Holistic Admissions in Higher Education: A Systematic Literature Review

Jolene M. Maude
Memorial University of Newfoundland

Dale Kirby
Memorial University of Newfoundland

Rich learning environments that celebrate differences and prepare students for today's global society are cultivated when a diverse student population is actively sought. By evaluating students on factors beyond grades and standardized tests using holistic admission processes, institutions can admit a more diverse student body and enhance students' experiences. This paper explores the academic literature on holistic admission, the intricacies of the approach, and the impact these alternative evaluation practices have on campus diversity. This review gives a snapshot of the history of holistic admission, outlines the approach, and provides examples of the impact holistic admission practices have on student diversity.

Keywords: higher education, admissions, holistic admissions

INTRODUCTION

In recent years, equity, diversity, and inclusion (EDI) has received increasing attention in higher education. Many institutions are striving to increase their campus diversity and break down "long-standing systemic barriers associated with higher learning" (Tamtik & Guenter, 2019, p. 42). Whether it is in response to the globalization of learning communities, in support of Indigenous rights, to secure funding, or to achieve particular student learning outcomes, diversification is a growing institutional priority (Chun & Evans, 2018; Tamtik & Guenter, 2019). Diversity in higher education is increasingly regarded as an important means to ensure that institutions are educating well-rounded members of society. Meaningful interaction with people of different backgrounds challenges students to consider new ideas, alternate perspectives, and differing value systems. Learning environments comprised of this kind of intellectual variety are the breeding ground for innovative problem solving, strategic risk-taking, enthusiastic collaboration, and endless ingenuity. Admitting a diverse student body and providing intentional and meaningful opportunities for cross-cultural interaction helps to prepare graduates to address the real-world problems they will encounter in the globalized workforce (Gurin et al., 2002). However, universities may have a difficult time diversifying their campuses without first addressing the limiting nature of traditional admission policies and processes.

Academic metrics have always played a primary role in university admissions, though reliance on standardized testing has been under scrutiny since at least the 1960's (Crouse & Trusheim, 1988). While the consideration of factors outside of academics is not a new approach, in recent years colleges and universities have been recalibrating how they apply this approach to student admissions. More holistic

evaluations that consider non-academic student attributes look beyond grades and standardized tests to capture a more thorough understanding of each applicant. With a primary aim of increasing student diversity, "holistic admissions include consideration of a variety of applicant factors, with the intent of selecting students likely to be academically successful as well as to contribute to the school by bringing their unique selves" (Lewis, 2021, p. 126).

The purpose of the current study was to carry out an in-depth exploration of the extant literature on holistic admission at American universities, understand the intricacies of the approach, and determine the impact these alternative evaluation practices have on campus diversity. This literature review relied on two comprehensive electronic databases and employed a variety of search terms associated with higher education admissions generally and holistic admissions more particularly. These databases were the Education Resources Information Center (ERIC) database and the database of library holdings at the University of Calgary. Following this initial search and evaluation of the research literature, additional secondary sources were identified using the "snowball method" (Jalali & Wohlin, 2012). The review is guided by the following questions: a) what individual characteristics are commonly reviewed as part of holistic admission?; and b) what impact do holistic admission practices have on the diversity of university student populations? In what follows, we provide a brief history of admission in the United States; examine the arguments for diversity in higher education; explore the impact of holistic admission practices; and overview associated challenges and recommendations for advancing work in this area.

CRITICAL REVIEW OF THE LITERATURE

Origins of Holistic Admission

According to Bastedo et al. (2018), "holistic review is both a very new and very old idea in college admissions. Although the idea of individualized review is often lauded today, it is rooted in religious and ethnic discrimination" (p. 784). Drawing on the work of Marcia Synnott, Veysey (1980) outlined five historical phases of admission policies in American higher education. First, during "the long reign of the individual entrance exam in the old-time college" (Veysey, 1980, p. 116), college admission decisions were focused on performance in Greek, Latin, and mathematics. Then, as the number of prospective students increased at the end of the 19th century, the classic languages were abandoned as admissions criteria as they shifted to more standardized metrics, including college entrance examinations following the establishment of the College Board in the early 20th century. The third phase extended from about 1910 through to the end of World War II and was characterized by university admissions taking an overtly racist approach to avoid admitting Catholic and Jewish students. Through this period, the effort to reduce the number of Jewish students "was a conscious effort that at the time dominated the thoughts of the affected administrators" (Veysey, 1980, p. 117). In support of this discriminatory and anti-Semitic agenda, institutions began considering alternate admissions criteria and placing emphasis on "character" and "fitness". By the fourth phase, starting in the late 1940s, "antisemitism could no longer be publicly expressed" (Veysey, 1980, p. 119) and admissions at prestigious American universities shifted back to evaluating students solely on intellectual merit. Synnott suggested that a fifth phase in the history of American university admissions began when "in explicit atonement for earlier historical sins, academic administrators sought to raise the number of minority entrants by outright discrimination in their favor" (Veysey, 1980, p. 119). The use of affirmative action admission for students from certain ethnicities resulted in a number of lawsuits where white applicants who were denied admission argued that being admitted based entirely on race was illegal (Lewis, 2021). In the ground-breaking 1978 case University of California v. Bakke, the Supreme Court concurred that an admission quota for students of a certain race was unconstitutional. As a result of this ruling, institutions in the United States may consider race/ethnicity in the admission process so long as it is one of several factors considered rather than used in isolation (Veysey, 1980). This landmark legal case set the stage for modern day holistic admission.

Higher education credentials are more-or-less required to ensure opportunities for employment and upward mobility in modern society (Brennan & Naidoo, 2008). Admissions to college and university remain highly competitive, especially at more prestigious and selective institutions As the United States

become increasingly diverse, so too does the pool of college and university prospects. Each applicant brings a unique set of lived experiences, individual traits, and personal strengths with them. In the 21st century, a holistic approach to admission is best positioned to honor these distinct differences and curate rich learning environments where student diversity is promoted and celebrated.

Diversity in Higher Education

One of the primary goals of holistic admission is to increase diversity in higher education by providing opportunities for the historically marginalized and underrepresented. Colleges and universities are seeking greater diversity in light of evidence that a more diverse university student body positively impacts learning outcomes associated with the ability to participate in a diverse democracy (Gurin et al., 2002; Park et al., 2013). Gurin et al. (2002) contended that since many students are at a crucial stage in their identity development, institutions have a unique opportunity to create environments that are ripe for active thinking and cognitive growth. By increasing campus diversity, they can provide meaningful opportunities for students to engage with and learn from those who are different from themselves. After examining classroom and informal diversity interactions to see if interactions among diverse students would support learning and democracy outcomes, Gurin et al. confirmed that when students have regular, meaningful interactions with diverse others, they are building the skills required to participate and lead in a diverse democracy. In addition, higher diversity experiences were found to have a positive impact on learning outcomes including increased intellectual engagement, active thinking, and self-assessed academic skills. These findings are supported by Morrison and Grbic (2013) whose research revealed that diversity on campus supports student learning and may lead to a more culturally competent workforce. Their research findings suggested students were more likely to learn from others who are different from themselves when their class of students was more racially diverse. A more diverse student body provided opportunities for students to engage with other from different backgrounds, perspectives, and ways of thinking. Taken together, these studies demonstrate that "education is enhanced by extensive and meaningful informal interracial interaction, which depends on the presence of significantly diverse student bodies" (Gurin et al., 2002, p. 359).

Another reason why higher education institutions are committed to increasing diversity is tied to a body of research on workforce diversity that exists adjacent to that of holistic admissions. Across healthcare fields, for example, there is evidence that individuals from minority, minoritized, and disadvantaged populations lack sufficient access to necessary health services (Byrd et al., 2020). At the same time, research shows that individuals from these backgrounds are more likely to seek acute and ongoing care from practitioners who share similar cultural traits. In other words, diverse groups may be best served by professionals who themselves are from these communities (Byrd et al., 2020). Therefore, attracting and admitting a diverse student body to health-focused programs is a key contribution to combating healthcare disparities across the United States. Thus, increasing the diversity of students in medicine and nursing programs in the US has become a top priority within these professions. The American Association of Medical Colleges (AAMC) and the American Association of Colleges of Nursing (AACN) provide a wealth of information and guidance on the value of holistic admission to health sciences programs.

Holistic Admission Explained

At its core, holistic admission is an approach to college and university admissions that considers an individual's non-academic attributes and strengths in conjunction with traditional academic metrics. In general, non-academic factors for holistic admission can be divided into two categories: experiences and attributes. Experiences are the "lived events or encounters that may result in knowledge acquisition or practical wisdom" (Byrd et al., 2020, p. 5) – the facets of human existence that applicants have worked through, and which have shaped their lives. These experiences may include community involvement, leadership, professional activities, or how individuals have overcome hardship. Attributes include elements like race/ethnicity, and personal qualities, characteristics, abilities, or skills that applicants bring with them to the program. According to the College Board (2018), "no single definition can fully capture the legitimate variability among colleges and universities that manifest varied missions and admissions aims" (p. 4). The College Board recommends that holistic review processes should: a) be aligned with institution mission, b)

reflect the student's ability to both succeed in program and contribute to the program and educational community, and c) "involve consideration of multiple, intersecting factors – academic, non-academic, and contextual – that enter the mix and uniquely combine to define each individual applicant" (p. 4). These guidelines have been adopted by a variety of professional organizations and have been incorporated into the admissions practices of colleges and universities (Francis et al., 2021; Wros & Noone, 2018; Zerwic et al., 2018). For example, the AAMC has outlined core principles for holistic review in medicine that reflect the recommendations of the College Board including a) alignment with institutional mission, b) valuing many intersecting factors including experiences, attributes, and academic performance, c) and consideration of student contributions (AAMC, 2022).

While holistic admission is not a new concept, there are inconsistencies in terms of how the practice is defined, what non-academic factors ought to be evaluated, and how the holistic evaluation itself should be conducted. These inconsistencies are regarded as problematic because they can lead to a lack of transparency in admissions criteria and may serve as a barrier to implementing a holistic approach (Bastedo et al., 2018; Glazer et al., 2016; Hossler et al., 2019). Bastedo et al. (2018) argued that "admissions offices lack a consistent definition of what is meant by the holistic review" (p. 783) and that "relatively little is known about the processes that institutions enact to develop selection criteria and review prospective students" (p. 783). Similarly, Hossler et al. (2019) noted that "the use of [non-academic factors] as part of holistic review has come under attack in part because of the lack of transparency" (p. 835). As of means of increasing transparency for applicants, admissions staff, and administrators, researchers have attempted to outline the non-academic factors that should be considered in holistic reviews. In response to biases within standardized testing, Sedlacek (2003) utilized previous research on intelligence to create the Noncognitive Questionnaire (NCQ), an eight-scale framework to evaluate non-academic factors. He suggested the NCQ may better assess student attributes as compared to their grades and test scores. This is especially the case for students who do not perform well on standardized tests. The NCQ considers elements of applicant self-concept, self-appraisal, ability to deal with racism, preference for long-range goals, access to support system, leadership experience, community service, and hands-on-knowledge (Sedlacek, 2003). The increased clarity provided by the eight NCQ scales have served as encouragement for institutions to implement it as part of their holistic review process. Elsewhere, Hossler et al. (2019) explored the non-academic factors considered in the admission process and, after a thorough review of the literature, the researchers adopted Kyllonen's (2005) framework for non-academic factors. This framework includes five categories: personality factors, affective competencies, performance factors, attitudinal constructs, and learning skills. Interviews with senior level enrolment professionals from selected American universities led Hossler et al. to conclude that the most important non-academic factors in Kyllonen's framework are performance factors and attitudinal factors. The performance factors include elements of effort, motivation, teamwork and leadership, and the attitudinal factors reflect self-concept, ethics/morality, adaptability and social attitudes/values/beliefs. Bastedo et al. (2018) examined how admissions officers apply holistic review criteria in their evaluations as a means of informing how to improve transparency of holistic admission. Using their findings, they devised a grounded typology of holistic review that suggests three approaches to reviewing files holistically: whole file, whole person, and whole context. The whole file review focuses on the entire application and ensuring "that all submitted application materials were considered when rendering admissions decisions" (p. 790). The whole person review "sought to evaluate academic achievements in light of the applicant's character, personality, or ability to contribute to the community in a unique way" (p. 791). In comparison, admissions officers using the whole context approach "considered all elements of the application and valued treating applicants as unique individuals, but they placed those applicants in the context of the opportunities available in their families, neighborhoods, or high schools" (p. 793). This typology demonstrates that holistic admission can be applied in different ways while considering individual applicant attributes that go beyond academics.

In summary, while grades and additional academic metrics should continue to be part of the admission evaluation process, "holistic review places academic metrics in the proper perspective" (Capers et al., 2018, p. 12). A universal and consistent definition of holistic review may be out of the question, though common guiding principles can help shape the holistic review process. Thinking of holistic review as a "flexible,

individualized process for assessing an applicant's potential for success" (Francis et al., 2021, p. 3) will allow institutions to create and implement practices that are unique to their institutional mission and serve their diversity goals.

Impacts of Holistic Admission on Diversity

According to the research literature, holistic admission practices tend to be more prevalent for health sciences programs such as nursing, medicine, and dentistry (Capers et al., 2018; Felix et al., 2012; Grabowski, 2017; Wilson et al., 2014; Wros & Noone, 2018; Zerwic et al., 2018). There are also documented examples of institutions employing holistic admission to increase diversity in undergraduate populations (Kalsbeek et al., 2013) and in honors programming in particular (Radasanu & Barker, 2021).

Of the five studies identified that focused on medical education and nursing, four implemented a holistic review process by adopting the experiences, attributes, academic metrics (E-A-M) model proposed by the AAMC. Capers et al. (2018) outlined how Ohio State University College of Medicine increased the diversity of their matriculated class by implementing the E-A-M model in both the screening and interview phases of admissions. Over a five-year period, the number of matriculated female students increased by 9% and the number of students traditionally underrepresented in medicine increased by 13%. The authors asserted that "the most critical portion of admissions is screening; this is also the step at which holistic review has the greatest impact" (p. 13). The impact of employing holistic review at the screening stage was also a focus for Grabowski (2017). Recognizing the prevalence of holistic review in medical school admission decisions, Grabowski set out to determine whether holistic admission could play a role in increasing the diversity of the interview pool. The results indicated that a holistic review resulted in the selection of a pool of candidates who were more diverse in terms of gender identification (+11% women), those traditionally underrepresented in medicine (+13%), first-generation students (+8.1%), and self-identified disadvantaged status (+11%). Felix et al. (2012) completed a pre/post holistic admission comparison for a physician assistant program which utilized a combination of non-academic factors representing personal experiences, personal attributes, and personal characteristics. Their results revealed that holistic admission successfully increased diversity in the student population in terms of age, gender, and ethnicity.

As previously noted, use of the E-A-M model has not been limited to schools of medicine. The American Association of Colleges of Nursing (AACN) has developed four core principles of holistic review, one of which includes balancing consideration of applicant experiences, attributes, and metrics (Byrd et al., 2020). Wros and Noone (2018) used these principles to implement a new admission procedure for a nursing program, employing holistic review practices in the screening phase as well as in the interview phase of the admission process. The program subsequently saw an increase in the diversity of entrants with the percentage of underrepresented minority students increasing by 5% over three years. In another study of the adoption of holistic admission practices for nursing, Zerwic et al. (2018) similarly concluded that a pre- and post- holistic admission evaluation resulted in a more ethnically diverse student body.

Another frequently adopted framework for holistic admission that emerged from this literature review is Sedlacek's (2003) Noncognitive Questionnaire (NCQ). Recognizing the importance of employing holistic review practices, the East Carolina University School of Dental Medicine implemented an applicant evaluation process that incorporates the NCQ (Wilson et al., 2013) into admissions. Over three years, the percentage of underrepresented students admitted to the school more than doubled. The NCQ has also been applied to undergraduate admissions at DePaul University which sought to become more selective with admission decisions without negatively affecting its ability to serve the same diverse population (Kalsbeek et al., 2013). The university opted to replace its generic admission essay with short-answer questions strategically designed to evaluate students on the scales of the NCQ. By employing this approach, DePaul was successful in adjusting its undergraduate admission criteria without adverse impacts to admission for disadvantaged groups (Kalsbeek et al., 2013).

In another study of the impact of holistic admission practices, Radasanu and Barker (2021) outlined an approach to undergraduate honours program admissions that sought to assess non-academic criteria garnered using essay questions. Shifting to this test-blind, holistic review increased the diversity of the

incoming student class with the number Black first-year students tripling and the number of Hispanic students doubling. The overall honors applicant pool also saw dramatic increases in the number of Black applicants (+150%) and Hispanic applicants (+100%). This holistic approach was deemed so successful that "going forward, students will all be assessed based on holistic review, and standardized test scores will not be accepted" (Radasanu & Barker, 2021, p. 49).

In summary, holistic admission has proven an effective method of increasing the diversity of an applicant pool as well as the admitted student body. Francis et al. (2021) suggests the holistic admission approach is valuable and effective because it emphasizes the whole person rather than simply academic metrics. A holistic approach "has the potential to mitigate racial and ethnic disparities in the [admissions] process" (Francis et al., 2021, p. 3). As is outlined below, while holistic admission may be an effective means of increasing student diversity, its benefits are not always possible without some degree of challenge.

Challenges of Holistic Admission

Researchers who have studied admissions acknowledge the extra time and resources required for successful execution of holistic admission and that "admissions work will continue to increase in both volume and difficulty" (Shulman, 2018, p. 10). In their review of barriers to implementing holistic review, Glazer et al. (2016) found there was a concern among admissions leaders regarding the "increase in faculty time, resources, staffing, and support funding" (p. 310). Because of this, researchers have indicated that some institutions may be reluctant to integrate holistic practices into their admissions (Felix et al., 2018; Grabowski, 2017). Bastedo et al. (2018) noted "there may be legitimate reasons why contextualized holistic review is not yet pervasive in [higher education], including large and rising numbers of applications, [and] the costs of time-intensive holistic review processes"(p. 802).

Because of the notable challenges and constraints, holistic admission may be accessible to some institutions more than others. Completing in-depth evaluations of short answer and essay questions that reflect non-academic measures is a time- and resource-heavy endeavor. Recognizing the resource intensive nature of holistic review, researchers have investigated whether software and data analytics can automate the process and alleviate resource pressures. For example, Gilbert (2008) argued that holistic reviews are a challenge for institutions because "no one has devised a truly holistic evaluation system that does not give preferential treatment to race, gender, national origin, etc., such that it can be proved that no preference was given" (p. 15). To avoid this appearance of bias, he suggests using of the software *Applications Quest* to achieve reproducible and measurable outcomes in holistic admission. This software tool measures the similarities and differences between applications and clusters similar applications together to optimize diversity. Importantly, Gilbert's research with the software found that it helps to increase diversity while reducing the amount of time and human resources required for these more complex evaluations. Shulman (2018) similarly observed that the utilization of data analytics and scoring from standardized tests designed to assess noncognitive factors could help to reduce real or perceived bias. Leveraging standardized tests designed to measure elements like social and emotional intelligence, work/program fit, and/or personality traits may assist institutions in capturing applicant non-academic attributes in a process that is both unbiased and budget-conscious.

LIMITATIONS

In compiling this review, two notable limitations became apparent. First, as noted, the majority of the empirical research on holistic admission has centered on programs in health sciences fields including medicine, nursing, and dentistry. This is possibly the case because there are oversight bodies (AAMC and AACN) that have adapted the research in the area and devised guidelines on implementing holistic admission. Perhaps holistic admission is more accessible to these professional programs because they receive fewer applicants than much larger first-year undergraduate programs. In addition, the growing body of research on patient care disparities among diverse populations is well-documented and provides healthcare professions with a compelling motive to actively seek to educate professionals of diverse backgrounds. A second limitation of this review is the fact that the extant research in this area has been

largely focused on universities in the United States. The lack of research on holistic admission practices outside of the US context is a notable gap in the conversation on achieving greater EDI.

CONCLUSION

Although holistic admission stems from less than admirable origins, higher education appears to be coming full circle and casting holistic review in a new light. The ongoing argument that success on standardized tests is more achievable by students from privileged backgrounds has institutions considering the validity of test results as indicators of student preparedness and potential (Radasanu & Barker, 2021; Sedlacek, 2003). Combined with a push to create higher education environments that are more reflective of the modern workforce (Gurin et al., 2002), universities across the United States have increasingly embraced a holistic approach to admission.

A review of the literature confirms holistic review is a complex approach to admission that considers a wide variety of individual characteristics. While some authors suggest the absence of a universally-accepted definition of holistic admission results in inconsistencies in how the approach is applied (Bastedo et al., 2018; Glazer et al., 2016; Hossler et al., 2019), others contend that holistic admission must remain flexible and mission driven (AAMC, 2022; Byrd et al., 2020; Coleman & Keith, 2018; Francis et al., 2021). Instead of a definitive and prescriptive definition to guide implementation, promoting the use of foundational principles may be a more appropriate approach to supporting adoption of holistic admission. Guiding principles may serve as a starting point for any institution considering adjusting their admission process to be more holistic. But, overall, holistic admission is a complex and impactful process that must be thoughtfully designed and implemented. Considering student experiences and attributes alongside academic metrics provides a thorough, individual perception of the strengths and character of each applicant.

Modern society and an increasingly globalized economy requires innovative problem solving and collaboration, and a willingness to engage with and learn from diverse others. It is imperative that the higher education ecosystems shaping student experiences reflect the world and the challenges they will face after graduation. A learning environment rich with diversity experiences is an important way to provide students with the perspectives and skills required to flourish in a global workforce. These learning environments are only as diverse as the students institutions admit and holistic admission processes represent an effective avenue for enhancing higher education and providing all students with the opportunity to succeed in their studies and beyond.

REFERENCES

American Association of Medical Colleges. (2022). *Holistic review*. Retrieved from https://www.aamc.org/services/member-capacity-building/holistic-review

Bastedo, M.N., Bowman, N.A., Glasener, K.M., & Kelly, J.L. (2018). What are we talking about when we talk about holistic review? Selective college admissions and its effect on low-SES students. *The Journal of Higher Education*, 89(5), 782–805.

Brennan, J., & Naidoo, R. (2008). Higher education and the achievement (and/or prevention) of equity and social justice. *Higher Education*, 56(3), 287–302.

Byrd, D.A., DeWitty, V.P., Morris, J.W., Nadeau, J.W., Rosenberg, L., & Sonke, A. (2020). *White paper – Promising practices in holistic admissions review: Implementation in academic nursing*. American Association of Colleges of Nursing. Retrieved from https://www.aacnnursing.org/Portals/42/News/White-Papers/AACN-White-Paper-Promising-Practices-in-Holistic-Admissions-Review-December-2020.pdf

Capers, Q., McDouglas, L., & Clinchot, D.M. (2018). Strategies for achieving diversity through medical school admissions. *Journal for Health Care for the Poor and Underserved*, 29(1), 9–18.

Chun, E., & Evans, A. (2018). *Leading a diversity culture shift in higher education: Comprehensive organizational learning strategies*. Abingdon-on-Thames: Routledge.

Coleman, A.L., & Keith, J.L. (2018). *Understanding holistic review in higher education admissions*. College Board. Retrieved from https://professionals.collegeboard.org/pdf/understanding-holistic-review-he-admissions.pdf

Crouse, J., & Trusheim, D. (1988). The case against the SAT. *The Public Interest*, *93*, 97–110.

Felix, H., Laird, J., Ennulat, C., Donkers, K., Garrubba, C., Hawkins, S., & Hertweck, M. (2012). Holistic admission process: An initiative to support diversity in medical education. *The Journal of Physician Assistant Education*, *23*(3), 21–27.

Francis, A.M., Klein, L.B., Thomas, S.H., Kainz, K., & Wilson, A.B. (2021). Holistic admission and racial/ethnic diversity: A systematic review and implications for social work doctoral education. *Journal of Social Work Education*, pp. 1–18.

Gilbert, J. (2008). Applications quest: A case study on holistic diversity in admission. *Journal of College Admission*, *199*, 12–18.

Glazer, G., Clark, A., Bankston, K., Danek, J., Fair, M., & Michaels, J. (2016). Holistic admissions in nursing: We can do this. *Journal of Professional Nursing*, *32*(4), 306–313.

Grabowski, C.J. (2017). Impact of holistic review on student interview pool diversity. *Advances in Health Science Education*, *23*, 487–498.

Gurin, P., Dey, E.L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, *72*(3), 330–366.

Hossler, D., Chung, E., Kwon, J., Lucido, J., Bowman, N., & Bastedo, M. (2019). A study of use of nonacademic factors in holistic undergraduate admissions reviews. *The Journal of Higher Education*, *90*(6), 833–859.

Jalali, S., & Wohlin, C. (2012, September 19–20). *Systematic literature studies: Database searches vs. backward snowballing*. Paper presented at the International Conference on Empirical Software Engineering and Measurement, Lund, Sweden.

Kalsbeek, D., Sandlin, M., & Sadlacek, W. (2013). Employing noncognitive variables to improve admissions, and increase student diversity and retention. *Strategic Enrollment Management Quarterly*, *1*(2), 132–150.

Lewis, L.S. (2021). Can Greentree University adopt holistic admissions practices and still maintain status as an elite institution? *Journal of Cases in Educational Leadership*, *24*(2), 126–134.

Morrison, E., & Grbic, D. (2013). The relationship between racial and ethnic diversity in a class and students' perceptions of having learned from others. *Analysis in Brief, Association of American Medical Colleges*, *13*(6), 1–5.

Park, J.J., Denson, N., & Bowman, N.A. (2013). Does socioeconomic diversity make a difference? Examining the effects of racial and socioeconomic diversity on the campus climate for diversity. *American Educational Research Journal*, *50*(3), 466–496.

Radasanu, A., & Barker, G. (2021). The role of admissions practices in diversifying honors populations: A case study. *Honors in Practice*, *17*, 45–62.

Sedlacek, W. (2003). Alternative admissions and scholarship selection measures in higher education. *Measurement and Evaluation in Counseling and Development*, *35*, 263–272.

Shulman, J. (2018). The data we need for holistic admissions. *Change: The Magazine of Higher Learning*, *50*(5), 8–15.

Veysey, L. (1980). The history of university admissions. *Reviews in American History*, *8*(1), 115–121.

Wilson, M.B., Sedlacek, W.E., & Lowery, B.L. (2014). An approach to using noncognitive variables in dental school admissions. *Journal of Dental Education*, *78*(4), 567–574.

Wros, P., & Noone, J. (2018). Holistic admissions in undergraduate nursing: One school's journey and lessons learned. *Journal of Professional Nursing*, *34*, 211–216.

Zerwic, J.J., Scott, L.D., McCreary, L.L., & Corte, C. (2018). Programmatic evaluation of holistic admissions: The influence on students. *Journal of Nursing Education*, *57*(7), 416–421.