. Op.	**Student Government**

Strategies

The affordability initiative takes various forms in universities based on their objectives. Some universities have a single project for reducing textbook prices and some have multiple projects intended to reduce the costs of instructional material such as software, art material, clickers, lab gears, coats, and laptops. The stakeholders involved in running the initiatives are either from a single university unit, or university-wide cross-functional teams/task forces dedicated to the cause. As discussed in the last section, some institutes have partnered with campus bookstores and promoted student advocacy to accomplish their objectives as well. For identifying common strategies used by the universities, the inductive coding technique was used. It resulted in some common themes which were later grouped and are presented below in a tabular form.

Table 2.

Strategies used by universities to build AIR

Strategies	Actions	In charge
Make low-no cost textbooks and other instructional material available to students	• Locating electronic books as one-to-one replacements of existing course textbooks – with no cost to students • Hosting print copies of textbooks on course reserve • Identifying open educational resources (OER) and library-sourced information as alternatives to commercially produced textbooks • Encouraging faculty to use earlier editions of textbooks with minimal changes • Provide free textbooks and other instructional material to students with identified financial need	Academic Administrators
Encouraging faculty to develop OER	• Provide awards and grants to develop OER • Conduct workshops for developing OER for their subjects	• Administrators • Librarian
Encourage faculty to report course costs before the semester begins	• Sensitize faculty about the impact of delayed or no information on student's success • Incentivize program assistants to have 100% course information	• Program Chairs • Program assistants/coordinators
Encourage students to be campus advocates	• Appoint students as ambassadors of AIR • Build yearlong communication campaign	• Students
Partnering with campus bookstores	• Make bookstore manager a part of the taskforce • Analyzing bookstore lists	• Bookstore manager • Administrators

Following the collection of data from an artifact analysis, the researcher summarized information related to the AIR initiatives by U.S.-based institutions. The artifact analysis provided the types of institutions, commonly used phrases, campus units involved, and strategies used to make instructional resources affordable to students. The data collected here provided information that will

help the researcher respond to the larger research question about the components needed to launch the AIR initiative and assist in the document analysis of highly selective universities.

Data Interpretation

This study's data analysis yields three major themes surrounding Affordable Instructional Resources (AIR)'s composition and implementation at highly selective universities: strategies to build AIR, parameters for its sustained success, and challenges to run it. Broadly, the interpretation section considers how the findings coincide with the three domains of scholarship that were previously outlined in the literature review, which discuss the characteristics of highly selective universities, the need for AIR, and related models. While this study does support existing findings in the literature, data interpretation provides conclusions not yet detailed by prior research. This study also provides a strategic roadmap for AIR administrators at highly selective universities. However, these findings must be individually and strategically applied within a specific institution's strengths, limitations, and institutional character. Separated by theme, this section presents the data interpretation in the context of existing research.

Strategies to Build AIR

At highly selective universities, student demography is changing (Grawe, 2019). Efforts are being made to increase student access. Several strategies are employed to enhance the representation of low-income and first-generation students, which typically lack in highly selective universities. As these efforts are being made, these universities must accommodate the needs of the diverse student bodies. Coupled with the rising cost of instructional materials, which has intensified over the past decade, undergraduate students need institutional support to be successful. The financial aid generally doesn't cover the costs of textbooks and other instructional material. Therefore, undergraduate students particularly in their first and second years of college need financial support and resources for procuring the necessary instructional materials. At highly selective institutions, the students are demanding attention to this need. However, as highly selective is almost synonymous with wealth. These institutions are slow to respond as the majority of students are from affluent families. This phenomenon reflects in the data collection, from the website search, out of 22 only 3 are private highly selective institutions. This means that only 13% have AIR-like initiatives.

The strategies identified during this study are: encouraging students to be campus advocates and appointing them as ambassadors of AIR. Employing higher education students to work on outreach initiatives to widen participation has become increasingly common in universities (Austin et al. 2005). Their study on the effects of employing higher education student ambassadors also emphasizes that apart from its benefits to the university campus, it improves student ambassadors

'self-esteem and self-confidence, develops their transferable skills so that they could operate more effectively as learners, and gives them valuable experience to improve their position in the graduate labor market. The student ambassador strategy, therefore, has the potential to help the primary stakeholders, students.

In summary, this study explored AIR initiatives in highly selective universities for understanding strategies. The following section discusses how the results contribute to the field of study and implications for future research.

Conclusion

The ever-increasing costs of instructional materials have a great impact on low-income, first-generation, and first-year students, all of whom represent the most vulnerable students from a student access perspective (Tinto, 2006). For students with financial constraints, these high costs create excessive stress as students can't necessarily afford all of their required course materials. While scholarships, grants, and loans help tuition and housing, textbook and supply costs tend to fall to the student or their family, causing disparities within the classroom. Having timely access to required course materials contributes to undergraduate students' academic success and graduation completion. Universities across the United States provide comprehensive initiatives of Affordable Instructional Resources (AIR). Their strategies aim at assisting departments and faculty to lower the cost of course materials and offer students with the greatest financial need the opportunity to borrow textbooks for select classes. Even though highly selective universities are the late starters, they are gaining momentum as their students demand urgent attention to the affordability of instructional resources issue (Goulding, 2018). Most importantly, the significant underrepresentation of low-income and minority students intensifies this pricing dilemma (Giancola & Kahlenberg, 2016).

AIR has recently become a part of the national conversation; hence there is a lack of research literature, particularly on highly selective institutions. Therefore, the topic required that the study delves into the necessary elements of AIR initiatives. There exists a body of literature concerning the affordability of higher education as a factor that influences college choices, and the ways that institutions respond to accessibility as a socio-economic need. This study identifies novel strategies to build and sustain AIR programs, thus breaking new ground in institutional efforts toward making undergraduate students' learning experience more equitable. Additionally, this action could foster student success.

Along with the components recommended in this study, one should also consider the institutional context as this may not apply to a non-selective university. The results of this study can serve as an example to other universities in determining ways to lower the cost of educational

resources via sustainable initiatives. By contributing to the existing research on educational affordability, this study serves as a prelude to the efforts on fostering equitable learning experiences and contributing to students' success.

The number of underrepresented students at highly selective institutions is steadily increasing, including first-generation-low-income students. Continued research seeking to understand this population's learning experiences and how they are impacted (by faculty, staff, and the supporting environment) will help higher education professionals find ways to reduce the cost of instructional resources and in turn, higher education.

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