

The Intersection of Metacognition, Cultural Identity, and Academic Performance Among African American and International Students in Diverse Educational Contexts

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Abstract

This article encapsulates a critical examination of the intersection between metacognition, cultural identity, and academic performance, with a specific focus on African American and international students in a diverse educational setting. Anchored in Bandura's Social Cognitive Theory, this investigation synthesizes findings from two qualitative studies [1,2]. Utilizing semi-structured interviews with a total of 40 participants, comprising 20 African American students and 20 international students at a mid-size university in the United States, this study shows how metacognitive strategies shape the academic experiences of these distinct populations. The application of Bandura's Social Cognitive Theory as a theoretical framework underscored the critical roles of self-efficacy, motivation, and cultural context in influencing students' academic outcomes. The findings showed that while both demographic groups employ metacognitive practices, they encountered unique challenges that were informed by their cultural identities and social dynamics, thereby highlighting the need for tailored educational interventions. The results of this study make a significant contribution to the existing literature by advancing inclusive educational practices and proposing future research directions that address the specific needs of these diverse student populations.

Keywords: Metacognition; Cultural Identity; Academic Performance; African American Students; International Students; Social Cognitive Theory.

Received: 4/30/2025

Accepted: 6/10/2025

Published: 6/20/2025

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1. Introduction

The globalization of higher education has led to an increasingly diverse student population, necessitating a nuanced understanding of how metacognition and cultural identity influence academic performance. As institutions strive to create inclusive learning environments, the role of metacognition—defined as the awareness and regulation of one's cognitive processes—has emerged as a critical area of inquiry [3]. Metacognition encompasses two primary components: metacognitive knowledge, which involves understanding one's cognitive processes, and metacognitive regulation, which refers to the ability to oversee and adjust one's learning strategies [4]. Research indicates that metacognitive skills are essential for self-regulated learning, allowing students to reflect on their learning processes, adapt their approaches, and monitor their academic progress [5, 6].

Among the diverse student population in higher education, African American and international students represent two groups facing distinct academic challenges. African American students frequently encounter systemic barriers rooted in historical and socioeconomic factors that can hinder their educational success [7, 8]. These challenges may include limited access to resources, cultural dissonance, and the impact of stereotypes on academic self-efficacy. Consequently, fostering metacognitive awareness and strategies is vital for enhancing their academic resilience and performance [1].

In contrast, international students often face a distinct set of challenges as they navigate new educational systems, cultural differences, and language barriers [9]. These factors can hinder their ability to employ effective metacognitive strategies, leading to feelings of isolation and anxiety that may negatively impact their academic performance [10]. Understanding how these students adapt their metacognitive practices in response to cultural and academic expectations offers valuable insights into their learning experiences [11].

Grounded in Bandura's Social Cognitive Theory, which emphasizes the reciprocal interplay between personal factors, environmental influences, and behavior, this article critically examines the intersection of metacognition, cultural identity, and academic performance among African American and international students [12,13]. Bandura's framework posits that self-efficacy beliefs significantly influence motivation, learning behaviors, and persistence in the face of challenges, making it a relevant lens through which to analyze the academic experiences of these diverse student populations [5].

This research presents a comparative analysis of findings from two qualitative studies [1,2], which explored how metacognitive strategies impact the academic performance of African American and international students in diverse educational contexts. By synthesizing the findings of these studies, this research aims to illuminate the unique challenges and strengths of each group, highlighting the need for tailored educational interventions that foster metacognitive awareness and cultural identity. Ultimately, this study contributes to the growing body of knowledge on metacognition and underscores the importance of inclusive practices that enhance student success across diverse educational environments.

1.1 Theoretical Framework/Literature Review

Both studies analyzed in this research are grounded in Bandura's Social Cognitive Theory, which posits that self-efficacy beliefs, observational learning, and social interactions have a significant impact on individual learning experiences and outcomes. Bandura's work [12,14] emphasizes the interplay between cognitive, behavioral, and environmental factors, suggesting that individuals acquire behaviors through their environment. The main elements of this theory include observational learning, reciprocal determinism, and the influence of self-efficacy on motivation and persistence in academic settings [12].

Bandura's framework has been validated in educational contexts. Research by Schunk and Zimmerman [5] highlights how self-efficacy beliefs foster motivation and persistence, which are critical components of academic performance. Johnson and Smith [15] further emphasized that enhancing self-efficacy through targeted interventions can improve academic outcomes among diverse student populations. By examining the role of metacognitive strategies in empowering students and facilitating self-regulation, this study uncovered the potential for overcoming barriers to academic success for both African American and international students.

1.2 Metacognition and Academic Performance

Extensive research has established a positive correlation between metacognitive practices and academic performance across various contexts. Pishghadam and Khajavy [16] conducted a systematic review indicating that students with higher metacognitive awareness tend to employ more effective learning strategies, which leads to improved academic outcomes. Similarly, Kim and Kim [17] found that metacognitive strategies significantly impacted the academic performance of international students, underscoring the need for educational interventions that enhance these skills.

John Flavell's Metacognitive Theory [3] provides a foundational understanding of metacognition as the awareness and regulation of one's cognitive processes. Flavell delineates metacognition into two primary components: metacognitive knowledge and metacognitive regulation. Metacognitive knowledge encompasses an individual's understanding of their cognitive processes, while metacognitive regulation involves overseeing and adjusting one's learning strategies based on self-reflection and feedback.

Research indicates that metacognitive awareness is associated with improved academic performance, as it enables students to monitor their understanding and adapt their strategies accordingly [5]. African American students often utilize metacognitive strategies to navigate systemic barriers and enhance their academic resilience [1]. Meanwhile, international students frequently employ metacognitive practices to adapt to new educational contexts, emphasizing goal-setting, self-monitoring, and seeking feedback as essential components of their learning processes [10]. Thus, Flavell's framework serves as a guiding principle for understanding how metacognitive strategies can be cultivated among diverse student populations.

1.3 Cultural Context and Metacognition

Culturally Responsive Pedagogy (CRP) is another critical framework that informed this literature review. Developed by Gloria Ladson-Billings [7], Culturally Relevant Pedagogy (CRP) emphasizes the importance of recognizing and valuing students' cultural backgrounds within the educational setting. This pedagogical

approach is predicated on the belief that culturally relevant teaching practices can enhance student engagement, motivation, and academic success.

Research results show that culturally responsive teaching practices contribute to improved learning outcomes for marginalized student populations [18]. For African American students, CRP can help mitigate the effects of systemic inequalities by affirming their cultural identities and promoting a sense of belonging within the academic environment [7]. Similarly, CRP can support international students by creating inclusive classrooms that recognize the diverse experiences and perspectives they bring to the learning environment [9]. By integrating CRP into educational practices, institutions can foster metacognitive awareness and self-regulation among all students, ultimately enhancing their academic performance.

Cultural factors significantly shape metacognitive practices among students. Research by Chang [19] emphasizes that cultural differences influence students' self-regulation and metacognitive strategies, necessitating tailored approaches to enhance metacognitive awareness. For instance, Wang and Wu [20] argued that understanding cultural nuances is essential for developing effective educational interventions that promote metacognitive practices among diverse student populations.

1.4 Self-Efficacy and Motivation

Bandura's concept of self-efficacy has been extensively studied in relation to academic performance. Research by Zhang and Zheng [21] suggests that students with high self-efficacy are more likely to engage in learning activities, set ambitious goals, and persist in the face of challenges. This relationship is particularly relevant for African American and international students, who may encounter unique barriers in their educational journeys. Han and his colleagues [22] suggested that interventions aimed at enhancing self-efficacy, such as personalized mentoring and academic assistance, can significantly improve the academic performance of these student groups.

1.5 Social Interaction and Collaborative Learning

Social interaction and collaborative learning experiences are essential for academic success among both African American and international students. Li and Kim [23] emphasized that collaborative learning fosters motivation, support, and a sense of belonging, ultimately leading to enhanced academic outcomes. In addition, prior research has emphasized the importance of faculty feedback in shaping students' metacognitive development, demonstrating that timely and constructive feedback enhances students' ability to evaluate their understanding and adapt their learning strategies effectively [1].1

1.6 Challenges Faced by Diverse Student Populations

International and African American students frequently face numerous challenges that can impede their academic success. Okojie [1] noted that international students may struggle to adapt culturally, achieve language proficiency, and meet diverse educational expectations. In contrast, African American students often encounter systemic inequalities and cultural dissonance. Recognizing these challenges is crucial for developing targeted

interventions that promote the academic achievement of both groups.¹

1.7 Empirical Literature on Metacognition and Academic Performance

A growing body of empirical literature supports the relationship between metacognition and academic performance across diverse student populations. Studies have shown that students who possess strong metacognitive skills are better equipped to self-regulate their learning, leading to higher academic achievement [6]. For instance, research by Schunk and Zimmerman [5] suggests that metacognitive awareness is positively correlated with improved self-efficacy and academic motivation, particularly among students facing challenges related to cultural identity.

In the context of African American students, research highlights the importance of developing metacognitive strategies to navigate systemic barriers and enhance resilience [2]. Similarly, international students have been found to benefit from metacognitive practices that facilitate their adaptation to new academic environments [9]. A study by Tchounou and his colleagues [10] highlights the importance of reflecting on one's learning processes and seeking feedback for the academic success of international students.

Despite the existing literature, a gap remains in understanding the comparative metacognitive practices of African American and international students, particularly in relation to the influence of cultural identity on these strategies. This study addressed this gap by providing a comparative analysis that highlights the unique challenges and strengths of each group, thereby contributing to the broader discourse on metacognition in higher education.

2. Methodology

Both studies employed qualitative methodologies and in-depth interviews to gather data from randomly selected participants. These studies involved 20 international students and 20 African American student participants. Thematic analysis in both studies identified recurring themes and patterns, thus facilitating a comprehensive exploration of participants' experiences regarding metacognition and academic performance.

2.1 Rationale for Methodology

The rationale for selecting qualitative methodologies in both studies stemmed from the need to fill existing gaps in the literature regarding metacognition and academic performance within diverse educational contexts. Okojie (2025b) argued that the unique challenges faced by African American students necessitate a qualitative approach to fully understand their experiences and the cultural factors influencing their metacognitive practices. This perspective aligns with Creswell's [23] assertion that qualitative research is crucial for examining complex social issues.

Similarly, the investigation of international students acknowledged the multifaceted nature of cultural adaptation, language proficiency, and educational expectations. By employing qualitative methodologies, the studies aimed to thoroughly explore how these factors influence metacognitive strategies and academic

outcomes. The flexibility afforded by qualitative methods enabled the researcher to tailor the data collection and analysis processes more effectively to fit the participants' contexts and experiences.

2.2 Assumptions

Both studies rest on key assumptions that underpin their research processes. First, the premise is that metacognition has a significant influence on academic performance among the respective student populations. Existing literature supports this premise, indicating that metacognitive awareness and regulation are critical for effective learning [3], Schunk & Zimmerman [5].

Additionally, both studies assumed that cultural factors play a significant role in shaping metacognitive processes. For African American students, systemic inequalities and cultural identity are believed to influence self-efficacy and learning strategies. For international students, cultural differences and language barriers are believed to impact their academic experiences and metacognitive awareness. These assumptions guided the research design and informed the analysis of participant narratives.

2.3 Biases

Recognizing and addressing biases is crucial in qualitative research, and both studies took steps to mitigate potential influences on data interpretation. The researcher acknowledges the potential for cultural biases that may arise from his background as an individual of African descent. The researcher strove to set aside personal opinions and preconceived notions during the research process to maintain objectivity.

Similarly, the international students' study addressed potential biases stemming from the researcher's experiences as an international student, which may influence data interpretation. Efforts were made to represent participant voices accurately, and the researcher actively sought contradictory evidence to uphold a balanced perspective. By acknowledging these biases, the studies aimed to enhance the credibility and trustworthiness of the findings.

2.4 Site Selection

The site selection for both studies was purposeful and strategically chosen to align with the research objectives. The initial research was conducted at BETA University, a four-year institution recognized for its diverse student body and comprehensive diversity and inclusive programs. This choice of university was significant, as it provided an ideal setting to investigate the experiences of African American students within a supportive yet challenging academic environment.

In contrast, the international student study was conducted at Alpha University, a historically Black institution known for its commitment to diversity and inclusion. This site selection facilitated the exploration of the unique challenges faced by international students within a culturally rich and academically rigorous context. By choosing institutions that prioritize diversity, both studies effectively examined the intersection of metacognition and academic performance within their populations.

2.5 Sample Selection

Both studies used purposeful sampling techniques to ensure participants met specific criteria relevant to the research questions. The first study included twenty African American students enrolled in undergraduate or graduate programs with a GPA of 2.5 or higher. Participants were selected through collaboration with college department chairs and the Office of Student Services, ensuring diverse representation across academic disciplines and experiences.

Similarly, the international students study included twenty international students enrolled in undergraduate or graduate programs with a GPA of 2.5 or higher. Participants were recruited through collaboration with department chairs and the Office of International Programs, using a gatekeeper approach to facilitate recruitment. By employing purposeful sampling, both studies aimed to capture the richness of students' experiences actively engaged in their academic journeys.

2.6 Data Collection Procedures

Both studies' data collection methods involved semi-structured, in-depth interviews that enabled participants to elaborate on their experiences and perceptions regarding metacognition and academic performance. Following Institutional Review Board (IRB) protocols, informed consent was obtained from all participants.

Each interview lasted between 60 and 90 minutes in secured locations to maintain confidentiality and comfort. The researcher employed a mix of open-ended questions and clarifying prompts to elicit detailed responses and collect comprehensive narratives. Participants were invited to share their experiences freely, and the researcher employed audio recordings and handwritten notes to document the discussions accurately. This method thoroughly explored participants' perspectives and enriched the qualitative data collected.

2.7 Data Analysis Procedures

Data analysis in both studies involved thematic analysis to identify recurring themes and patterns within the participant narratives. The audio recordings were transcribed into a written format for analysis. Following Creswell's [23] guidelines, the coding procedure categorized the data and systematically identified significant themes. NVivo software facilitated thematic data analysis through stages of preparation, familiarization, coding, and theme development. The findings were interpreted within the framework of Bandura's Social Cognitive Theory, examining how the data support or challenge theoretical propositions concerning metacognition and educational outcomes. Using established thematic analysis procedures, both studies ensured a rigorous and systematic approach to data analysis.

2.8 Description of Participants

The study's African American participant demographics consisted of students, equally representing undergraduate and graduate levels across various academic disciplines. The sample consisted of nine females and eleven males, aged 21 to 56. This diversity was essential for capturing a range of experiences and

perspectives regarding the impact of metacognition on academic performance.

The international students' study included twenty participants: six undergraduate and fourteen graduate students from various cultural backgrounds. The sample featured individuals from diverse racial and ethnic backgrounds, including Africans, Latinas, and Asians. Participants ranged in age from 18 to 41, providing a broad spectrum of experiences that reflect the challenges and successes of international students in a diverse academic environment.

Both studies prioritized participant confidentiality by assigning pseudonyms and removing personal identifiers from the data. This approach protected participants' privacy and fostered trust and encouraged openness during interviews.

2.9 Summary

The synchronized examination of methodology, rationale, assumptions, biases, site selection, sample selection, data collection procedures, data analysis processes, and participant descriptions in both studies highlighted the thoughtful and systematic approaches taken to explore the efficacy of metacognition in enhancing academic performance. By employing qualitative methods and focusing on the unique experiences of African American and international students, these studies provided valuable insights that could inform educational practices and policies to support diverse student populations.

Table 1: Participants' Demographic Information of African American Students.

Name	Age	Gender	Race	Institution	Major	GPA.
ERRA	43	Female	African American	BETA	Urban Higher Education (Ph.D.)	4.0
LEB	41	Male	African American	BETA	Mathematics (Masters)	4.0
TICE	23	Male	African American	BETA	Business Admin. (Undergraduate)	2.62
FAXX	21	Male	African American	BETA	Physic (Undergraduate)	3.6
BIZ	39	Male	African American	BETA	Computer Engineering (Masters)	3.2
ELIN	41	Female	African America	BETA	Urban Higher Education (Ph.D.)	3.8
JIDE	45	Male	African American	BETA	Business Administration (Ph.D.)	4.0
PIRO	28	Male	African American	BETA	Finance (Masters)	3.9
DELOS	38	Male	African American	BETA	Criminal Justice (Undergraduate)	4.0
ZENITH	30	Male	African American	BETA	Clinical Psychology (Undergraduate)	3.2
IDIA	42	Female	African American	BETA	Chemistry (Masters)	4.0
JACK	38	Male	African American	BETA	Environmental Science (Ph.D.)	3.8
ZITA	27	Female	African American	BETA	Biology-Pre-Nursing (Undergraduate)	2.7
HALIMA	30	Female	African American	BETA	Chemistry (Undergraduate)	3.0
JOJO	42	Male	African American	BETA	Computer Engineering (Ph.D.)	4.0
LIJA	21	Female	African American	BETA	Biology (Masters)	4.0
TIARO	21	Female	African American	BETA	Biology (Undergraduate)	3.2
DIKA	56	Female	African American	BETA	Urban Higer Education (Ph.D.)	3.9
SENTA	22	Female	African American	BETA	Civil Engineering (Undergraduate)	3.0

GREGO	36	Male	African American	BETA	Public Health (Masters)	4.0
STAN	33	Male	African American	BETA	Computational & Data Enabled Science & Engineering (Ph.D.)	4.0

Table 2: Participants' Demographic Information of International Students.

Name	Age	Gender	Race	Institution	Major	GPA.
RINA	41	Female	Latina Mexican	Alpha	Accounting Masters	3.5
EDO	23	Male	African Nigerian	Alpha	Computer science Masters	4.4
OSE	18	Female	African Nigerian	Alpha	Criminal Justice Freshman	4.0
OTT	34	Male	African Cameroonian	Alpha	Computational Data/Neurosciences Ph.D	4.0
LAFE	36	Male	African Nigerian	Alpha	Chemistry Ph.D	4.0
ID	35	Male	African Nigerian	Alpha	Engineering Ph.D	3.3
TITI	37	Female	African Nigerian	Alpha	Environmental Science Ph.D	4.0
BOS	34	Female	African Nigerian	Alpha	Chemistry Ph.D	4.0
OLA	34	Male	African Nigerian	Alpha	Chemistry Ph.D	4.0
RUBI	34	Male	Asian Bangladesh	Alpha	Chemistry Ph.D	4.0
SITA	25	Female	Asian Philippine	Alpha	Chemistry Ph.D	4.0
KUM	31	Male	Asian Pakistan	Alpha	Chemistry Ph.D	4.0
TEM	23	Male	Frican Nigerian	Alpha	Engineering Bachelor	3.9
QIN	35	Male	Asian China	Alpha	Chemistry Ph.D	4.0
TAO	34	Male	Asian India	Alpha	Chemistry Ph.D	4.0
PET	23	Male	African Zimbabwe	Alpha	Computer Engineering Jr. Year	3.9
LOR	24	Female	African Ghana	Alpha	Clinical mental Health/Counselling Masters	4.0
MIG	36	Male	Latina Mexico	Alpha	Accounting Bachelor	2.8
SPA	19	Female	Latino Spain	Alpha	Electrical Engineering Bachelor	2.5
HUG	23	Male	Latina Guatemala	Alpha	Electrical Engineering Bachelor	3.6

The demographic overview presented above highlights the participants' diverse backgrounds and academic experiences, underscoring the study's focus on commonalities and differences between metacognition and

academic performance within a multicultural framework.

3. Findings

Research Question 1: How does self-efficacy impact the academic performance of African American and International Students in a Diverse and Inclusive University?

Common Themes:

3.1 Self-Efficacy

Both studies highlighted the crucial role of self-efficacy in influencing academic performance among the respective student populations. Participants in this study emphasized that high self-efficacy beliefs enhance motivation and persistence in overcoming academic challenges among African American students. The research illustrated this point through participant narratives highlighting their determination and resilience. For instance, participant ELIN expressed,

I want to show them that you can still reach your goals, regardless of life's situations. My family motivates me to be a role model and an example for my children.

This illustrates how self-efficacy influences individual performance and connects to broader familial and cultural aspirations.

In the context of international students, self-efficacy also emerged as a powerful driver of academic performance. The study revealed that participants with strong self-efficacy were likely to engage in effective learning strategies and seek support. Participant EDO articulated,

Understanding the potential rewards of my efforts is essential to fueling my motivation. Keeping my eyes on the prize reminds me that the significant payoff from my hard work serves as my driving force.

This connection between self-efficacy and motivation highlighted a shared understanding across both participants of the importance of belief in one's capabilities as a precursor to academic performance.

3.2 Persistence and Adaptability

Persistence emerged as a defining trait among participants in both studies. International students shared narratives of handling academic challenges by seeking help from peers and instructors, demonstrating resilience in the face of adversity. For example, participant SENTA recounted, "I formed study groups with my classmates, and we helped each other understand difficult concepts. This collaboration was key to my success". Meanwhile, African American students expressed a need for adaptability in the face of systemic challenges. Participants noted that adjusting learning strategies and maintaining persistence were critical for overcoming obstacles to success. Participant TIARO remarked, "I had to learn to adapt quickly; if I didn't, I would have fallen behind." This shared emphasis on resilience and adaptability as essential components of metacognitive

strategies highlights the importance of fostering these traits in diverse educational contexts.

3.3 Self-awareness

Self-awareness was identified as a key factor in both studies, with participants emphasizing the importance of understanding their strengths and weaknesses in relation to their academic performance. International students reported that reflecting on their learning strategies improved their academic outcomes as they became skilled at identifying effective study techniques and adjusting their approaches accordingly. Participant EDO stated,

After reflecting on my grades, I realized I needed to change my study habits. I started using flashcards and self-testing, which helped.

Likewise, African American students highlighted their self-awareness in recognizing how their cultural identity influenced their academic experiences. Participant DIKE, while reflecting on her cultural background, says,

Understanding my background helps me handle my studies more effectively, as I know where I excel and where I need assistance.

Such self-awareness enabled participants to enhance their academic performance by leveraging their strengths and addressing their weaknesses, thereby reinforcing the importance of metacognitive awareness in diverse educational settings.

Distinct Theme:

3.4 Cultural Context and Systemic Barriers

While both studies highlighted self-efficacy, they differed in the contextual factors influencing its development. Research on African American students has emphasized the systemic barriers they encounter, including systemic inequalities, socioeconomic barriers, and cultural dissonance. These factors created unique challenges that required targeted interventions within educational frameworks to strengthen self-efficacy.

Conversely, international students' finding focused on cultural adaptation and language proficiency challenges. It illustrated how these factors can affect self-efficacy and motivation. One participant (EDO) noted,

As a newcomer to the United States, I felt anxious about language differences, especially during a group project... This fear caused me to withdraw from group settings.

Thus, while self-efficacy was a common theme, the distinct cultural and systemic factors influencing its expression varied significantly between the two populations.

4. Research Question 2: How does meta-learning impact the academic performance of African American and International Students in a Diverse and Inclusive University?

Common Theme: Resilience and Adaptability

Both studies identified resilience and adaptability as vital elements of meta-learning that positively affected academic performance. The first research highlighted the resilience of African American students, emphasizing their persistence, noting, “Persistence was a critical factor influencing the academic performance of African American students in diverse environments” [2]. The narratives provided by participants showcased their ability to manage and overcome obstacles, exemplifying adaptability in various academic contexts.

Resilience was also a significant theme in the study of international students. One participant (LAFE) reflected,

Resilience builds confidence... recognizing the challenges posed by my background motivated me to pursue my goals.

This emphasis on resilience as a means of adaptability showed a shared understanding across both studies that the ability to handle difficulties was vital for academic performance.

4.1 Distinct Theme: Specific Meta-Learning Strategies

While resilience and adaptability were common themes, the studies diverge in their exploration of specific meta-learning strategies. Initial research found that self-discipline and time management were vital strategies for African American students. Participants emphasized the importance of organizing their study schedules and setting clear academic goals. Participant DIKA’s organized method of managing her time was apparent when she shared;

I primarily manage my time by putting things on my calendar when assignments are due and setting reminders. I might have four or five reminders on my phone to remind me to get started on assignments due in a week or two. I like to submit my assignments on time and make time for studying. I study at night or on weekends whenever I have free time because balancing family, work, and school can be challenging.

In contrast, international students study finding emphasized the role of collaborative learning and multimedia resources in enhancing meta-learning. Participants noted how engaging with peers from diverse backgrounds enriched their learning experiences. “Collaboration with peers fosters a sense of community and enhances my learning,” participant OTT stated. This focus on collaborative engagement highlighted the distinct meta-learning strategies that are particularly relevant to the international student experience.

5. Research Question 3: How does self-regulated learning impact the academic performance of African American and International Students in a Diverse and Inclusive University?

Common Theme: Motivation and Self-Regulation

Both studies highlighted the interconnection between motivation and self-regulated learning, underscoring how these elements influence academic performance. Research finding on African American students identified

motivation as a key factor influencing self-regulation, with participants reflecting on their intrinsic drive to succeed. Participant TICE expressed,

I stay focused on one thing at a time and avoid rushing into things too quickly, as I often get distracted by trying to do too many things at once.

This highlights the importance of self-regulation as a tool for maintaining focus and motivation.

Similarly, the study finding of international students supported this theme, revealing that self-regulation enhances intrinsic motivation. A participant (EDO) remarked,

To stay motivated and focused on long-term projects, I identify the outcomes I want to achieve, as understanding the potential rewards of my efforts is essential to fueling my motivation. Keeping my eyes on the prize reminds me that the significant payoff from my hard work serves as my driving force. This mindset helps me overcome challenges and remain persistent, knowing I am working toward something meaningful. The anticipation of achieving my goals and the satisfaction of knowing I have put in the necessary effort keep me motivated throughout the process.

This shared recognition of the interplay between motivation and self-regulated learning further solidified its importance in both contexts.

5.2 Distinct Theme: Individualized Learning Approaches

While both studies highlighted motivation and self-regulation, they diverge in their application of individualized learning approaches. Research finding on African American students highlighted the significance of personalized academic strategies for this population, thus emphasizing the need for culturally responsive educational practices. The phrase “Culturally responsive teaching practices... in promoting metacognitive awareness among African American students” illustrates the necessity for tailored approaches [2]

In contrast, the international students study finding emphasized the importance of adapting learning approaches based on feedback and cultural context. Participant LOR acknowledged the need for self-reflection and evaluation in enhancing her learning outcomes, stating, “Adjusting learning approaches involves altering strategies based on feedback and performance.” This distinction highlights how individualized strategies can vary based on the cultural and contextual factors that influence each student group.

6. Research Question 4: How does social interaction impact the academic performance of African American and International Students in a Diverse and Inclusive University?

Common Theme: Collaboration and Support Systems

Both studies acknowledged the essential role of social interactions and collaboration in improving academic performance. The research finding showed how collaborative learning enhanced motivation and fostered a sense

of belonging among African American students. Participant SENTA noted, “Collaborative learning promotes motivation, support, and a sense of belonging.” The narratives shared by participants demonstrated how peer support builds academic resilience and encouraged persistent effort.

The international students study finding echoed this sentiment, emphasizing the importance of collaboration in enriching learning experiences. Participant OSE noted,

Since high school, I have collaborated with classmates on projects, dividing tasks according to our strengths and organizing regular check-ins to share progress and address challenges. Establishing explicit communication norms created a supportive environment, teaching me the importance of communication, reflection, and flexibility in teamwork.

This shared theme underscored the significance of social interaction across both populations, reinforcing that collaborative engagement can enhance academic outcomes.

6.1 Social Interaction

Both studies deemed social interactions and collaborative learning experiences crucial for academic performance. International students reported that engaging with peers from diverse backgrounds enriched their learning experiences and enhanced their understanding of different perspectives. For example, participant RUBI noted, “Working with classmates from various cultures opened my eyes to different viewpoints and improved my teamwork skills.” Similarly, African American students emphasized the significance of social support networks in their academic journeys. Many participants described how collaboration with peers and mentorship from faculty members played a vital role in their success, providing motivation and guidance throughout their educational experiences. Participant ERRA highlighted, “Having a mentor who understood my struggles made a difference; they guided me through tough times.”

This theme highlights the importance of fostering social connections within academic contexts, particularly for students from diverse backgrounds.

6.2 Distinct Theme: Cultural Dynamics in Social Interactions

While both studies highlighted collaboration, they differ in how cultural dynamics shape social interactions. The research finding on African American Students emphasized the impact of cultural identity on collaboration, showcasing how shared cultural experiences enhanced motivation and support. FAXX’s said, “Being around friends in my major helps me learn from them,” illustrates how cultural connections foster a supportive learning environment.

In contrast, the international students’ study finding focused on the challenges of social interactions in a diverse environment. Participant EDO expressed the need to manage cultural differences, stating, “I worried that my explanations would be misunderstood because of varying terminology.” This emphasis on cultural dynamics revealed how social interactions can be influenced by the unique experiences of international students,

highlighting the need for cultural sensitivity in collaborative learning contexts.

6.3 Family Influence

The African American study finding strongly emphasized the role of family support and environmental factors in motivating participants to achieve academic success. Participants frequently referenced their families as sources of inspiration, sharing narratives of how their relatives' sacrifices motivated them to pursue higher education. For example, participant SENTA expressed, "My parents worked multiple jobs to give me a chance at a better life; I owe it to them to succeed." In contrast, this familial influence was less emphasized in the study of international students, where participants focused more on individual strategies for overcoming challenges. Participant SPA stated, "I relied on myself to go through this new world; it was about finding my way." This distinction suggests that while both groups may benefit from social support, the specific sources of motivation and encouragement may vary depending on the cultural context.

6.4 Culturally Responsive Teaching

The study of African American students finding underscored the need for culturally responsive teaching practices to create supportive environments that promote metacognitive awareness. Participants wanted educators to incorporate their cultural backgrounds into the curriculum, emphasizing that understanding their unique experiences could enhance engagement and motivation. One participant (ELLIN) stated, "If teachers could relate our lessons to our backgrounds, it would make learning more relevant." In contrast, the study finding of international students highlighted the importance of diverse pedagogical methods but did not explicitly address culturally responsive practices. One international Participant (EDO) remarked, "Different teaching styles help, but I think more emphasis on cultural contexts would help us feel more included." This difference suggests that while both groups may benefit from inclusive educational strategies, the specific approaches and resources required to support their success may vary based on their cultural identities.

Both studies findings provided insights into the familiar and distinct themes influencing academic performance through metacognitive processes. While themes of self-efficacy, resilience, motivation, and social interaction resonated across both populations, the contextual factors shaping these elements varied significantly. The African American Students' research finding emphasized the systemic barriers and cultural identity of African American students, while the international students study finding highlighted the challenges of cultural adaptation and language proficiency. These comparative narratives highlighted the necessity for tailored interventions that addresses the unique needs of each student population, ultimately enhancing academic outcomes in diverse educational environments.

Table 3: Themes and Categories (Illustrate the research questions concerning the corresponding themes and constructs/constraints of the research questions)

Research Questions	Corresponding Themes	Contracts & Constraints
RQ. 1: How does self-efficacy impact the academic performance of African American and International students in a diverse and inclusive university?	1. Self-Efficacy 2. Persistence and Adaptability 3. Self-awareness	Awareness Constructs: Problem identification (Self-awareness, Social awareness, and situation awareness) -dissatisfaction -external triggers. Reflective practices. Exploration of solutions. Decision-making process.
		Adaptation and learning. Awareness Constraints Limited awareness. Lack of communication. Resource restraints.
RQ. 2: How does Meta-learning impact the academic performance of African American and international students in a diverse and inclusive university?	1. Mindset and academic Resilience 2. Specific Meta-Learning Strategies	Time Constructs: Task value. Project time/study environment management. Critical thinking. Effort regulation (rehearsal, elaboration, organization). Clear communication. Time Constraints: Deadline. Time-sensitive tasks. Time availability.
RQ. 3: How does Self-regulated learning impact the academic performance of African American and international students in a diverse and inclusive university?	1. Motivation 2. Self-regulation 3. Individualized learning approaches	Motivation Constructs: Intrinsic goal orientation Extrinsic goal orientation Control of leaning beliefs Motivation Constraints Resource constraints. Inadequate support. Cultural barriers.

RQ. 4: How does social interaction impact the academic performance of i African American and international students in a diverse and inclusive university?	1. Collaboration and Support Systems 2. Social Interaction 3. Cultural Dynamics in Social Interactions. 4. Family Influence 5. Culturally Responsive Teaching.	Social engagement Constructs: Engagement with classmates and instructors (Peer learning). Help seeking (Faculty and staff support). Social-engagement constraints: Time. Social norms and Expectations (Cultural barriers). Organizational culture.
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7. Discussion

7.1 Discussion and Analysis of Findings

Both studies emphasized the vital role of metacognition in shaping academic performance, particularly among students from diverse backgrounds. The findings suggested that enhancing metacognitive awareness through tailored support systems, mentorship, and culturally responsive teaching practices can significantly enrich the academic experiences of both international and African American students. Both groups' emphasis on self-efficacy, persistence, adaptability, and social interaction highlighted their everyday experiences while stressing their challenges.

Understanding the cultural nuances that shape students' academic journeys is essential for developing effective strategies to support their performance. Cultural background significantly influenced cognitive abilities of participants, affecting how they think, learn, and interact with their environment. Various aspects of culture, including values, beliefs, practices, and socialization processes, contribute to the development of cognitive skills [24]. For instance, cultural context often shapes cognitive styles and learning preferences. Participants raised in collectivist cultures may exhibit a holistic thinking style, emphasizing relationships and context. In contrast, those from individualist cultures may adopt a more analytical style, focusing on logic and objectivity [25]. These cognitive styles can significantly impact how participants process information and approach academic tasks. Both studies examined the impact of metacognition on academic performance, focusing on distinct populations: African American students in a diverse university setting and international students at a historically Black college. Both studies emphasized the vital role of metacognitive processes, including self-efficacy, adaptability, persistence, and self-regulation, as key components influencing academic success. Research on African American students has shown that self-efficacy has a significant impact on their academic performance, with themes such as persistence and adaptability being particularly prominent. The findings aligned with Bandura's Social Cognitive Theory, which posits that self-efficacy beliefs influence motivation and persistence in overcoming academic obstacles [14]. The research highlighted the importance of self-awareness and self-discipline as mechanisms through which students handle academic challenges. One participant stated, "Persistence is a critical factor influencing the academic performance of African American students in diverse environments" [2]. This demonstrated how cultural values and familial expectations shape students' motivation

and resilience. Conversely, the study on international students also identified self-efficacy as a key factor while expanding the focus to include resilience and social interaction as essential components of academic performance. The international student population faces unique challenges, such as cultural adaptation and language barriers, which necessitate a broader understanding of metacognitive strategies. The findings suggested that resilience and self-confidence enhanced students' ability to handle these challenges, fostering a proactive approach to learning. Participant Edo noted, "Understanding the potential rewards of my efforts is essential to fueling my motivation." This statement illustrates the interplay between cultural expectations and cognitive processes in shaping academic performance. Both studies underscored the interconnectedness of metacognitive strategies and academic performance, suggesting that self-regulatory practices enhance students' abilities to adapt and thrive in diverse educational environments. However, while the study of African American students emphasized their journeys in overcoming systemic barriers, the international student study highlighted the broader context of cultural influences and the necessity of social support systems.

8. Recommendations Based on the Study Results

Both studies recommended tailored support systems to enhance metacognitive skills among their specific student populations. The African American study proposed that educational institutions adopt culturally responsive teaching practices and mentoring programs that directly address the unique needs of African American students. These strategies would promote the development of self-regulation and self-efficacy, ultimately improving academic performance. The significance of parental expectations and involvement, grounded in cultural values, was highlighted to encourage academic success [26]. The study on international students recommended developing diverse multimedia resources and collaborative opportunities that cater to various learning styles. This includes integrating digital tools that accommodate different cultural contexts and leveraging peer interactions to nurture a supportive academic environment. Such initiatives enhance metacognitive awareness and promote resilience and adaptability among international students. The findings indicated that socialization practices vary across cultures and can be utilized to create effective learning strategies. Both studies emphasized the importance of mentorship and peer support in helping students develop effective learning strategies. In conclusion, while both studies highlighted the need for targeted interventions, the research on African American students emphasized the significance of cultural identity and systemic support. In contrast, the study on international students focused on fostering adaptability and leveraging social networks. Recognizing the cultural influences on cognitive abilities can inform educational strategies that respect and utilize students' diverse backgrounds.

9. Implications for Policy and Practice

The implications of these findings for policy and practice are profound. For African American students, the research emphasized the necessity for educational policies that actively dismantle systemic barriers and establish inclusive learning environments. This involves hiring diverse faculty and implementing curricula that reflect the cultural backgrounds of African American students. By doing so, institutions can cultivate a sense of belonging that enhances self-efficacy and academic performance. One participant stated, "Persistence was a critical factor influencing the academic performance of African American students in diverse environments" [2]. This

highlights the importance of policies that foster supportive environments conducive to academic achievement. In contrast, international student studies emphasize the necessity for institutions to acknowledge and address the unique challenges encountered by this population. Policymakers and practitioners should contemplate establishing orientation policies and programs that offer cultural acclimatization, language assistance, and access to academic resources. Such initiatives would empower international students to engage more effectively with their educational environment, ultimately enhancing retention and graduation rates. The emphasis on social interaction and collaborative learning as vital components of academic performance further highlights the need for policies that promote peer engagement among diverse student populations. Both studies suggested that institutions should invest in faculty training on culturally responsive teaching methods, equipping educators with the necessary skills to support diverse student populations. This is crucial for creating a conducive learning atmosphere where African American and international students feel valued and supported in their academic pursuits. Understanding the cultural values and socialization practices that influence cognitive development can enhance educators' effectiveness and foster an inclusive academic environment.

10. Future Research Directions

While this study provides valuable insights into the metacognitive practices of African American and international students, further research is needed to explore the longitudinal effects of metacognitive instruction on academic outcomes. Longitudinal studies can provide a deeper understanding of how metacognitive skills develop over time and their impact on students' educational trajectories. Additionally, research should investigate the effectiveness of specific interventions designed to enhance metacognitive awareness and self-regulation among diverse student populations. Furthermore, comparative studies involving other marginalized groups can enrich the discourse on metacognition in education, highlighting the intersection of cultural identity and academic performance across various contexts. Understanding these dynamics will be critical for developing inclusive educational practices that cater to the needs of all students.

11. Conclusion

This study underscored the importance of examining the intersection of metacognition, cultural identity, and academic performance among African American and international students. By highlighting the shared and distinct experiences of these groups, the findings underscore the need for culturally responsive educational practices that enhance metacognitive awareness and promote academic success. Future research should further explore these intersections, ensuring that educational policies and interventions address the diverse needs of all students in higher education. These findings show that tailored support systems and institutional policies that prioritize inclusivity and adaptability are essential to enable all students to utilize their metacognitive skills and achieve academic success effectively. The implications for educational practice are clear: institutions should cultivate environments that recognize and address the diverse needs of their student bodies, ultimately fostering resilience, adaptability, and motivation. Future research should continue to explore these dynamics longitudinally, examining how metacognitive strategies evolve and impact academic performance across various educational contexts. Doing so can further enhance our understanding of how best to support diverse student populations in their academic journeys.

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