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Stackable Programs: Leading the Way for Success for Nontraditional and Underrepresented Students

PERSPECTIVE

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ABSTRACT

Changes in the economy and decreases in enrollment have changed the landscape of higher education and caused a shift in the demographics of the students who are currently enrolled. Colleges are no longer recruiting or enrolling the traditional student; instead, it is nontraditional and under-represented students who are seeking new skills that degrees or certificates can provide. Stackable degrees can provide a solution or alternative to assist colleges and students within this changing landscape. Stackable degrees are credentials that recognize achievement on a smaller scale. These degrees provide students and universities a win-win opportunity by increasing program enrollment and credentials awarded to students. This article will explore one university's approach to offering stackable credentials. Researchers conducted a meta-analysis comparison study of stackable programs and traditional programs available. Results showed that buildable programs had a significant impact on enrollment for nontraditional students as well as the number of credentials awarded.

Introduction

The face of higher education is changing. According to the National Student Clearinghouse Research Center, general undergraduate enrollment has declined by 1% to 1.7% every year since 2015. For the first time in 10 years, the national enrollment numbers fell below 18 million unduplicated undergraduate students. This was a decline of more than 2 million students (National Student Clearinghouse Research Center, 2019a). This decline is a harsh reality for colleges and universities. Institutions of higher education are no longer able to be successful by being just brick and mortar buildings that cater to the same old population. Institutions must think outside of their traditional education box if they want to survive.

The number of nontraditional and underrepresented students is on the rise on college campuses. The National Center for Educational Statistics (NCES) predicted that nontraditional student enrollment would increase by 50% between 2008 and 2019 (Ellis, 2019). Additionally, the non-White student population at colleges and universities increased by 47% between 1996 and 2016 (Osei, 2019). However, based on previous data, these populations are at a higher risk of not attaining the same degree of education as the traditional student population.

Alternative degree programs could be the answer to the conundrum that colleges and universities are facing. Stackable programs, also called applied or workforce degrees or 2+2 degree programs, are designed to add an academic degree component to the technical base in order to meet the needs of graduates of technical colleges (Arney et al., 2006). Stackable degrees allow colleges and universities to cater to the undergraduate populations that are currently growing: nontraditional and underrepresented students.

NONTRADITIONAL AND MINORITY STUDENT POPULATIONS

Nontraditional students account for anywhere from 44% to 74% of the undergraduate population at colleges and universities depending on the year of the data source (Rawls and Hammons, 2012; Guidry, 2018). However, nontraditional students have lower persistence rates than their traditional-aged counterparts. According to the National Student Clearinghouse Research Center, between 2015 and 2017 the nontraditional student persistence rates were on average 4.8% less than the persistence rate of students who were 21 to 24 years old. Additionally, nontraditional student retention within the same higher education institution during this time was on average 3.7% less (National Student Clearinghouse Research Center, 2019b).

The higher attrition rates of nontraditional students are likely attributed to the unique set of characteristics that nontraditional students possess. Nontraditional students are often part-time, returning, and first-generation students who are financially independent and have work and family responsibilities. They tend to participate in nontraditional classrooms environments—such as online—and utilize unconventional admissions, in addition to requiring increased flexibility, accessibility, and convenience (Ellis, 2019). A study conducted by Ellis (2019) was aimed at determining whether there was a significant relationship between student age classification and student attrition in an online course. The larger purpose of the study was to determine whether there was a connection between course persistence and program attrition. The study looked at 136 students in three sections of an undergraduate introductory educational technology course. For each course, additional activities were offered to students for extra credit. Attrition for the study was defined as "students' successful completion of the optional course material" (Ellis, 2019, p. 27). The results showed that there was a significant difference between traditional and nontraditional student participation. Nontraditional students not only persisted more than traditional students, they also participated at a higher rate than was expected, whereas traditional students participated less than was expected (Ellis, 2019). Additionally, the article concluded that, based on the study, when students do not persist in courses, it increases the likelihood that they will not persist in their degree program. Hence, the article concluded that there is a link between course persistence and program attrition (Ellis, 2019).

Despite the fact that underrepresented populations are growing in the United States as well as at colleges and universities, proportionately they have had the "lowest rates of postsecondary enrollment and attainment" according to the Western Interstate Commission for Higher Education (WICHE) (2013, p. 4). In 2009, 69.2% of White Americans enrolled in college, whereas only 68.7% of African Americans and 59.3% of Hispanic Americans enrolled in higher education (Bureau of Labor Statistics, 2010). The lack of underrepresented students enrolled in higher education is already being seen at colleges in Texas. According to one study in Texas, even though African Americans and Hispanic Americans accounted for more than 50% of the population of 15- to 34-year-olds, they only accounted for 39% of the students enrolled in higher education (Burillo et al., 2013). In comparison, in 2012, White students made up 62.3% of the enrollment of public universities, whereas they accounted for only 38% of the population (Texas Institutions of Higher Education, 2013).

Texas has sought to combat the disparity in underrepresented enrollment and attainment through offering Marketable Skills Achievement Award (MSAA) certificates. MSAA certificates are 9-credit-hour to 15-credit-hour certificates in occupational skill fields intended to "provide completers with a credential recognized by a specific industry, based on industry-endorsed skill standards" (Burillo et al., 2013, p. 292). A study of all 50 Texas 2-year, public community colleges was conducted to analyze the changes in MSAA completers from 2002 to 2010. The study revealed that there was an increase in the number of MSAA certificates awarded to all underrepresented groups, including African American, Hispanic, and Asian students. Hispanic students specifically increased from 22.24% in 2002 to 38.62% in 2010. This is significant because Hispanic populations have historically had the highest high school dropout rates and the lowest higher education participation rates (Burillo et al., 2013, p. 303–306). The data from the study, which are in line with current research, suggest that short-term certificates increase underrepresented enrollment and achievement in college. This is significant because pairing MSAAs with longer degree programs could lead to an increase in college completion for these populations (Burillo et al., 2013, p. 304).

STACKABLE DEGREE PROGRAMS

Stackable degree programs provide an opportunity for students who earn degrees such as MSAAs or other technical certificates or associate's degrees to earn a bachelor's degree with minimal loss of credits. Several colleges and universities have implemented this type of alternate degree program and studied their benefits. South Texas College (formerly known as South Texas Community College) realized that they had many students who had graduated with an Associate of Applied Science (AAS) degree, joined the workforce, and then wanted to continue their education for promotion and advancement purposes. However, these students faced the issue of having to take numerous additional lower-level courses, costing the students time and frustration. The Texas Legislature reviewed the issue and created the Bachelor of Applied Technology (BAT) degree in technology management as the solution. The BAT program is a balance "between practical training

and working with real-life projects" (Mejia, 2012, p. 51). The degree program was "designed to educate and train students with relevant, technical knowledge of related practices to provide solutions for real-world problems" (Mejia, 2012, p. 51).

The program began with 58 students in 2007 and increased by 128% over 4 years. In addition to high enrollment rates, the program has also experienced high persistence rates of 85% to 95% (Mejia, 2012, p. 52). The success of the program led to a survey to study the status of the students after graduation, satisfaction with instruction, student–faculty interaction, and satisfaction with mentoring. The survey outcomes showed that 94% of graduates were employed, 96% believed that they received a well-delivered and quality education, 97% were in agreement that faculty were qualified, 87% indicated that faculty were helpful and supportive, and 95% said they would re-enroll in the same program if they had to do it again (Mejia, 2012, p. 54–55).

Similarly, Arizona State University (ASU) and the College of Technology and Applied Science created a Bachelor of Applied Science (BAS) degree to provide students who earned an AAS degree an opportunity to earn a bachelor's degree. The BAS uses a block of 60 lower-level credits from a student's AAS degree and up to 30 upper-division credits. This contrasts with other bachelor's degrees that may only accept 10 to 20 credit hours from a student's transfer work. The core of the BAS program is composed of professional communication, management, computer competency, and statistical methods courses. The BAS offers 20 concentrations for students to choose from that are largely tied to the various AASs being offered in the state (Palmgren and Danielson, 2004). The average age of the students enrolled in the BAS program is higher than the average age of ASU's undergraduate population. Additionally, students in the program are part-time, with an average of 9.9 credits per semester. Students in the BAS program tend to perform better than students in other programs in the College of Technology and Applied Sciences. The average grade point average (GPA) for BAS students is 3.31 compared with 3.08 for other students. In addition, the majority of BAS degree graduates are employed in their professional fields. The degree has been viewed highly by employers in Arizona, with at least one government agency organizing a cohort to complete the program (Palmgren and Danielson, 2004).

The University of Texas at Brownsville (UTB) School of Business created their version of a stackable degree when they started their Bachelor of Applied Arts and Sciences (BAAS) degree. UTB under-stood that although the job market demanded technical skills, soft skills—such as managerial skills—were needed for promotion (Arney et al., 2006). The program accepts up to 24 technical college credits and 12 to 15 credit hours of general education courses. The program offers five areas of specialization with one option completely online. The BAAS degree utilizes the "building block" or stackable approach that allows for students to earn a technical certificate up to a master's degree (Arney et al., 2006, p. 186). A follow-up study was completed to evaluate the program's "usefulness to our population in terms of earning potential" (Arney et al., 2006, p. 187). The study concluded that BAAS majors had "better jobs" in the area and a higher mean income than other majors. However, there was no statically significant difference in GPA or the presence of a second degree among graduates (Arney et al., 2006).

SPECIFIC BENEFITS OF STACKABLE DEGREE PROGRAMS

Although the concept of stackable programs is not new, research has exposed the benefits of using these programs in higher education. One article explored the impact of the duration of a program on higher education participation. The article looked at the effects of changing program length on enrollment, graduation, and retention. The Bologna Process is a reform for European education that transformed the one-tier (4- to 5-year) degree system into a two-tier system that breaks the program into a 3-year-long bachelor's program and a 2-year-long master's (Bondonio and Berton, 2018). The purpose of the change was to increase enrollment in the programs and reduce the likelihood of students dropping out of the long program without earning a degree. The micro-data utilized in the article were obtained from before and after the reform was implemented and were collected by the Italian Ministry of Education. Analysis of the data revealed that the Bologna Process had a positive impact on first-year enrollment, with increases from 14.5 to 17.3 percentage points. There was also an increase in on-time graduation rates from 5.6 to 17.7 percentage points (Bondonio and Berton, 2018). However, although there was no significant impact on the retention

rates, evidence suggests that there is a positive impact of the reform on persistence for the subsequent years (Bondonio and Berton, 2018). Results from the article conclude that splitting the 5-year program into two programs of 2 and 3 years has had positive effects in all areas that the administration had hoped.

Finally, even though the nontraditional student population is increasing, it does not necessarily mean that adult students feel comfortable applying to college. One article discusses the cultural exclusion of adults from universities in Britain. Marks (2002) explains that many adults who might be inclined to seek out continuing education at a university do not out of "fear of prejudice at both the institutional and personal level" and that "education is therefore culturally mediated as a 'young person's activity'" (p. 114). Marks explains that adults can be intimidated by seeing numerous traditional students occupying large, overwhelming campuses (2002, p. 114). In the article, Marks mentions an approach that is helping to modernize education and break down barriers for adult learners. This approach is the omniversity, which is similar to stackable degrees in the United States. The purpose of this type of educational option would be to allow adult students to gain confidence in their abilities and "be less intimidated by the university" (Marks, 2002, p. 115).

Purpose

To further explore the impact of stackable degrees in higher education, researchers conducted a meta-analysis comparison study of stackable programs and traditional programs offered at the University of Arkansas Fort Smith (UAFS). Based on the review of literature, the researchers established several hypotheses before the data collection. The first hypothesis was that stackable programs have higher enrollment rates for nontraditional and underrepresented students than traditional programs. The second hypothesis was that stackable programs award a higher percentage of credentials than traditional programs.

Methodology

Stackable programs were defined as programs that credential achievements on a smaller scale and can stand on their own with value. These programs allow students to be more flexible with building their skillsets with smaller buildable credentials, rather than a one-block option. These programs include certificates of proficiency (12–15 credit hours), technical certificates (30 credit hours), associate's degrees (60 credit hours), and bachelor's degrees (120 credit hours). The history of UAFS from a technical college that began in 1928 to the transition into a full, 4-year, regional institution in 2002 created a clear pathway for the housing of the stackable programs within one academic college, the College of Applied Science and Technology (CAST). As the university expanded from a 2-year to a 4-year university, all retained 2-year programs were housed in CAST to provide the opportunity for students to still obtain these technical credentials while also offering the option to continue to a 4-year degree. The programs reviewed in this study categorized as alternative programs are found within this academic college and include the following: Animation Technology, Applied Science, Automotive Technology, Computer Graphics Technology, Diesel Technology, Electrical Engineering Technology, Electronics Technology, General Technology, Industrial Electricity and Electrical Maintenance, Office Management Technology, Organizational Leadership, Robotics, Sustainable Energy Technology, Unmanned Aerial Systems, Welding, and Workforce Leadership.

Traditional programs were defined as 4-year, 120-credit-hour bachelor's degree granting with limited or indirect paths to lower-level credentialing. The programs reviewed at UAFS included 41 bachelor's degrees from four additional colleges: the College of Business; the College of Health Sciences; the College of Science, Engineering, and Mathematics; and the College of Language, Arts, and Social Sciences.

Data collected within these two areas included enrollment numbers and credentials awarded between the fall of 2014 and the spring of 2019 for a 5-year review. Enrollment data included the total enrollment of all students as well as those from specialized categories, such as nontraditional students and students from underrepresented groups. Nontraditional students were defined as those over the age of 25 or those enrolled part-time (less than 12 credit hours a semester). Underrepresented groups include all non-White students, such as African American, Hispanic, Asian, Pacific Islander, Native American, more than one race, and other. Credentials awarded data included the number of each degree

awarded (bachelor's, associate's, technical certificate, and certificate of proficiency) as well as the number of students who earned multiple degrees.

The university's total population in the academic years were 5,826 for 2014–2015, 5,598 for 2015–2016, 5,515 for 2016–2017, 5,295 for 2017–2018, and 4,936 for 2018–2019, for a total of 5,434 students for the 5-year review. The racial breakdown included 3,451 White students (63%), 222 African American students (4%), 578 Hispanic students (11%), and 513 students from other races (9%). Female students made up the majority with 2,910 female students (54%); 2,186 male students (40%) were enrolled. Additionally, students who did not identify as male or female accounted for 6% of students enrolled. Students enrolled full-time accounted for 77% of the population (4,198 students), and those enrolled part-time accounted for 23% (1,236 students). Student classifications were populated as follows: 1,637 first-year students (30%), 1,268 sophomores (23%), 986 juniors (18%), and 1,404 seniors (26%). Regarding nontraditional status, 3,639 students (65%) were classified as less than 25 years old, whereas 1,557 (29%) were classified as more than or equal to 25 years old; 4,198 (77%) were enrolled full-time and 1,236 (23%) part-time.

The data collected for stackable programs included a total enrollment of 706 for 2014–2015, 625 for 2015–2016, 653 for 2016–2017, 590 for 2017–2018, and 586 for 2018–2019, for a total of 632 students for the 5-year review. The racial breakdown included 416 White students (66%) and 221 underrepresented students (38%), among which there were 61 African American students (10%) and 56 Hispanic students (9%). Male students made up the majority with 353 male students (56%), and 269 female students (43%) were enrolled. Students enrolled full-time made up 59% of the population (369 students) compared with 41% enrolled part-time (262 students). Regarding nontraditional status, 300 students (48%) were classified as less than 25 years old, whereas 322 (52%) were classified as more than or equal to 25 years old; 369 (59%) were enrolled full-time and 262 (41%) part-time.

Credentials awarded data for the university's total population were as follows: 1,442 (533 awarded in CAST) for 2014–2015, 1,309 (467 in CAST) for 2015–2016, 1,346 (413 in CAST) for 2016–2017, 1,644 (680 in CAST) for 2017–2018, and 1,608 (622 in CAST) for 2018–2019, for a total of 1,724 (627 in CAST) students for the 5-year review. Credential numbers include all degrees awarded at each level, with 11% of students on average earning multiple degrees for the total university and 30% of students on average within CAST.

Findings and Discussion

Based on these data, mixed results were observed with regard to the accuracy of the hypotheses. The first hypothesis, that stackable programs would have higher enrollment rates for nontraditional students, was found to be true. Reviewing the 5-year average of enrollment rates for students aged 25 years and older within CAST compared with the rates within the remaining university academic colleges, the data show that 51% of CAST students enrolled were over age 25 whereas only 26% of students within the other colleges were considered a nontraditional age (see Figure 1). Additionally,

Figure 1.
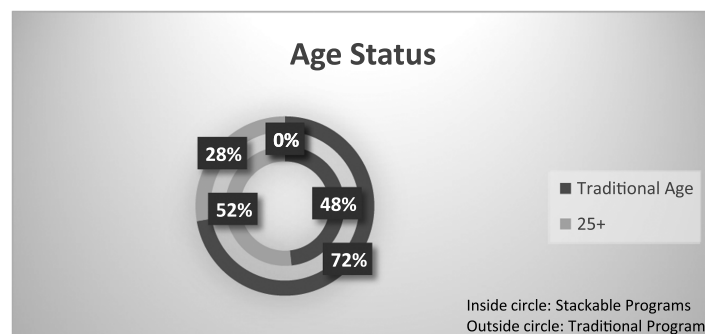*Comparison of Enrollment by Age for Stackable and Traditional Programs*

Inside circle: Stackable Programs
Outside circle: Traditional Programs

Figure 2.
Comparison of Enrollment by Enrollment Status for Stackable and Traditional Programs

Enrollment Status

16%

42%

58%

84%

■ Full Time
■ Part Time

Inside circle: Stackable Programs
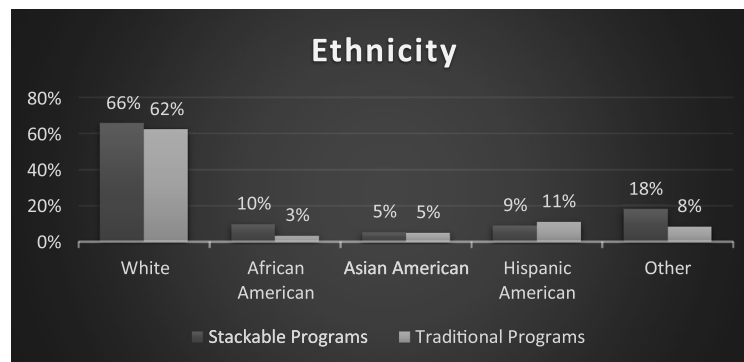Outside circle: Traditional Programs
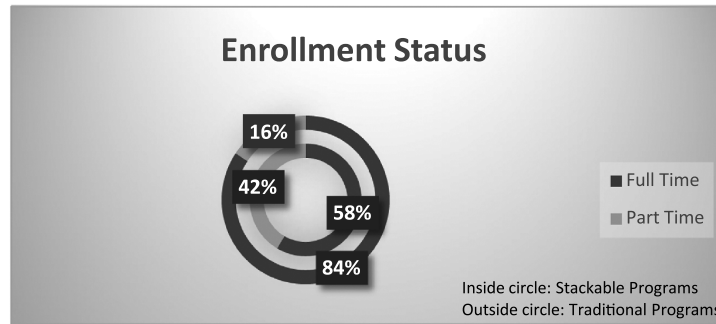
41% of CAST students were enrolled on a part-time basis whereas only 15% of students in other colleges were considered part-time (see Figure 2). This shows that nontraditional students significantly favor the stackable programs.

However, the second portion of this hypothesis was found to be false, regarding enrollment rates for underrepresented groups being higher in stackable programs compared with traditional programs. Enrollment rates for underrepresented groups in stackable programs for a 5-year review was 34% compared with 37% for the remaining university academic colleges (see Figure 3). Although these numbers are fairly close, they do not support the idea that more underrepresented groups are enrolled in stackable programs. On the other hand, if you compare the most recent year of these data in 2019, they do show that the underrepresented rates within stackable programs match the rates of the traditional programs at 38%, giving the impression that the rates of underrepresented groups in stackable programs may continue to increase and outperform those in traditional programs in future years. Additionally, the number of males enrolled in stackable programs is significantly higher than those in traditional programs (56% compared with 38%), which shows another avenue for enrollment growth with stackable programs.

The second hypothesis was also found to be true in that stackable programs award a higher percentage of credentials than traditional programs. The 5-year average of degrees awarded for CAST shows that 627 degrees were awarded (153 bachelor's, 105 associate's, 108 technical certificates, and 259 certificates of proficiency). These numbers included all degrees awarded, with an average of 117 students (30%) earning more than one degree. Regarding the completion rates (degrees awarded to enrollment), 627 degrees were awarded to 632 enrolled students for a 99% completion rate. After

Figure 3.
Comparison of Enrollment by Ethnicity for Stackable and Traditional Programs

Ethnicity

	White	African American	Asian American	Hispanic American	Other
Stackable Programs	66%	10%	5%	9%	18%
Traditional Programs	62%	3%	5%	11%	8%

■ Stackable Programs   ■ Traditional Programs

removing duplicated students, this rate shows 386 individual students earning degrees of 632 students enrolled for a completion rate of 58%. A comparative review of the other academic colleges shows that 1,724 (786 bachelor's, 242 associate's, 17 technical certificates, and 50 certificates of proficiency) degrees were awarded with an average of 36 (3%) students earning more than one degree. A total of 1,724 degrees were awarded to 4,802 students for a completion rate (degrees awarded to enrollment) of 36%; the rate for individual students earning degrees was only 21%.

Implications

This study and research demonstrated the need to combat decreasing enrollment rates and the benefits of stackable degree programs. The research also shows evidence that underrepresented and nontraditional student populations are increasing and that they need higher education that is suitable to their uniqueness.

The issue for colleges and universities is that these specific populations come with specific challenges, such as work and family obligations, credits from previous colleges, time restraints, and lack of confidence in pursuing a 4-year degree. These challenges mean that institutions of higher education need to provide degrees that will appeal to these student populations. Stackable degrees meet these challenges through increased accessibility and flexibility in both class offerings and the ability to complete a degree at one's own pace, the ability to utilize lower and possibly upper-level credits, and milestones to help increase student confidence.

Institutions of higher education could easily implement stackable options into their existing degree programs. For instance, CAST completion rates for certificate of proficiency degrees made up a large portion of total degrees awarded for the college. If other academic colleges offer these stackable degree steps, they can potentially increase their enrollment with nontraditional students as well as their completion rates.

Limitations of the study include the need to collect more data pertaining to other factors that could be attracting nontraditional students to the stackable programs, and other possible benefits of these programs. Additionally, more information needs to be collected and analyzed on why stackable programs did not attract underrepresented students as predicted or whether this number will increase in years to come.

Future Studies

Although this study clearly shows the potential for stackable programs—due to their flexibility—to increase enrollment of underrepresented and nontraditional students, there is room for future studies to expand on this research. It is suggested that further studies be conducted on a larger scale, across multiple universities. These studies should focus on degree attainment, rather than just enrollment, in order to determine whether the stackable programs are living up to their potential. Additionally, more in-depth comparisons of underrepresented and nontraditional students in traditional programs should be considered.

Conclusion

Fighting decreasing enrollment numbers is difficult for colleges and universities. Fewer high school graduates and low unemployment numbers mean that the student population from which to recruit is small. Institutions of higher education need to take advantage of the populations that are growing.

Nontraditional and underrepresented student populations are a few of these student bases that are increasing on college campuses. Due to some of the challenges that these populations face, they may not seem like the ideal recruitment pool. However, by offering degree programs that appeal to these populations, as well as combat some of their challenges, these populations can be more successful than their traditional student peers.

Stackable degree programs may be the answer to both the college enrollment conundrum and the challenges that underrepresented and nontraditional students face. These degree programs appeal to nontraditional and underrepresented populations with their flexibility and efficiency. By offering these types of programs, colleges and universities will be able to recruit students from these

populations and possibly increase enrollment numbers. Stackable degree programs seem to be the win-win answer that everyone has been looking for.

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