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A review of some diverse models of summer bridge programs for first-generation and at-risk college students

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Abstract

Many colleges are pursuing innovative alternative approaches for the development of education that aims to accelerate students' progress in gaining important academic competencies. Summer bridge programs are one such approach. These bridge programs offer underprepared and at-risk students the opportunity to advance toward college-level coursework during the summer before their freshman year. These summer bridge programs have grown increasingly popular, as a strategy for providing students with the foundational college courses, knowledge and skills required for college success. Many integrated programmatic approaches and resources have been developed to address this issue, including general education freshman courses in reading, writing, peer counseling programs, and upperclassmen and faculty mentoring programs providing students with academic preparation and social support. This review examines recent research on bridge program conduct with four selected summer bridge programs from diverse public, open access universities in large urban and non-urban areas with diverse backgrounds, experience, and socio-economic status of students. This review concludes with conflicting evidence of the effectiveness of summer bridge programs in student retention, self-efficacy, academic improvements, and persistence. It offers recommendations for successful academic practices and suggestions on current and potential evaluation methods for use in future assessments of bridge programs as a continual programmatic revision to meet the needs of the participating students.

Keywords: Bridge Programs, Retention, Transition, Program Administration, Persistence

Introduction

In 2016, only 60 percent of students had completed a bachelor's degree started in 2010 (U.S. Department of Education, 2018). The high drop-out rate is attributable to personal and external factors, including academic unpreparedness adjusting to the college academic rigors, homesickness, lack of fit into the college, personal or family issues, financial constraints, setting sights on the wrong major, lack of guidance or mentors, and external demands particularly within part-time or full-time employment (GoCollege, 2019). There are student development theories and models used intentionally by student affairs professionals for the design and development of programs and services, setting strategic goals and interacting with students Student Services Paradigm (Evans, 2019; Patton, Renn, Guido, & Quaye, 2016). These psychosocial theories, cognitive structural theories, and typology theories/person environment theories taken together serves to benefit knowledge acquisition for holistic student development and reduce attrition. More specifically, Tinto's theory of student departure argued that

students depart higher education without earning a degree because of the nature and quality of their interactions with the college or university, academic failure, and failure to integrate socially and intellectually with the culture of the university or low level of commitment to the college or university (Tinto, 1987). This information is ever more critical for students from traditionally disadvantaged backgrounds, such as students from low socioeconomic strata, first-generation students, and underprepared students (DeAngelo & Franke, 2016; Murphy, Gaughan, Hume, & Moore, 2010; Castleman & Page, 2014; National Center for Education Statistics, 2017). A main reason for discontinuation is attributable to personal lack of use, or inadequate, college internal supportive programs and policies (Weuffen, Fotinatos, & Andrews, 2018; GoCollege, 2019).

Bridge programs are designed to address the personal and inhibiting institutional factors of undergraduate students as they transition into college and have been suggested to increase academic readiness, promote inclusion and integration into the college academic and social community, introduce the students to the available supportive institutional academic support programs and services, and promote self-efficacy and persistence. The goal of these “college initiation” programs is to address the integration of disadvantaged students to the academic and social aspects of the college environment, set expectations, encourage persistence, increase retention to graduation (Pazargadi, 2018), and close the social-class achievement and identity gaps (Stephens, Hamedani & Destin, 2014; Pendakur, 2018).

The four sample summer bridge programs in this review were selected from open access government or state-sponsored institutions, used well-designed methodologies with institutional-wide data and analytics from the Office of Institutional Research, and used extensive long-term follow-up data for outcomes of the interventional summer bridge groups to substantiate the efficacy of their summer bridge programs with empirical data.

This review provides a theoretical-practical base for knowledge, expertise and practice for the enhancement of program planning, developmental approach, and effective policy development for summer bridge programs. An intended goal is for practitioners to consider this analysis in the design of new, or enhance existing, summer bridge initiatives in diverse types of post-secondary institutions.

Literature Review

During the last fifty years, nearly half of all students who entered a two- or four-year university withdrew without obtaining a degree (U.S. Department of Education, 2018). The U.S. Department of Education (2010) estimated that 50% of students are first-generation, and they are from lower median household income with more unmet financial need compared with non-first-generation students (Postsecondary National Policy Institute, 2016). Students from low socioeconomic backgrounds, and first-generation (refers to students whose parents did not earn a degree) students are particularly vulnerable to attrition (Radunzel, 2018). There is a large amount of information in the literature that has shown association between students’ inadequate preparation and educational backgrounds, family financial constraints, and other sociological factors on the high attrition rates of first-generation college students, and the causative factors of this high attrition rate (Costello, Ballin, Diamond, & Gao, 2018; Evans, 2019). The contributions of bridge programs assist these students, and close the gaps where shortcoming exists in programmatic planning and execution (Davis, 2010; Yao & Kang 2017; Costello, Ballin, Diamond, & Gao, 2018).

This review, using new findings in the field, focus specifically on an interventional bridging program for at-risk students designed to bridge the educational and socioeconomic factors that synergistically interact to lead to reduced persistence to attainment of college degrees studies and subsequent lower academic

outcomes of first- and second-generation college students. At the high-school level, most first-generation college students have significantly lower SAT scores and grade point averages (GPA) than continuing generation students whose parents have a bachelor's degree (Sackett, & Kuncel, 2012; Wiggins, 2012). In addition, first-generation students have lower levels of information about applying to colleges and obtaining financial aid than students whose parents have a bachelor's degree (Houle, 2014). However, many first- and second-generation college students show a strong comparison in high school class rank when compared to their third- and fourth-generation counterparts (Desimone & Long, 2010; Bragg & Taylor, 2014). This suggests that first-generation college students are more likely to attend high schools where students have low GPAs and are academically unprepared, while students whose parents attended college are more likely to attend high schools where students have high GPAs (Cerezo & McWhiter, 2012). This reflects an existing resource discrepancy between students of different socioeconomic backgrounds. Many students from privileged socioeconomic backgrounds attend schools with access to up-to-date academic counseling and rigorous college preparatory coursework (US Department of Education, 2018). On the other hand, many students from disadvantaged socioeconomic backgrounds attend schools that lack these resources (Palardy, 2013; Gamoran & An, 2016). Furthermore, first-generation college students are less likely to rely on high school guidance counselors for assistance when choosing an institution to attend, which makes the resource discrepancy more detrimental. Even when guidance counselors are available, they are less prepared to provide adequate college counseling for students who have nowhere else to turn. These students ultimately lack crucial information for college readiness (Unverferth, Talbert-Johnson & Bogard, 2012).

Many first-generation college students report lower levels of self-confidence in their academic preparation for college than students whose parents attended college (Unverferth, Talbert-Johnson & Bogard, 2012; Ma & Shea, 2019). First-generation college students also report lower expectations for their college GPA, and lower expectations in attainment and academic self-concept. These beliefs are often consistent with the observed lower academic performance (Covarrubias & Johnson 2018; Conger, Conger, & Marin, 2010; Pike, 2014; Haktanir et al., 2018). When compared to their college-continuing second- and third-generation counterparts, first-generation college students consistently obtain lower GPA during their first semester of college and demonstrate higher discontinuation rates by the end of their freshman year (Douglas & Attewell, 2014; Mazlan, Aziz, Mohamed, Ismail & Shah, 2017; Gershenfeld, Hood, & Zhan, 2016). When compared to other student groups, research has consistently found that first-generation and academically inadequately prepared college students are the most likely to drop out of higher education, and the least likely to attain their degree in a timely manner (National Center for Education Statistics, 2015).

First-generation college students often come from families experiencing greater levels of economic hardship than their continuing second- and third-generation counterparts. Lower family income directly impacts a student's college experience on both the academic and social levels (Willingham, 2012). To afford the costs of attending college, first-generation college students are significantly more likely to attend higher educational institutions within commuting distance to their homes and are significantly less likely to live on campus during their freshman year. They are also significantly less likely to become involved in extracurricular activities and more likely to work part-time or full-time while attending college (Pratt, Harwood, Cabasos, & Ditzfeld 2017; Pascarella, Pierson, Wolniak, & Terenzini, 2004, Garza & Fullerton, 2017). First-generation college students take out student loans more often, and in higher amounts, than their continuing-generation peers in their first year of college (Furquim, Glasener, Oster, McCall, & DesJardins, 2017). Because of their workload and others financial stressors, first-generation college students are also less likely to enroll full-time in a four-year institution (Pascarella, Pierson,

Wolniak, & Terenzini, 2004) and they perform significantly lower on an academic level (Weuffen, Fotinatos & Andrews, 2018). Furthermore, first-generation college students are often the least informed about ways to obtain financial aid and student loans, and from families more resistant to incurring temporary high levels of debt (Houle, 2014; Furquim, Glasener, Oster, McCall & DesJardins, 2017). Because insufficient financial aid is linked to higher levels of attrition, the combination of low financial resources and low awareness on ways to obtain financial support prevents these students from pursuing to the completion of a college degree (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Sirin, 2005; Wilbur & Roscigno, 2016).

Success at an institution of higher education is dependent on a combination of sufficient preparatory academic attainment, sufficient institutional programs, and peer support. However, students who are working and living off-campus have less time to become involved in the academic and social atmosphere of their college campus. This can be damaging as the involvement of the student and a student's ability to create and foster social bonds with peers are two of the six key factors linked to academic retention on non-commuter campuses (Simpson & Burnett, 2017). Peer involvement in college is also associated with higher levels of intellectual and personal development than academic study alone, and students with worthwhile social connections in college are more likely to engage in educationally purposeful activities, such as willingly participate in class and seek help when needed (Kuh, Kinzie, Buckley, Bridges, & Hayeck, 2006; Pascarella, Pierson, Wolniak, & Terenzini 2004). Even more noteworthy, first-generation college students report a greater commitment to graduate from college once they connect with something or someone whom they deem worthwhile. Affinity group membership, meaningful relationships with faculty members, and roles of responsibility within student organizations are examples of the types of activities that connect a first-generation student to their institution (Kuh Kinzie, Buckley, Bridges, & Hayeck, 2006). Additionally, research suggests that first-generation college students hesitate to seek extracurricular involvement until they are first confident of competing academically (Terenzini et al., 1994). Because many first-generation college students enter the university system with lower confidence to begin with, it becomes a critical challenge to engage these students in extracurricular activities.

Research on Academic and Social Support Programs

Government education departments and college administrators have consistently recognized the need to improve student retention and graduation rates for its social and economic implications. Most studies on first-generation college students conclude with ideas for developing curricula addressing the unique challenges that first-generation college students face. These ideas range from mentorship programs, to comprehensive orientation curricula, academic advising resources, opportunities for student social integration and leadership (Pascarella, Pierson, Wolniak, & Terenzini, 2004; Woosley, Sherry, & Shepler, 2011), and a reconsideration and practical guide to implementing a campus-wide focus on the student experience (Keeling, 2004, 2006). However, while these published findings provide theoretical ideas on meeting the needs of first-generation and at-risk college students, relatively few studies have evaluated the efficacy and outcomes of these programs. In particular, few studies have used well-designed methodologies, outcomes and qualitative empirical data to ascertain whether currently implemented programs retain a greater number of first-generation and at-risk students. This is due to the inherent group design standards to show the equivalence of the intervention and comparison among groups, which is often not possible. However, anecdotal evidence and observations by colleges and summer bridge administrators, social and educational policies' interventional programs continue to invest resources in the development and maintenance of these programs.

The following section reviews the common tenets in almost all summer bridge programs, which include some of the following traits: high-level program content, group and interventional designs and analysis,

program effectiveness, and outcomes in specific domains (including persistence, retention, academic grades, positive impact on sense of belonging to the college environment, and degree attainment).

Summer Bridge Programs

Summer bridge programs are designed to bridge, or ease, the transition to college and support post-secondary success by providing students with the academic skills and social resources needed to succeed in college. These on-campus programs that typically run 2-8 weeks are mostly designed to target the first-generation and at-risk students. Many bridge programs provide the opportunity for selected students, who have struggled academically to demonstrate that they are prepared for college and committed to their own success. These programs provide a unique opportunity for students to succeed by refining their academic skills and gaining a better understanding of the rigors of college life through academic coursework. Students who are required to attend a bridge program, in many cases, must successfully complete it for formal admission into the college. Although the programmatic development, curriculum and content of summer bridge programs vary across institutions and by the population served, they typically involve the following: an in-depth orientation to college life and resources; academic advising; training in the necessary skills for college success (including time management, study skills, resources identification, and social support systems); accelerated academic coursework and exposure to university resources (for example the library, activity center, and student health centers); and encouraging family member involvement in students' academic support networks. The program provides opportunities for students to form meaningful and positive social and peer connections and support; it promotes a sense of belonging and encourages the development of a higher stake in themselves and the college community.

Three representative summer bridge programs provided below were carefully selected for the extensiveness and duration of the summer bridge data collected and analyzed, the diversity of the students' characteristics (demographics, parental socioeconomic status, high school academic preparedness, academic self-concept, self-evaluations, etc.), and other measured factors.

University of Arizona, Tucson, Arizona, USA

Cabrera, Miner, & Milem (2013) systematically examined the impact of their six-week summer bridge program over a 17-year period. The program is designed to help racial minority, low-income, first-generation college students from underserved backgrounds, who are entering college for the first time as full-time freshmen to adjust to their first year of college. The program is comprehensive and has integrated campus-wide resources, with a primary objective to orient participants to undergraduate life while helping them to develop skills to successfully navigate the collegiate environment. The program provided experiences including opportunities to enroll in academic courses, live in residence halls, engage in social activities, and learn about the various academic and social support services provided on the college campus. The 17-year first year GPAs and retention data from students who completed the summer program and a comparative group who were eligible for the program but did not participate used for this analysis were derived from the university's Office of Institutional Planning and Support and complemented by a longitudinal survey developed by the research team.

Programmatic efficacy is largely determined by participants' cognitive abilities, and how effectively the study group is connected to the social and academic support networks during their first year of college while controlling for incoming student characteristics. Participation in the program, although inconsistent from year to year correlated positively to "promotion of belonging," academic engagement, increased academic self-concept and social self-concept (participated regularly in group study outside of class, met and had informed conversations with faculty, attended academic support programs, reading and math

abilities, improved communication skills, leadership ability, social self-confidence, ability to work cooperatively with diverse peers, socialization, and ability to discuss and negotiate controversial issues). Program participation is a predictor of student academic performance, persistence, and resiliency, and supports a positive effect of program participation on increased academic engagement, which drives greater academic resiliency and increased acceptance of opportunities and self-efficacy.

Rutgers University, New Brunswick, New Jersey, USA.

Clauss-Ehlers & Wibrowski (2007) measured the outcomes of students' participants in a Rutgers University Summer Bridge Program. This study included 95 participating students. As with many other summer bridge programs, the Rutgers University Summer Bridge Program featured accelerated college coursework in English, math, and science, courses on leadership training and academic success, recreational options on weekends, and an award ceremony upon completion of the program. However, this program differed from many traditional summer bridge programs in that students who participated were conditionally accepted into the four-year university but were not admitted if they did not pass the Summer Bridge coursework.

Using four-year retention rates or overall college GPA to examine the program's success, Clauss-Ehlers and Wibrowski (2007) used a pre-test, post-test design to measure the self-reported changes in resilience, social support, and ethnic identity among the participants of first-generation college students. The results were mixed, suggesting that students did not experience statistically significant changes in ethnic identity affirmation, resilience levels, or perceived familial support. However, they experienced enhancement in peer support and were able to "cultivate valued experiences" with supervisors during the duration of the summer bridge program (Clauss-Ehlers & Wibrowski, 2007). Researchers also acknowledged that most of these students showed high levels of resilience to begin with, undermining the opportunity for statistically observable increases. However, because the study did not include data on retention rates or GPA, one cannot assume that social support and resilience were sufficient enough on their own to keep these students enrolled in a university setting. This study relied purely on subjective, short-term data, and this data may not be representative of long-term outcomes.

Unidentified Technical University, USA

Murphy, Gaughan, Hume, & Moore, (2010) used a quasi-experimental design to examine the effects of a 5-week summer bridge program on students' postsecondary graduation rates. The sample included 2,222 students enrolled at a selective technical university in the southeastern United States. The intervention group included 770 freshmen who were self-elected to participate in a summer bridge program in the summer before their first semester of enrollment. The summer bridge program involved an academic component that provided short non-credit-bearing courses in calculus, chemistry, computer science, and English composition. Upper-class students served as peer educators and coaches during the program and provided supplementary mentoring as needed. Participants in the program were compared to a group of 1,452 students who elected not to participate in the summer bridge program. Baseline equivalence of the intervention and comparison groups was established for the characteristics of students: high-school GPA, and median household income. Follow-up data were collected on the 2,222 students for a minimum of five years after their initial enrollment. The findings revealed that graduation or degree attainment rates were significantly higher for students in the intervention group compared to those in the comparison group (70% vs 67%). Overall, the summer bridge program intervention contributed positive effects on this long-term study.

Although this randomized study design demonstrated a positive impact on graduation rate attributable

to the interventional summer bridge program, a drawback of the study is that the group design standards and equivalence of the analytic intervention and comparison groups' indicators that contributed to the higher graduation rate were not done. Additionally, this report omitted the impact of programmatic participation to their adjustment to college life, interaction with their peers and engagement in the classroom, all of which are considered critical factors that help students to develop skills and support networks for academic resilience.

Idaho State University, Pocatello, Idaho, USA

Frischmann & Moor (2017) reported on a seven-week summer program designed to facilitate selected students' successful transition in its high school bridge program. The population studied four cohorts, with an acceptance criterion that included factors besides low-income and first-generation's risk factors for students persisting in college: low test scores, low GPA, disability, underrepresented minority, English as a second language, lack of familial support or parental education, inadequate resources to attend college, and lack of academic preparedness that influenced the retention and persistence to degree completion. The program administrators adopted an academic coaching model that is intrusive, proactive, and holistic to preemptively identified potential impediments to success and retention, and then reached out to students. This study reported on the qualitative (race, gender, low-income, and first-generation indicators) and quantitative variables (standardized exams scores, high school GPAs, bridge programs GPA, bridge cumulative GPAs, post-bridge fall and spring GPA) as the only indicators of interventional success. The results showed the interventional program impacted on increased retention in each cohort, and post-intervention GPAs similar to the non-participants with generally higher scores in standardized exams. The analysis showed significant increases in the quantitative variable were independent of the qualitative variables suggesting a positive impact of the interventional summer bridge program on post-bridge GPAs. Although this study reported a significant increase in the participants' GPAs – the most direct and straightforward academic metrics, the study is limited in its assessment of other critical indicators of the definition of first-year success including credits accumulated, credits completed, gateway courses completed, major or program selection or persistence track – predictive of near and long-term persistence and effectiveness of the interventional program, and trajectories to college success

Discussion

Taken together, there is a large body of empirical data and research evidence that summer bridge interventional programs help to promote a successful transition, increase academic readiness, persistence and social integration for first-generation, low-income, and academically underprepared high school graduates. These studies are useful prototypes for future researchers, as they measured objective student outcomes and attrition rates and compared this data to control groups of students from similar backgrounds.

Unfortunately, there are several common, methodological flaws with these reviewed and current research on the efficacies of summer bridge programs. Firstly, much of the research on these programs measured student outcomes through the end of their freshman year and beyond but did not delineate the contributions of the students' perceptions of the roles of society and culture, and the integration into these institutions that contributed to their resiliency and persistence.

Secondly, much of the research on summer bridge programs are not randomized allocated match control groups for comparison. A lack of allocated matched control groups makes it impossible to determine whether or not the students' academic performance is truly impacted by the summer bridge programs. These same outcomes may have occurred without the intervention of the summer bridge program.

Thirdly, the studies are exclusive to the assessment of the impact of the specific college policies, academic and social integration program that affected students the most that led to the observed increased persistence and retention. Related to this is the failure by the program administrators to identify the underlying strategies that specifically improved students' persistence and success.

Fourthly, a generally unaddressed issue within these programmatic assessments is the issue of the non-consideration and assessment of the overall experience and contributory factors to their success that led to the students' transformation in the observed positive impact of the summer bridge programs (Educational Advisory Board, 2016). Assessments of social impact also tend to rely on self-reporting via surveys such as students feeling that programmatic participation positively impacted their adjustment to college life or feeling "adequately prepared" to interact with their peers and engage in classroom discussions (Valdeman, Meeussen & van Laa, 2019).

Lastly, many of these studies measured academic outcomes of summer bridge programs on a qualitative, rather than a quantitative basis. For instance, many studies measured self-report data on participants' perceived levels of academic preparation and post-participation in a bridge program but neglected to measure the participants' GPAs at later dates. While qualitative data is useful when measuring the degree to which students consider a program to be helpful, these studies generally lack hard data on the relationship between GPAs and attrition rates (for financial hardship) cannot assess whether or not the program has truly impacted a student's academic performance. These limitations may be interpreted that there is little empirical foundation for the current research in terms of selecting constructs related to success stemming from their summer bridge program participation.

A new model for the programmatic design, assessment measurements, and the contributory roles of the various components (Students Affairs, Academic Affairs, Financial Aid Office, Office of Institutional Planning and Assessment, and other student support services) to the summer bridge programs is required to provide concrete evidence for the unequivocal impact of these programs. Schoper, Davidson, & Nguyen, (2008) proposed a guide that professional practice should be guided by structured theories directed by scholarly work and informal theories of practical work experience outside of the daily routine of theories. In their experience, they developed and implemented a student organization with a goal of supporting and facilitating the holistic development of a first-generation student population using student development theories by Davis' (2010), strategies for improving student persistence and success, and a blend of two process theories: Kolb's (2014) theory of experiential learning and Magolda's (2001) theory of self-authorship. The authors recruited self-identified first-generation students, facilitated development, and connected through common experiences shared at meetings and each group's activity for five core values (i.e., dedication, grit, curiosity, community, and integrity). The participants demonstrated positive outcomes in key areas demonstrated to contribute to the persistence, self-regulation and strong community participation – key contributors to resiliency and persistence to degree attainment: raised awareness of their needs, networked with peers/integrated with the campus and surrounding community, developed a stake in themselves and others through partnership with other first-generation students via holistic encouragement, and used support service and resource for other first-generation students. Although the impact on academic performance was not reported, this model may provide practical guidelines for summer bridge programs.

Overall, there is still a great need for research focused on longitudinal and quantitative assessments on summer bridge programs. Examples of quantitative measures include graduation rates, attrition rates, and GPAs of participating students. More research is needed to examine summer bridge student outcomes versus outcomes of a control group. Additionally, as many of the summer bridge programs

enroll a sizeable number of minority students, research is needed to examine whether an ethnic match is a valid factor when working with low-income, first-generation college students from an ethnic minority background.

Future assessments on summer bridge programs should examine quantitative student data on a longitudinal scale. Future studies should focus on GPAs, attrition rates, and four-year graduation rates of summer bridge participants. Summer bridge participants should be matched to a control group for comparison. Studies should be conducted in a pre-test, post-test fashion, to examine whether or not a true difference occurred in students over time. In addition, future assessments should examine ethnic matching on a qualitative and quantitative scale. Research is needed to assess whether an ethnic match has a positive correlation with qualitative student perceptions of bridge programs, and quantitative GPAs, attrition rates, and graduation outcomes.

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