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A Critical Appraisal of Educational Theory to Examine HBCU and Black Students' Professional Identity Formation

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Abstract:	<p>Objectives This article explores educational theories and existing literature that describe the impact of Historically Black College or University (HBCU) educational environments on Black students' personal and professional development. Literature on professional identity formation in pharmacy education is also examined to describe the influence of HBCU pharmacy education on Black pharmacy students' professional identity formation (PIF).</p> <p>Findings Tinto's theory of student retention, Arroyo and Gasman's HBCU-educational framework, and Bank's theory of multicultural education are described, as key elements of HBCU education that foster professional identity formation in minoritized student populations. Each of the three models addresses professional identity traits associated with pharmacists and pharmacy students, and this review examines the role of HBCU education in Black Doctor of Pharmacy (PharmD) students' development of academic competence, leadership, professional communication, and advocacy.</p> <p>Summary Existing educational frameworks and models of student retention can be applied to promote student growth, psychological safety, and feelings of belonging in minoritized student populations. By engaging these models, pharmacy training environments can support Black students and other minoritized student populations as they develop their own professional identities in the pursuit of fulfilling careers.</p>
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<p>Significance Statement: Provide a brief, 2-3 sentence-long statement regarding the significance of your submission. How does your submission contribute and advance the broad area of pharmacy education?</p>	<p>Black identity, the formation of Black identity in a predominantly white higher education landscape, theories for Black education, and the creation and continued support for Historically Black Colleges and Universities (HBCUs) has been extensively debated in higher education literature. However, there is a lack of studies investigating the impact of health professions education at an HBCU on the development of professional attributes, skills, aptitudes, and behaviors pertinent to that specific health profession. We use the term Black to include African American, African, and other individuals with roots to the African diaspora, regardless of their nationality or country of residence.</p> <p>Here, we will examine the current status of the two prominent and widely accepted educational frameworks developed for investigating the impact of an HBCU-based education on student success. Specifically, we compare Arroyo and Gassman's framework with that of Bank's and summarize the similarities and differences between the models regarding maximizing student success. While Arroyo and Gassman's framework articulates an institution-focused, non-Eurocentric educational model for student success at HBCUs, Bank's multicultural education model or "multiculturalism" supports the creation of equal educational opportunities for all students.</p>
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A Critical Appraisal of Educational Theory to Examine HBCU and Black Students' Professional Identity Formation

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Abstract**Objectives**

This article explores educational theories and existing literature that describe the impact of Historically Black College or University (HBCU) educational environments on Black students' personal and professional development. Literature on professional identity formation in pharmacy education is also examined to describe the influence of HBCU pharmacy education on Black pharmacy students' professional identity formation (PIF).

Findings

Tinto's theory of student retention, Arroyo and Gasman's HBCU-educational framework, and Bank's theory of multicultural education are described, as key elements of HBCU education that foster professional identity formation in minoritized student populations. Each of the three models addresses professional identity traits associated with pharmacists and pharmacy students, and this review examines the role of HBCU education in Black Doctor of Pharmacy (PharmD) students' development of academic competence, leadership, professional communication, and advocacy.

Summary

Existing educational frameworks and models of student retention can be applied to promote student growth, psychological safety, and feelings of belonging in minoritized student populations. By engaging these models, pharmacy training environments can support Black students and other minoritized student populations as they develop their own professional identities in the pursuit of fulfilling careers.

INTRODUCTION

The process of forming a Black student identity in a predominantly white institution (PWI), theories for Black education, and the creation and continued support for Historically Black Colleges and Universities (HBCUs) and Predominantly Black Institutions (PBIs) have been comprehensively examined in higher education literature.¹⁻³ While educational theories and empirical studies have compared the relative impact of education at an HBCU/PBI or PWI on Black undergraduate students' personal and professional development, there have been sparse investigations of the influence of HBCU/PBI-based education on the development of professional students' and particularly pharmacy students', professional identity.⁴⁻⁷ Long-term systemic racism compounded by inequitable access to healthcare education for Black students has denuded the US Black pharmacist workforce. Thus, a positive, culturally sensitive, nurturing, and equitable pharmacy educational environment is vital for building the personal and professional identity of Black student pharmacists. Here, we describe three undergraduate education frameworks that may be adapted to enhance the retention, success, and professional identity formation (PIF) of Black PharmD students by contextualizing the unique role of HBCUs and PBIs.

Pharmacists' professional identity comprises more than merely professional behavior. Rather it includes the way pharmacists "think, act, and feel" and encapsulates the skills, attitudes, aptitudes, and behaviors with which professionals and communities of practice associate themselves.^{8,9,10} However, pharmacists' professional identity evades a uniform description because pharmacists fulfill myriad roles in a variety of settings. In 2021, the Student Affairs Standing Committee of the American Association of Colleges of Pharmacy (AACCP) issued a report that emphasized the lack of a consensus definition for the professional identity of pharmacists.¹⁰ The authors outlined 13 common pharmacist professional domains including collaboration, collecting information, communication, recommendation, enhancing adherence, dispensing, implementation of therapy, promoting health and wellness, patient advocacy, patient care focus, evidence-based practice, creativity, and medication expertise. At their core, these common pharmacy professional identity domains share the four basic professional identity attributes of academic competence, leadership, communication, and professional advocacy.

The impact of diverse life experiences, learning backgrounds, and racial, ethnic, and cultural identities on pharmacists' and pharmacy students' professional identity remains unexamined. Undergraduate educational frameworks examining Black student success afford novel mechanisms for building an HBCU-based theory of Black pharmacy students' professional identity formation. Herein, we discuss how the reinforcement of Black identity at HBCUs/PBIs can positively impact students' confidence and the development of professional identity traits of academic competence, leadership, communication, and professional advocacy. After presenting prominent educational frameworks such as Tinto's theory of student retention, Arroyo and Gasman's HBCU-educational framework, and Bank's theory of multicultural education, we illustrate best practices and recommendations for deploying these frameworks for building Black pharmacy students' professional identity.^{11,12,13}

LITERATURE REVIEW

Current Status of Pharmacy HBCUs and PBIs in the United States

The Higher Education Act of 1965 defined HBCUs as institutions established before 1964 with the explicit function of educating Black Americans.¹⁴ HBCUs continue to educate Black Americans at a high rate despite an increase in attendance by non-Black students. In 2021, Black Americans made up 13.1% of the overall college student population and accounted for 75% of the student population at HBCUs.^{15,16} PWIs (also termed Traditionally White Institutions, TWIs), have more White students than students from historically underrepresented racial groups.¹⁴ While many institutions have implemented initiatives to promote the diversity of incoming pharmacy students, most non-HBCU and non-Hispanic-serving institutions have predominantly White or Asian students.^{16,17} As of 2022, there are six PharmD offering HBCUs, with three public (Florida Agricultural and Mechanical University, Texas Southern University, and the University of Maryland Eastern Shore) and three private institutions (Hampton University, Howard University, and Xavier University of Louisiana). In 2019, HBCU pharmacy school enrollment accounted for only 3% of the entire pharmacy school student population at 143 US pharmacy schools but was responsible for 21% of African Americans enrolled in PharmD programs, a downward shift from 28% in 2014.¹⁸⁻²¹

In addition to the HBCU designation, institutions may be classified as PBIs under the Higher Education Act of 2008, if they have an undergraduate student enrollment that is not less than 40% Black American and that is not less than 50% comprised of students characterized as being economically disadvantaged (low-income) or first-generation college matriculants.²² Thus, although PBIs do not meet the criteria to be classified as HBCUs, they serve a similar student demographic population. Currently, one public US pharmacy school is within a PBI (Chicago State University).¹⁹

Educational Frameworks for Students' Personal and Professional Identity Formation: Past and Present Status

HBCUs proved indispensable for educating African Americans during the segregation era and before 1950 when 75% of Black students were educated within HBCUs.^{23,2} Post-segregation, a review of literature documents better outcomes in student learning and self-confidence for Black students at HBCUs as compared to PWIs.^{24,25} For example, Black students at HBCUs are more likely to report higher grade point averages (GPAs), better psychological development, greater satisfaction with campus activities and cultural support, and greater academic growth and maturity.²⁴⁻²⁶ Moreover, students at HBCUs have better relationships with faculty and staff and are more likely to aspire to an advanced degree.²⁴ HBCUs have also been acknowledged for having culturally engaging environments that center Blackness in pedagogy and embracing Black students' cultural backgrounds.²⁶ Thus, HBCUs and PBIs have a documented impact on the personal and professional development of Black students in the United States.^{26,27} As detailed later, many of these high-performer attributes such as high GPA, self-confidence, academic competence, maturity, strong relationship-building, communication, and leadership form an integral part of pharmacy students' professional identity, thus forging a link between the desirable professional identity attributes of Black pharmacy students and these HBCU/PBI educational environments.^{28,29,30}

Importantly, the impact of HBCUs and PBIs on Black students' personal and professional identity has engendered educational frameworks to identify and replicate Black student success.^{12,13} Common factors identified include student success parameters such as socialization leading to on-time graduation and academic competence, development of communication and leadership skills, and fostering students' sense

of belonging and personal and professional identity.^{11,12,13} From the literature, it appears that prominent among these educational frameworks are those that examine 1) the reasons for student college dropout as captured in Tinto's theory of student departure, 2) the impact of an HBCU institution on the personal and professional identity of Black students, detailed by Arroyo and Gasman's HBCU-institutional framework, and 3) the adoption of a multicultural education approach explained in Bank's multiculturalism model.^{11,12,13} The pharmacy academy can greatly benefit from understanding how these educational frameworks may be best applied to foster the optimal personal and professional identity development of pharmacy students, particularly those from Black and minority populations.

Tinto's theory of student departure (alternatively, theory of student retention) posits that students are more likely to remain in college and graduate if they feel a strong sense of belonging.¹¹ Tinto's theory was initially described to explain student retention, regardless of the student's race, ethnicity, or stage of professional identity formation.¹¹ Tinto's framework highlights the value of feelings of belonging in student retention and suggests that belonging can be achieved through the process of socialization.¹¹

Figure 1 depicts Tinto's assertion that forming relationships and social interactions with other students, faculty, and staff promotes the academic and social integration of students, thus committing them to the collegiate process. While other factors such as familial background and personal attributes also play a strong role in determining students' commitment toward the goal of degree completion and graduation, academic success can be enhanced through support from social and academic ecosystems and structures that can incentivize commitment. This theory formed the basis for much of the subsequent work in defining and measuring student success, development, and outcomes. Although not specific to racial or professional identity, Tinto's theory emphasizes holistic and personal development as essential for PIF which in turn is essential for student success or "goal completion." Tinto's framework also aligns with various elements from the 2016 Accreditation Council for Pharmacy Education (ACPE) Standards, including the affective domain covered in ACPE Standard 4, as well as student services, co-curricular, and pre-APPE Standards (Standard 12, 12.2, 12.3, and Standard 14).³¹ Similarly, these initiatives align

with Standard 17 elements that focus on student progression, and diversity, equity, inclusion, and belonging initiatives that many programs across the academy have been implementing.³¹

Arroyo and Gasman developed the HBCU-institutional framework to emphasize the role of an HBCU education in impacting student development and personal and professional identity traits.¹² Figure 1 also summarizes the major tenets of their theory which posits that HBCUs provide more accessible and economically viable entry points for Black students while offering a supportive environment conducive to academic success, values cultivation, learning and applying the Black tradition, community outreach, service, communication and leadership, and, by extension, professional advocacy. Thus, Tinto's "socialization" and social and academic support structures are inherently embedded within this HBCU educational framework. It is important to point out that many of these personal and professional development attributes are included in the developing definition of pharmacy students' professional identity. Thus, there is a need within the pharmacy academy to understand how to apply Arroyo and Gasman's framework to augment the optimal development of Black and non-Black students' sense of professional identity.¹²

Bank's multicultural education theory emphasizes the inclusion of a curriculum that follows an African American and Black "lived experiences" reference frame or one based on equity pedagogy which includes multiple, frequent, and pluralistic examples of educational content relevant to the racial and cultural identity of the African American and Black student.¹³ The term "lived experiences" also recognizes that many Black students have encountered marginalizing situations in both their academic and personal lives that have impacted their perspectives and personal and professional identities. As shown in Figure 2, this educational framework is comprised of five essential components- content integration, knowledge construction, prejudice reduction, and equity pedagogy. Content integration occurs when examples specific to different situations are included in the curriculum. Knowledge constructions happen when the reference frame is contextualized to include various diverse experiences. Prejudice reduction emphasizes expanding democratic values through exposure to diverse individuals. Equity within pedagogy means using instructional techniques that are equally accessible to students of

various racial, ethnic, and social backgrounds. Each facet of a multicultural educational paradigm directly influences pharmacists' PIF by facilitating knowledge construction through a diversity of lenses. Tinto's framework includes professional identity attributes within the "grade performance" and "intellectual development" components of the academic environment and the "peer group interactions" and "faculty interactions" of the social environment in colleges.¹¹ Arroyo and Gasman in their HBCU theory for Black student success refer to "identity formation", which includes racial/ethnic identity, intellectual development, and leadership; "achievement", which includes GPA, cognition, persistence; and, "values cultivation", which includes Black tradition, social justice, and conservatism.¹² Bank's multicultural education model is premised on content integration, knowledge construction, prejudice reduction, and equity pedagogy.¹³ Thus, all models, directly or indirectly include professional identity traits associated with pharmacists and pharmacy students, especially competence, leadership, and professional communication and advocacy.

Table 1 compares and contrasts the similarities and differences between these three prominent educational frameworks. Table 1 also connects the main postulates of these three theories with the common pharmacist professional domains identified by Janke et al.¹⁰ Based on this, we next examine the potential impact of an HBCU/PBI-based pharmacy education on the development of the academic competence, leadership, communication, and professional advocacy professional identity domains.

APPLICATION OF EDUCATIONAL FRAMEWORKS TO BUILD BLACK STUDENTS' PROFESSIONAL IDENTITY AT HBCUs AND OTHER INSTITUTIONS

Academic Competence

In Arroyo and Gasman's HBCU-based educational approach, student achievement, identity formation, and values cultivation work in tandem to impact the success of Black students.¹² By offering competitive learning environments and career pathways for Black students, HBCUs are recognized for producing higher levels of academic achievement among undergraduate African American students, in comparison to their peers at PWIs.^{32,33} For instance, Black medical students at HBCUs report a greater sense of

belonging and confidence in their academic ability and graduation goal stability in comparison to Black medical students at PWIs.³⁴

Medication expertise is identified as a common pharmacy professional identity domain (Table 1).^{10,31}

Academic competence is also emphasized by accreditation such as the ACPE Standards 2016 which outline several professional competencies for pharmacy students.³¹ Thus, the Arroyo and Gasman framework underscores the direct correlation between enhancing student academic achievement and professional competence through augmented self-identity and leadership skills. This is because the development of self-identity in an HBCU environment in part protects students from negative stereotypes.^{32,33} At HBCUs, Black cultural values are cultivated by exposing students to traditional African American principles, service, and community outreach to develop competent Black citizens with good character.^{34,35}

Furthermore, the transition to college can be challenging for students of color. If attending a PWI, there may be an additional challenge of adapting to the new environment in what they may perceive as having an antagonistic racial climate.³⁵

A well-recognized gap in graduation rates exists between Black and White students at non-HBCUs.^{34,37,38}

Nichols and Evans-Bells reported that at 676 four-year public and private colleges and universities (not including HBCUs), the six-year graduation rate for Black students was 45.4%, which is 19.3 points lower than the 64.7% graduation rate for White students.³⁸ The study also compared graduation rates for schools where 40-75% of the student population were Pell Grant recipients. When looking at the graduation rate of these institutions, which included HBCUs, the average graduation rate for Black students at HBCUs was higher than that of Black students at non-HBCU at 37.8% and 32%, respectively.³⁹ Additionally, when evaluating the academic and post-graduate success of Black students who attended medical school at a PWI, researchers determined there was no statistically significant difference in the performance of students who attended an HBCU versus a PWI for their undergraduate work. Although this demonstrates that HBCUs can academically prepare students for success in health profession school, it does not address the social environment that can also have an impact on student success.⁴⁰ The impact of HBCU and PBI

education on retention and graduation rates for professional graduate degree students may differ, warranting additional research.

Of course, while both Black and White students egress PWIs due to academic concerns, Black students are documented to do so due to social estrangement and developmental concerns.^{35,36} Students' sense of belonging, connection, and psychological safety have the potential to influence how they perceive academic challenges, setbacks, and other barriers to progression.^{39,40} Additionally, a sense of belonging has been identified as having a positive impact on student academic success and motivation.^{40,41} A study of African American college students at HBCUs and PWIs found that African American students who viewed the world through a cultural lens were more likely to recognize situations as racially motivated no matter what type of institution they attended.⁴² A higher grade point average and greater self-esteem were also reported by HBCU students. The results suggest a greater sense of belonging at HBCUs that is reflected in better academic results.⁴²⁻⁴⁴

Acknowledging the academic successes of students at HBCUs, Williams and colleagues examined the culturally relevant, sustaining practices that HBCU administration and faculty adopt that increase Black students' socio-political consciousness regarding issues related to Black communities.²⁷ As a basis for student success, these authors highlighted the significance of inclusive pedagogy that emphasizes culturally relevant knowledge and Black experiences. They concluded HBCU administrators and faculty members also promote Black student success by using cultural validation practices in conjunction with connecting with Black communities and Black students' backgrounds.²⁷

Leadership

Leadership is an affective domain included in the 2013 Center for Advancement in Pharmacy Education (CAPE) Outcomes and ACPE Standards 2016 emphasizing the development of associated knowledge, skills, and mindsets (attitudes) in pharmacy practitioners.^{43,31} Both leadership and professional identity formation include conceptual knowledge as foundational elements, but are primarily defined by mindsets and behaviors exhibited by individuals.^{10,44,45} Leadership can be defined as the ability to influence others, particularly in times of change or towards a particular, often shared, goal.^{44,45} Leadership aspects include

elements of emotional intelligence such as self-awareness and self-regulation, as well as interpersonal skills and relationship management abilities.^{44,46} Influencing can be improved through positive communication and organizational citizenship behaviors, many of which are impacted by the expected culture and norms of the profession, organization, and community.⁴⁵ Relative to the profession of pharmacy, leadership and the associated aspects of responsibility, professional service, and appreciation of fiduciary relationships are central to professionalization models.⁴⁷

HBCUs and PWIs offer leadership opportunities in the classroom as well as through co-curricular and extra-curricular activities. The demographic makeup and organizational missions of HBCU education reduce barriers for minority students to achieve formal leadership positions and can promote feelings of belonging when students are surrounded by others from similar backgrounds and ethnicities.³³ HBCU environments also minimize negative stereotypes, that may serve as barriers to formal leadership positions. Further, ethical leadership behaviors and aspects from the tenants of professionalism for pharmacists are reinforced by organizational cultures found in HBCU institutions, based on positive Black and African American community norms such as advocacy, neighborhood support, and respect for the family.³⁶ By practicing leadership mindsets and behaviors in psychologically safe environments, students can develop and reinforce the skills and attitudes that they will need as leaders post-graduation.⁴⁸ Therefore, as HBCU/PBI-based and non-HBCU-based pharmacy programs seek to prepare their students as future leaders and as suggested by Arroyo and Gasman's model, deliberate efforts to create environments of belonging, empowerment, and value for their Black/African-American students may help to promote the development of leadership attributes as part of their professional identity formation.¹²

Communication

For graduates to be able to engage proficiently with patients, practitioners, and non-pharmacist healthcare professionals, effective communication, cultural humility, and social awareness are necessary. Effective communication is embedded within the constitution of each pharmacist's professional identity, as it is foundational for developing compassionate and respectful relationships with patients and for effectuating strong leadership in their roles as advocates, innovators, and experts. In addition, PharmD education has

sought to use entrustable professional activities (EPAs) and graduates' ability to demonstrate the outcomes described in CAPE 2013 to demonstrate skillful communication.⁴³ ACPE Standards 2016 echo the importance of communication skills, dedicating Standard 3 elements specifically to communication (3.6), but also as necessary parts of cultural sensitivity (3.5), interprofessional collaboration (3.4), advocacy (3.3) and education (3.2).³¹

Some specific aspects of the learning and cultural environments at HBCUs and PBIs serve to build trainee aptitudes for and comfort with communication and sociocultural investment, which may manifest in a greater penetrance of patient and professional advocacy amongst their graduates. Namely, the psychological safety characteristics present in HBCU and PBI environments allow students to take risks and demonstrate appropriate vulnerability in communication and interpersonal relationships.⁴⁸ These environments provide spaces for student experience and growth as related to multiple commonly encountered barriers to successful healthcare encounters, including mitigation of the fear of sharing weakness or vulnerability, losing control, and/or losing respect from peers/instructors; fostering growth mindsets; practicing code-switching (adjusting one's communication approach and style when functioning in various settings), and refining adaptability in the professional setting. The latter skills, (the ability to speak to the audience and adapt to the various roles dictated by their profession) allow for continued growth in both personal and professional identities without sacrificing one for the other.³³ These aspects need additional research in health professions education, including PharmD curricular and co-curricular activities.

Professional Advocacy

Through their legacies focusing on healthcare advocacy and the mitigation of healthcare disparities experienced in underserved and underrepresented populations, HBCUs and PBIs cultivate environments that deliberately develop graduates' professional identities in these areas. This aspect is reflected in both Arroyo and Gasman's HBCU-based educational approach and Bank's multicultural education theories. Equity missions and equity environments promote advocacy as part of the institutional cultural norms; while this equity may originally focus on politicized targets, it also can be applied to developing

professional advocacy skills. For example, HBCUs and PBIs have worked collaboratively to improve community trust in the healthcare system, combatting the historical mistrust engendered by atrocities such as the Tuskegee Experiment and misinformation campaigns related to COVID-19 vaccination.²⁹ They have done so by developing culturally-sensitive targeted social media campaigns, service events, and health literacy programs.

Recent work by Wyatt and colleagues suggested that self-identity and, in particular, attributes of professional identity formation especially as related to community-mindedness, uplift, and mentorship/advocacy, take on primary importance among Black physicians and medical students, perhaps more so than within PIF frameworks that have been espoused within the White perspective-dominated literature.⁵⁸ This focus on advocacy and uplift was echoed in a separate study examining PIF in minoritized physician assistants and physicians.⁵⁸ Again, therefore, the tendency of HBCUs to more effectively engage African American pharmacy students in equity-focused environments and missions may serve as a model for non-HBCU/PBI institutions when considering how best to promote PIF formation amongst their Black/African-American students.

RECOMMENDATIONS FOR FUTURE RESEARCH

It is important to note that research into the impact of personal identity and its formation, including the ideas for student development and success encompassed by the three educational theories on professional behavior and professional identity formation is limited. Most of the literature on HBCU and PBI programs explores undergraduate student populations, necessitating additional research for graduate, professional, and health professions students. Researchers can further explore Tinto's theory, Banks' multicultural model, and Arroyo and Gassman's HBCU-based approaches for Black students seeking advanced graduate and professional degrees, including the PharmD.^{11,12,13} Research will need to account for differences in the age and maturity of students between undergraduate and health profession education populations, which may be further complicated by the inclusive missions of HBCU and PBI programs that enroll and support higher numbers of non-traditional students.^{5,6} Life experiences of older and/or more mature students may help strengthen the formation of personal identity and membership in various

social groups or contingencies. This must be acknowledged and accounted for, in addition to complicating factors including the need to take care of children, elderly relatives, and the financial responsibilities associated with being primary income earners, the cost of living, housing, and prior education-related debt.

Exploring how multicultural and HBCU educational theories may be applied within professional students and in pharmacy schools to positively impact nascent professionalism and professional behaviors is an urgent need. Such work can be applied at HBCUs, other Minority-Serving Institutions (MSIs), and at PWIs to improve the educational experience of students with traditionally minoritized backgrounds. This future-focused review sought to summarize information from the literature on the role of HBCUs and PBIs on PIF in both undergraduate and professional-level health professions students. To our knowledge, only one group has applied Tinto's theory to examine the reasons for student attrition in pharmacy programs.⁵⁰ A lack of socialization and social and academic structures such as those between the struggling student and their peer group or faculty were reasons for student departure or dismissal. Similar studies should be undertaken at HBCUs and PBIs to examine the interplay and linkages between professional domain skills such as academic competence, leadership, communication, professional advocacy skills, and the personal development of Black students. Specific activities that faculty and administrators at HBCUs and PWIs can apply, based on these models are also opportunities for future research. Further, it will be important for researchers to consider other aspects that differ across PharmD and graduate pharmacy education, including the region in the country, proximity to metropolitan areas, program duration, and association with undergraduate and/or residential or commuter campus settings. Researchers will also need to examine the impact of the environments of self-described 0-6 year pharmacy programs, 2+4 programs, and accelerated 3-year PharmD programs, on students' feelings of belonging and psychological safety, and to explore how these factors impact student growth in personal, professional, and social spheres. Additionally, whether the foundational premise of Arroyo and Gasman's theory and Bank's multiculturalism may be applied to other institutions with majority minoritized student populations such as Hispanic Serving Institutions (HSIs), Native American-Serving Non-tribal

Institutions (NASNIs), Alaska Native and Native Hawaiian-Serving Institutions (ANNHSI), and other MSIs are also reasonable questions to also pursue.

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FIGURE LEGENDS

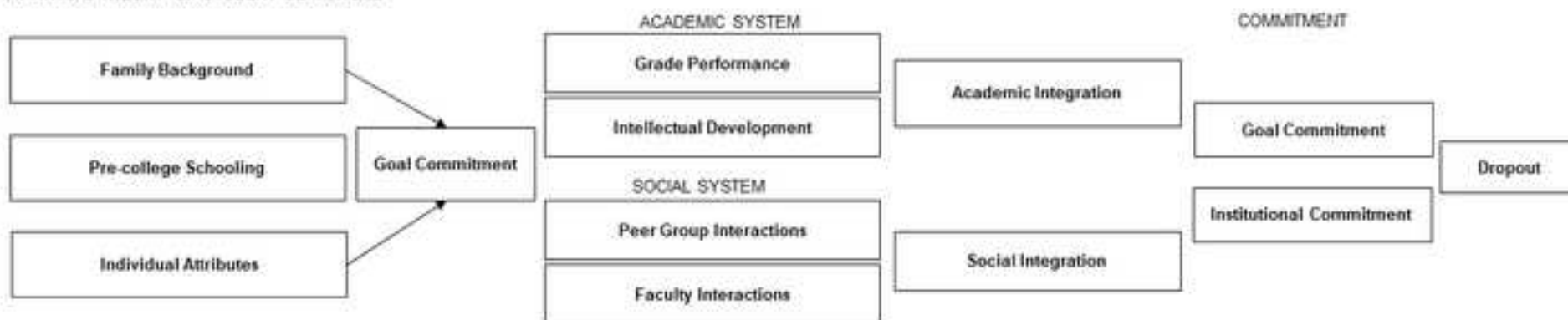
Figure 1. Two prominent educational theories are depicted emphasizing the personal, institutional, academic, and social relationships to achieve student success, completion of the goal of graduation, and identity formation. 1A shows Tinto's theory of student departure ending with the outcome of student dropout if all the stages are not sequentially in place. 1B depicts Arroyo and Gasman's HBCU-based institutional theory, detailing the relationships starting from Black students' entry into an HBCU to the conclusion of their educational journey with emphasis on the differences between HBCU and PWI developmental stages. The manner in which each of the developmental stages of these educational theories may be used to cultivate pharmacy students' professional identity domains is explained in Table 1.

Figure 2. The top panel (2A) depicts Bank's Multiculturalism theory, showing all 5 stages and their interconnectedness. The bottom panel (2B) shows the relationships between the developmental stages that encompass professional identity formation starting from personal identity through the process of socialization. The socialization process is an integral part of the student success and identity formation educational theories. Its role in the development of pharmacy professional identity domains is elaborated in Table 1.

Figure 1

Figure 1. Comparison between Tinto's Theory of Student Departure (1A) and Arroyo and Gasman's HBCU-based Educational Framework for Black College Student Success

1A. TINTO'S THEORY OF STUDENT DEPARTURE



1B. ARROYO AND GASMAN'S HBCU-BASED EDUCATIONAL FRAMEWORK FOR BLACK COLLEGE STUDENT SUCCESS

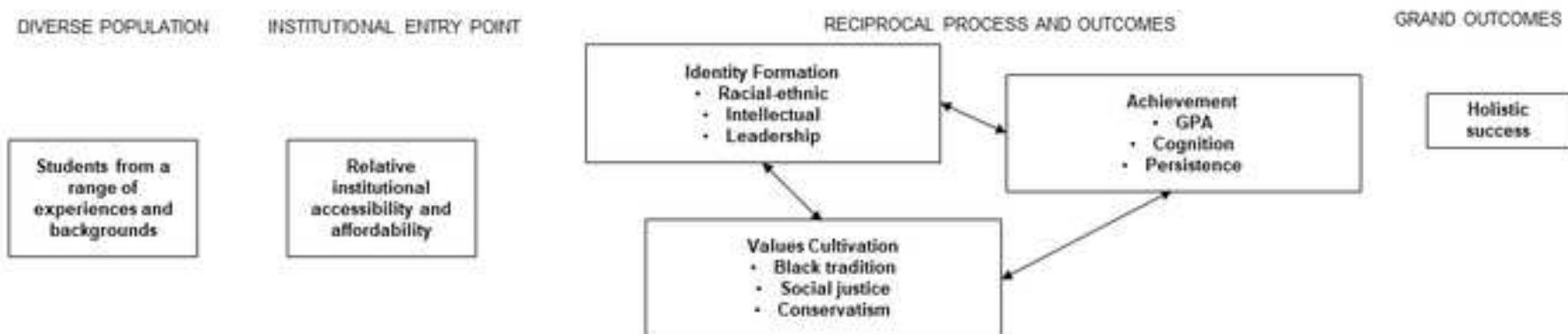
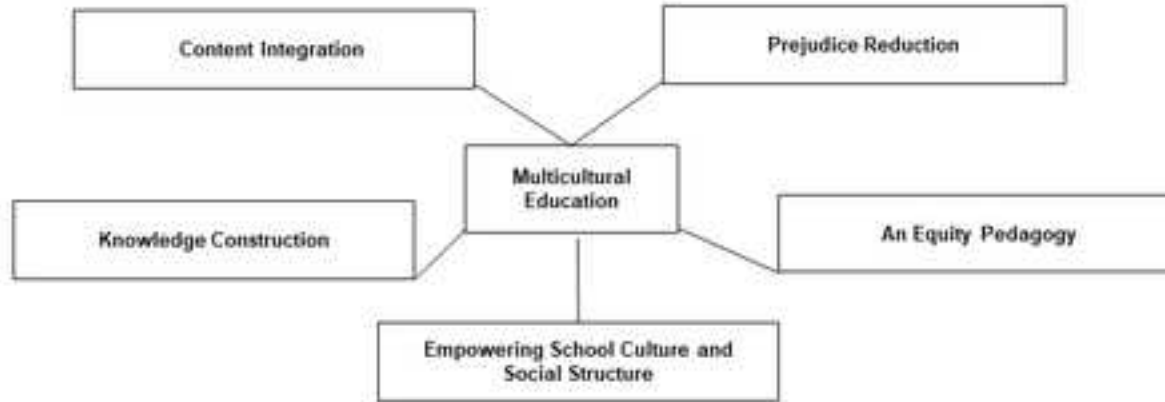


Figure 2. Bank's Multiculturalism Educational Framework for Student Success and the Socialization Process for Professional Identity Formation

2A. BANK'S MULTICULTURALISM MODEL



2B. THE PROCESS OF PROFESSIONAL IDENTITY FORMATION



Table 1. A Blueprint for Applying Educational Theory Principals to Achieve Different Pharmacist Professional Identity Domains for Black Student Success

Pharmacy PIF ^a Professional Domains	Skills Needed	Tenets of Educational Frameworks That Apply to Building PIF Domains		
		Tinto's Theory of Student Departure ^b	Arroyo and Gasman's HBCU-Institutional Model ^c	Bank's Multiculturalism Framework ^d
Collaboration, Teamwork	Interpersonal interactions	A social system for student success Peer group interactions Integration of students in a peer-based social interaction platform with student ownership, belonging, and pride Examples can include Student organizations Peer self-help groups Peer-to-peer tutoring	Supportive, positive environment for Black students Build multiple opportunities for Black students to form relationships with peers, faculty, staff, and practitioners beyond the classroom Students encouraged to engage in co-curriculum Create an "environment of progress"	Knowledge construction Teachers help students to understand how biases, frames of reference, and perspectives within a discipline influence the ways in which knowledge is constructed. Students learn how to build knowledge
Communication Counseling Education	Social interactions	Build a social system for student success Harness student-faculty relationships Integrate students into informal institutional structures and social experiences Social integration that strengthens students' institutional commitment to their college and professional achievement Social integration should extend to relationship building between students and faculty	Values cultivation: "Black tradition" Cultivate a set of traditional African American principles to develop Black citizens of competence and character Need to overcome conservative elements of Black values cultivation such as subordination, restrictions on sexuality, and self-presentation	Prejudice reduction Integrate content to help students develop positive attitudes toward different racial, ethnic, and cultural groups Create teaching materials that include content about different racial and ethnic groups
Collect pertinent information Recommend, Prescribe, Order Medication expertise Prepare, Dispense, Provide Medications Implementation of plans, Therapy, Testing	Academic competence	Integration into institutional academic systems and achievement of academic performance For achievement of academic competency, students struggling with academic success must feel committed to degree completion Integrate students into the academic system by enhancing faculty- student interaction	Academic achievement Arroyo and Gasman suggest academic outcome measures such as: GPA Cognition Persistence HBCU and PBIs should adopt culturally relevant pedagogy, curriculum, and co-curriculum	Content integration Use examples and content from a variety of cultures and groups to illustrate key concepts, generalizations, and issues within pharmacy and healthcare subject areas

Enhance adherence Promote Health and Wellness Patient Care Focus and Patient Advocacy	Building patient and community relationships	Students' backgrounds influence goal commitment Pre-pharmacy school education Childhood home environment Work experience Leverage the above to create educational experiences reinforcing graduation commitment Student background and personal story will reinforce commitment towards communities and persons with similar lived experiences	Build identity formation Identity inclusive of 3 components: Racial-ethnic identity Intellectual ability Leadership Shield students against negative stereotypes Provide same-race models Social-consciousness and change-related leadership role models	Build an empowering school culture and social structure Transform school culture and organization to enable students from diverse racial, ethnic, and gender groups to experience equality and equal status Transform attitudes, beliefs, and actions of teachers and administrators to be inclusive Transform curriculum, assessment, and testing procedures to be inclusive Transform teaching strategies to be inclusive
Evidence-Based Practice	Interaction with the community of practice	Not applicable	Career attainment Civic contribution Emphasis on building a “qualitatively rich interaction between real people where human individuality, freedom, and high context interaction are practiced as a lived holistic philosophy”	Knowledge construction Help students understand how different frames of reference and perspectives influence knowledge construction
Creativity, Innovation, Entrepreneurship	Socialization	Integration of the academic and social systems Achieved by ensuring student success and progression toward graduation goal commitment and achievement through integrated socialization	Enhance socialization among students, student-faculty, and students and pharmacist role models Socialization will help students with Academic achievement and intellectual identity HBCU conservative-progressive values system Racial identity Academic achievement, racial identity, and intellectual identity work together to improve leadership identity	Equity pedagogy Modify teaching to facilitate the academic achievement of students from diverse racial, cultural, and social-class groups Academic achievement and innovation of African American and Mexican American students increases when cooperative teaching activities and strategies, rather than competitive ones, are used in instruction

^a11, ^b 12, ^c 13, ^d 14

Author Statement

Ashim Malhotra Conceptualization, Methodology, Writing - Original Draft, Writing – Review & Editing

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Jeremy A. Hughes: Conceptualization, Methodology, Writing - Original Draft, Writing – Review & Editing

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Ref.: Ms. No. ajpe9273R2

A Critical Appraisal of Educational Theory to Examine HBCU and Black Students' Professional Identity Formation

American Journal of Pharmaceutical Education

Dear Dr. Hughes:

Thank you for submitting your revised manuscript, "A Critical Appraisal of Educational Theory to Examine HBCU and Black Students' Professional Identity Formation." You have satisfactorily addressed the editor's and reviewers' suggestions and your paper is accepted for publication pending compliance with the stylistic parameters outlined below.

NOTE: This checklist must be completed, signed, and submitted as a part of your final submission. Failure to do so will result in a delay in publishing your manuscript.

In addition to the revisions that you have been asked to make in response to editor and reviewer comments/recommendations, please also make the final changes listed below.

Before You Begin Formatting Your Manuscript:

XX Remove all track changes or other editorial comments. Disable the "track changes" function.

XX Remove line numbers from manuscript (if present).

XX Compile all components of manuscript - including all tables, figures and appendices (which should appear at the end of manuscript if applicable) - into one Microsoft Word document.

Formatting the Manuscript for Early Release (ER):

XX Open your manuscript in Microsoft Word and select all (CTRL+A). Perform all of the actions listed below with all text selected.

- a. Set margins to 1" all the way around.
- b. Change font to Times New Roman 11pt.
- c. Right-click in the document and choose "Paragraph."
 - i. Change to Align Left.
 - ii. Change spacing to Double with 0pt before and 0pt after paragraphs.
 - iii. Select the "Tabs" button on the bottom of the Paragraph window and set the default tab to "0.5." This will be the default any time you begin a new paragraph. (Note: this will not adjust all the tabs in the document. You will need to go through and check them.)
- d. With Select All (CTRL + A) still in place, press SHIFT+CTRL+F9 or CTRL+6 to unlink citations.

XX Include all contact information for:

- a. Corresponding Author (CA) section includes name, university, college or faculty, physical address, city, state, phone number, and email address

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XX Identify the correct section headings for your manuscript type and change as appropriate:

a. Main section headers (INTRODUCTION, METHODS, etc) should be in all caps and bold typeface. Please use italics for any subheadings.

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a. In AJPE, we use only one space after periods. To remove extra spaces:

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b. Remove all extra line spaces in between paragraphs and sections.

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a. Numbers 0-9 should be written out in general. In statistical text, Arabic numeral can be used if appropriate.

b. Arabic numerals should also be used with designators (eg, week 1, cohort 2).

c. Numbers 10 and up should be written as Arabic numerals (unless they occur at the beginning of a sentence, in which case they should be spelled out).

d. A number containing a decimal must be styled as an Arabic number.

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a. Reference numbers cited in the text of a manuscript should be in superscript Arabic numerals placed at the end of the sentence, outside the final period or other punctuation. AJPE does not use superscript citations within sentences.

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d. Do not put parentheses around reference numbers cited in text.

XX Review all references.

a. Double-check accuracy of journal name abbreviations, author names, and journal article or book titles for completeness. Include year, volume, issue, page numbers -- this is absolutely critical to take care of.

b. Make sure that all URLs are still working and provide the most recent access dates for all internet-based citations (eg, if you are submitting your final manuscript in March 2020, the access dates should be within the month of March 2020). The format of the access date should follow this example: "June 1, 2020."

c. For citations with more than 7 authors, list only the first three authors then add a

comma and "et al" after the third author.

d. Italicize and abbreviate all journal names according to the NLM Catalog. For eg, American Journal of Pharmaceutical Education is abbreviated as Am J Pharm Educ. See <https://www.ncbi.nlm.nih.gov/nlmcatalog/journals>

e. Refer to the latest AMA stylebook for all other formatting style.

XX Replace your references for commonly cited documents with the following for consistency with journal formatting:

ACPE Standards 2016:

Accreditation Council for Pharmacy Education. Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree ("Standards 2016"). Published February 2015. <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf>. Accessed Month, Day, Year. (Insert that day's date; the hyperlink will not change).

ACPE Standards 2016 Guidance Document:

Accreditation Council for Pharmacy Education. Guidance for the Accreditation Standards and Key Elements for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree ("Guidance for Standards 2016"). Published February 2015. <https://www.acpe-accredit.org/pdf/GuidanceforStandards2016FINAL.pdf>. Accessed Month, Day, Year (Insert that day's date; the hyperlink will not change).

CAPE Educational Outcomes 2013:

Medina MS, Plaza CM, Stowe CD, et al. Center for the Advancement of Pharmacy Education 2013 educational outcomes. Am J Pharm Educ. 2013;77(8):Article 162.

ACPE Standards 2007 (updated in 2011 to v2.0):

Accreditation Council for Pharmacy Education. Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree ("Standards 2007 v2.0"). Published February 2011. <https://www.acpe-accredit.org/pdf/Finals2007Guidelines2.0.pdf>. Accessed Month Day, Year (Insert that day's date; the hyperlink will not change).

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- e. Tables should be created using Microsoft Word table formatting tools and should be in Times New Roman, 10-point type, with footnotes in 9-point type (do NOT use the tab key to form rows and columns of data as tab information is lost when the document is processed by the production vendor).
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Manuscript Number: Ms. No. ajpe9273R2



Name: Jeremy Hughes

Date: 6/10/23

Future Focused Review Authors' Responses to Reviewer Specific Comments

Reviewer #1:

Thank you for the opportunity to review the revision of this manuscript.

Thank you for your support and your service in reviewing for the Journal.

GENERAL

The revision has clarified some of the issues from the first submission. Clarification that this is a future-review is appreciated as well. Upon reviewing this journal's description of a future review, however, further developing the recommendations portion would lead to a more robust submission for this category.

Thank you for this feedback. We agree that the manuscript summarizes "the current state of knowledge" surrounding HBCU educational frameworks and multi-cultural education (Bands and Arroyo & Gasman) as well as Tinto's Theory. Your suggestion for adding more content to "recommend future directions for research" is appreciated and we agree it strengthens the manuscript. Additional language was added to the Recommendations for Future Research section that was "more explicit and robust compared to ones that may be found in a commentary." This section of the manuscript was significantly expanded.

- For instance, the statement in Line 1-3, page 16: Based on this statement, is the future goal to have these frameworks utilized in all pharmacy programs or utilized in pharmacy programs at HBCUs?
We appreciate this advice. Additional language was provided to help clarify how various program types may be able to apply the educational frameworks.
- What specifically should investigators research to help realize this goal?
We agree with this suggestion and have added additional and explicit recommendations on areas for future research.
- For instance, are there considerations that are needed when applying a framework utilized in undergraduate education to professional education (ie, age and maturity of student, level of personal identity based on prior experiences as an adult)? How would this differ in a 0-6 vs 2+4 vs accelerated pharmacy program? Considering what is currently done in pharmacy education, what would need to be done to incorporate these frameworks into pharmacy?
Thank you for these suggestions. Additional language was added to address these considerations.

It is noted how the authors identified areas within the frameworks that could apply to ACPE Standards. This helps connect the frameworks to pharmacy education.

Thank you. We agree that connecting Tinto's theory, Arroyo & Gasman's framework, and Banks' model to ACPE Standards provides reference points for pharmacy educators to apply content from this future focused review into their practice as academicians and facilitators of learners' PIF.

The authors mention in the abstract " Literature on professional identity formation in pharmacy

education is also reviewed". There are some articles on PIF and pharmacy that have been published. Would consider including more in the review and possibly determining if elements of the frameworks in this submission apply.

We agree that it is important for the reader to have a greater appreciation of PIF in pharmacy education. Additional language and an additional pharmacy specific citation were added to the existing section of the Introduction that describes PIF in pharmacy education. In addition to the new source that explored pharmacy PIF by Welch et al. (2020), the previous version of the manuscript described the 2021 AACP Student Affairs Standing Committee recommendations, and references Janke et al. (2021) and Johnson et al. (2022). The findings of these pharmacy specific PIF publications informed the four basic professional identity attributes discussed in the body of this review.