

The Efficacy of Metacognition in the Academic Performance of International Students in a Diverse and Inclusive University Through the Lens of Bandura Social Cognitive Theory

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ABSTRACT

This qualitative study aimed to explore the role of metacognition in the academic performance of international students at a diverse and inclusive university through the lens of Bandura's social cognitive theory. The study involved in-depth interviews with 20 purposefully sampled international students from various cultural backgrounds enrolled at the university. The interviews concentrated on understanding the students' perceptions and experiences regarding their metacognitive processes and their impact on academic performance. Thematic analysis was performed to identify recurring themes and patterns in the data. The findings revealed that metacognition plays a crucial role in the educational performance of international students. Participants indicated that being aware of their learning strategies, setting goals, monitoring their progress, and adjusting their approaches based on feedback significantly influenced their academic performance. This study offers valuable insights into the significance of metacognition in the academic performance of international students, as backed by Bandura's social cognitive theory, highlighting the necessity for educational interventions that enhance students' metacognitive skills in a diverse and inclusive university environment.

Keywords: Metacognition, Social Cognitive Theory, International Students, Learning Strategies, Academic Performance.

INTRODUCTION

As global higher education becomes increasingly interconnected, it plays a crucial role in shaping students' educational experiences and outcomes worldwide. The Organization for Economic Cooperation and Development (OECD) defines global higher education as a network of post-secondary institutions that facilitate academic pursuits beyond national borders (OECD, 2019). This environment attracts international students from a wide range of cultural and geographical backgrounds, enhancing higher education through cross-cultural exchanges and the exchange of diverse perspectives (Bhandari & Blumenthal, 2020; Beine et al., 2014).

Understanding the unique experiences and challenges faced by international students is essential for educators and policymakers, particularly in developing metacognitive skills—students' awareness and regulation of their learning processes (Choudaha & Chang, 2022). Metacognition comprises two primary components: metacognitive knowledge, which involves understanding one's cognitive processes, and metacognitive regulation, the ability to oversee and adjust learning strategies (Zimmerman, 2020). Research indicates that metacognitive skills are critical for academic success, allowing students to reflect on their learning, adapt strategies,

and monitor their progress (Zhang et al., 2021). Pishghadam and Khajavy (2013), referencing the work of Schraw and Dennison (1994), noted that students' metacognitive awareness used through the planning and monitoring of their learning can enhance their academic performance. This study investigated the implementation of metacognitive skills in academic activities, considering the varying learning abilities of college students. According to Avargil et al. (2018), students' ability to regulate and reflect on their learning enhances metacognitive skills and practices. Awareness of their metacognitive levels can significantly influence learners' academic performance. By cultivating metacognitive skills, students can improve their learning capabilities and greatly succeed in their educational pursuits (Tuononen et al., 2017). Conversely, Romainville (1994) highlighted that learning difficulties can arise when students lack cognitive awareness of their strengths and weaknesses, leading to challenges in managing their learning processes.

International students often encounter challenges such as cultural adaptation, language proficiency, and different educational expectations, which can affect their academic performance (Tchownou et al., 2023). The autonomy afforded in global higher education encourages these students to take on more responsibility for their learning, promoting metacognitive regulation as they plan, monitor, and evaluate their strategies in unfamiliar academic environments (Schunk & Zimmerman, 2018). While exposure to varied pedagogical methods can enhance adaptability and resilience (Mok, 2020), transitioning to a new educational system may also result in uncertainty and anxiety, obstructing effective metacognitive practices (Mazzarol, 2021).

Numerous studies have investigated the relationship between metacognition and academic performance across various countries, showing a positive impact of metacognitive practices on student outcomes. Bandura's Social Cognitive Theory offers a pertinent framework for analyzing how these factors impact international students' academic performance in diverse and inclusive settings (Bandura, 2001).

Despite the importance of metacognition, limited research explicitly examines its impact on the academic performance of international students in various contexts (Brown & Lee, 2020). Findings show that exposure to different teaching methods helps students identify effective learning strategies, ultimately enhancing academic performance (Zhang et al., 2021). This study investigated the efficacies between varied educational experiences, metacognitive awareness, and academic outcomes, thus, contributing to the existing literature on metacognition in higher education.

THEORETICAL FRAMEWORK /LITERATURE REVIEW

This study is based on Bandura's Social Cognitive Theory, which emphasizes learning through observation, self-reflection, and self-efficacy (Bandura, 1986, 1997). The theory suggests that individuals learn behaviors through interactions with their environment and through observational contexts. Key components include observational learning, reciprocal determinism, and the importance of self-efficacy in shaping motivation and persistence in academic settings. Recent research supports Bandura's findings, highlighting the need to model positive behaviors in educational contexts to improve student engagement and performance.

This literature review highlights the intricate relationship between metacognition, self-efficacy, and academic performance among international students. Although numerous studies demonstrate the positive impact of these factors on academic success, additional research is needed to examine their connections in diverse contexts and across different student populations.

This review examines recent research on the impact of metacognition on the academic performance of international students. It is structured using the inverted pyramid approach, transitioning from broad analyses to specific details. Grounded in Bandura's Social Cognitive Theory, which emphasizes self-efficacy, self-regulation, and social interaction in learning, the study explores the effectiveness of metacognitive strategies. The literature indicates that metacognitive practices can significantly enhance international students' adaptation, knowledge acquisition, and personal development in multicultural educational environments.

Self-Efficacy and Academic Performance

Self-efficacy, or the belief in one's ability to succeed, plays a crucial role in shaping academic performance (Zhang & Zheng, 2022). Grounded in Bandura's theory, self-efficacy influences motivation, goal-setting, and perseverance, all of which are vital for academic success (Bandura, 1992). Johnson and Smith (2021) emphasized the importance of self-efficacy in encouraging persistence and motivation. Their call for further research in diverse educational contexts highlights the need to understand how self-efficacy and metacognitive strategies function across different cultural settings.

Research demonstrates that students with higher self-efficacy are more likely to participate in learning activities and set ambitious goals, resulting in improved academic performance (Schunk & Zimmerman, 2020). Interventions designed to support international students can boost self-efficacy through customized mentoring and academic assistance (Han et al., 2019). In contrast, acculturative stress may weaken self-efficacy (Yu & Park, 2017). This review highlights qualitative analyses that reveal the complex relationship between self-efficacy and academic achievement, indicating that self-efficacy fosters effective learning strategies and resilience in overcoming academic challenges.

Meta-Learning and Academic Performance

Meta-learning, or the process of learning how to learn, involves developing knowledge and skills related to individual learning processes. Engaging in meta-learning empowers students to take charge of their education by setting goals and tracking their progress (Dinsmore et al., 2020). Research indicates that students who use meta-learning strategies achieve better academic outcomes (Artino, 2012). Furthermore, cultural factors influence meta-learning techniques, underscoring the necessity to understand these differences for effective educational interventions (Wang & Wu, 2021).

While most studies support the positive connection between meta-learning and academic success, some findings emphasize limitations, highlighting the necessity for continued investigation into the contextual factors that affect meta-learning effectiveness (Dunlosky et al., 2013). Meta-learning allows students to adeptly navigate various learning challenges, thereby improving their academic performance.

Self-Regulated Learning and Academic Performance

Self-regulated learning (SRL) significantly influences the academic performance of international students. SRL encompasses goal-setting, planning, and progress monitoring, all of which are crucial for achieving academic success (Pintrich, 2000). Research consistently demonstrates that students who engage in self-regulatory processes achieve higher academic performance (Schunk & Zimmerman, 2020). However, excessive focus on self-regulation can inadvertently lead to anxiety and stress, emphasizing the importance of a balanced approach (McGuinness & McGuinness, 2018).

Cultural influences are crucial in shaping self-regulated learning strategies among international students. Support systems, including peer mentorship and academic resources, are essential in facilitating SRL (Zimmerman, 2000). While most research supports the positive impact of self-regulated learning on academic outcomes, some studies call for a nuanced understanding of its limitations and the need for individualized strategies.

Social Interaction and Academic Performance

Social interaction is essential to the academic performance of international students. Collaborative learning promotes motivation, support, and a sense of belonging, positively impacting academic performance (Li & Kim, 2018). However, group dynamics can sometimes obstruct collaboration, resulting in conflicts that harm academic outcomes (Jehn & Mannix, 2020). Cultural factors also influence how international students participate in social interactions, making it crucial to understand these dynamics to foster effective learning environments.

METHODOLOGY

This study utilized Bandura's Social Cognitive Theory to examine the impact of metacognition on the academic performance of international students within a diverse and inclusive institutional context. It considered the influence of various factors, including social, cultural, language, and environmental elements, on these students' academic experiences. A qualitative research approach was employed to explore the metacognitive factors potentially affecting academic performance, focusing on the methodology's rationale, underlying assumptions, biases, site selection, sample selection, data collection, analysis procedures, and measures of study trustworthiness.

Rationale for Methodology

The research utilized a qualitative methodology to examine the effectiveness of metacognition in improving academic performance among international students, guided by Bandura's Social Cognitive Theory. This decision was influenced by gaps in the current literature and calls for additional qualitative studies (Creswell, 2014). The qualitative approach allows for a thorough exploration of international students' lived experiences and personal interpretations, capturing the intricacies of metacognition and its academic relevance. Considering the unique challenges faced by international students, such as language barriers and cultural adjustments, qualitative methods were considered crucial for understanding the contextual factors influencing metacognitive processes.

A quantitative approach was ruled out for several reasons, including the complexity of the research topic, which required a nuanced understanding of the interplay between

metacognition and academic performance in diverse cultural contexts (Creswell, 2014). The exploratory nature of the study further supported the qualitative method, facilitating the generation of rich descriptive data and the emergence of themes throughout data collection and analysis (Patton, 2015). Additionally, qualitative methods aligned effectively with the theoretical framework, enabling a thorough examination of the social and cognitive processes that underlie metacognition.

Assumptions

Key assumptions guided the research process, suggesting that metacognition significantly influences the academic performance of international students. This assumption is backed by existing literature that highlights metacognition's role in enhancing learning outcomes (Flavell, 1979; Schraw & Moshman, 1995). Furthermore, the study proposed that Bandura's Social Cognitive Theory offers a suitable framework for understanding how metacognitive processes affect academic outcomes, emphasizing self-regulation, self-efficacy, and observational learning (Bandura, 1986). Lastly, it was considered that cultural factors play a crucial role in shaping the metacognitive processes of international students, given the cultural variations in educational practices and expectations (Chang, 1999; Phan, 2010).

Biases

The researcher, an international student of African descent, acknowledged potential cultural biases that could influence data interpretation. Efforts were made to set aside personal opinions and maintain objectivity throughout the research to reduce these biases. Additionally, sampling bias was addressed with clear inclusion and exclusion criteria, ensuring a diverse participant selection while recognizing the limitations in generalizability. Confirmation bias was also considered, with the researcher aiming to keep an open mindset and actively seeking contradictory evidence during the research process.

Site Selection

The research was conducted at Alpha University, a four-year Historically Black institution recognized for its diverse international student body and comprehensive diversity and inclusion programs. This university was chosen for its academic excellence and supportive environment, making it an ideal setting for exploring the experiences of international students. The university accommodates approximately 300 international students across various undergraduate and graduate programs.

Sample Selection

A purposeful sampling strategy was employed to select twenty participants who met specific criteria: international students enrolled in either undergraduate or graduate programs and maintaining a GPA of 2.5 or higher. Participants were identified through collaboration with college department chairs and the office of international programs, using an international student as a gatekeeper to facilitate recruitment. The sample included students from diverse cultural backgrounds, ensuring a comprehensive examination of how culture influences metacognitive processes and academic performance.

Data Collection Procedures

Data were collected through semi-structured, in-depth interviews that allowed participants to elaborate on their experiences and perspectives regarding metacognition and academic

performance. Informed consent was obtained before each interview, following Institutional Review Board (IRB) protocols. The interviews lasted between 60 to 90 minutes and were conducted in secure locations. The researcher employed a combination of open-ended questions and clarifying prompts to encourage detailed responses and also utilized handwritten notes and audio recordings to ensure the accurate documentation of participants' narratives.

Data Analysis Procedures

After collecting data, audio recordings were transcribed into a written format for analysis. The coding procedure, as outlined by Creswell, was used to categorize the data, systematically identifying significant themes and patterns. The analysis was conducted using NVivo software, which facilitated thematic data analysis through stages of preparation, familiarization, coding, and theme development. The findings were interpreted in the context of Bandura's Social Cognitive Theory, examining how the data supported or challenged theoretical propositions regarding metacognition and academic performance.

Description of Participants

The study included twenty participants from Alpha University, consisting of six undergraduate students and fourteen graduate students. They represented a range of academic disciplines and stages in their educational journeys. All participants, except for two first-year students, had an undergraduate degree from the same institution. The sample featured individuals from diverse racial and ethnic backgrounds, specifically Africans, Latinas, and Asians. To protect participants' identities, pseudonyms were assigned in accordance with informed consent regulations. The participants included nine females and eleven males, aged 18 to 41 years. Regarding living arrangements, eight participants lived on campus, while the remaining twelve resided off campus near the university.

Table 1: Participants Demographic Information.

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	Alpha	Chemistry	4.0

			Bangladesh		Ph.D	
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

This demographic overview offers insights into the participants' varied backgrounds and academic experiences, emphasizing the study's emphasis on the intersection of metacognition and academic performance in a multicultural context.

FINDINGS

This study examined the impact of metacognition on the academic performance of international students at a diverse and inclusive university, guided by Albert Bandura's Social Cognitive Theory. The research was structured around the following questions:

- RQ1: How does self-efficacy impact the academic performance of international students in a diverse and inclusive university?
- RQ2: How does meta-learning impact the academic performance of international students in a diverse and inclusive university?
- RQ3: How does self-regulated learning impact the academic performance of international students in a diverse and inclusive university?
- RQ4: How does social interaction impact the academic performance of international students in a diverse and inclusive university?

The study identified four key themes corresponding to each research question. For Research Question 1, persistence, adaptability, self-awareness, and self-discipline emerged as important factors. In response to Research Question 2, resilience, self-confidence, prioritization, and effective time management were emphasized. Research Question 3 revealed themes of motivation, self-regulation, learning strategies, and adapting learning methods. Finally, Research Question 4 provided insights into the value of multimedia resources and the significance of intergroup collaboration, as participants acknowledged the effectiveness of metacognitive strategies in enhancing their academic performance.

Research Question 1: Impact of Self-Efficacy on Academic Performance

The findings indicated that self-efficacy plays a crucial role in influencing the academic performance of international students—high self-efficacy levels were found to impact motivation, goal-setting, and persistence in overcoming challenges. Participants who expressed strong self-efficacy beliefs were more likely to engage in effective learning strategies, seek resources and support, and actively participate in their academic endeavors. A supportive and inclusive university environment that acknowledges the unique cultural backgrounds and needs of international students further enhanced their self-efficacy and academic performance. Promoting self-efficacy through tailored support systems, mentorship, and inclusive learning experiences were essential for optimizing participants' academic performance and overall well-being.

Theme 1: Persistence:

The study findings emphasized that persistence is a critical factor influencing the academic performance of international students in diverse environments. Participants described persistence as a sustained effort to overcome obstacles, which proved essential for managing academic challenges. Personal narratives illustrated how persistence contributed to their educational achievements. For instance, HUG demonstrated persistence by actively seeking assistance from peers and instructors when faced with difficulties in challenging subjects. He mentions, "I know that I have to seek assistance from an instructor or a peer just to help me get through that specific moment." Similarly, MIG shared how he managed the complexities of adapting to a new educational system by persisting through language barriers. He notes, "The first year I came here from high school was the worst for me because of the different language," highlighting his difficulties. However, his ability to persist over time was evident as he states, "By my senior year, I started learning how to speak, write, and understand English," showcasing his determination to overcome challenges. The collective experiences of participants highlighted that self-efficacy beliefs fostered persistence and confidence in their academic capabilities.

Theme 2: Adaptability:

Findings also indicated that adaptability significantly influenced academic performance. Participants defined adaptability as the ability to adjust strategies and behaviors in response to new situations. Personal experiences highlighted the importance of adaptability in managing academic challenges, with participants like MIG demonstrating resilience while transitioning to a different educational system. Effective adaptability enabled the participants to navigate changes in learning environments, teaching styles, and cultural expectations, ultimately enhancing their academic achievements. The theme revealed that adaptable students can modify their strategies, behaviors, and approaches to meet the demands of new and unfamiliar academic situations. They can effectively manage changes in the learning environment, such as new academic tasks, different teaching styles, and shifting expectations. Through adaptability, they learn from their experiences, make necessary adjustments, and progress toward their educational goals.

EDO said,

My high school experience significantly shaped my growth and adaptation, as I found social interactions and group work to be challenging. As a newcomer to the

United States, I felt anxious about language differences, especially during a group project in which I had to explain a book. I worried that my explanations would be misunderstood because of varying terminology, like 'parlor,' which confused me. This fear caused me to withdraw from group settings, making me reserved and hesitant to speak in class. Overall, I struggled with self-consciousness and found communication and socializing difficult.

Theme 3: Self-Awareness:

Self-awareness emerged as a vital theme, influencing individual behavior, motivation, and academic achievement. Participants noted how self-awareness helped regulate their thoughts, emotions, and actions affecting their educational outcomes. For instance, MIG demonstrated clear self-awareness regarding his strengths and weaknesses, stating, "I have a good memory; I can remember things since I was probably three or four years old," which shows his recognition of his cognitive abilities. His self-discipline was evident in his structured study habits, as he highlighted the importance of reviewing material multiple times to ensure comprehension: "I repeat those important points multiple times, so when the test comes, I know the material easily." Meanwhile, LOR emphasized daily self-reflection to improve task prioritization. This understanding allowed participants to boost their academic performance by adapting based on their strengths and weaknesses.

Theme 4: Self-Discipline:

Self-discipline is recognized as a vital component in reaching long-term academic goals. Participants pointed out that self-discipline aided in maintaining focus, overcoming challenges, and participating in productive academic behaviors. For instance, OSE expressed the importance of critical thinking in her learning process. She stated,

Critical thinking is essential to my learning process because it allows me to explore subjects I may not be familiar with. When I encounter new topics, I approach them with a critical mindset, questioning assumptions and striving to understand underlying principles. This analytical approach enables me to broaden my knowledge and gain a comprehensive understanding of various subjects. In essence, critical thinking is at the heart of my learning journey.

Rina emphasized the importance of perseverance in achieving her academic goals. The connection between self-awareness and self-discipline was clear, as participants acknowledged the need for self-discipline and engaged in self-regulatory behaviors to reach their objectives. Lafe stated, "When I set clear goals for each study session, I find it easier to stay focused and accomplish what I need to do." This alignment of self-awareness and self-discipline created a powerful synergy that empowered participants to effectively navigate their academic journeys while continually striving for excellence.

Research Question 2: Impact of Meta-Learning on Academic Performance

The study revealed that meta-learning, or "learning to learn," significantly impacted the academic performance of international students. Participants exhibited strong meta-learning skills through effective goal-setting, planning, and self-monitoring strategies, which facilitated their academic success. Meta-learning empowered students to adapt to new learning

environments and navigate cultural differences, thus, improving their resilience and time management.

Theme 1: Resilience:

Participants highlighted resilience as a key psychological factor that influenced their ability to overcome challenges and achieve high academic performance. Resilience and self-efficacy enabled participants to bounce back from setbacks and maintain positive emotions. Personal narratives demonstrated how resilience shaped their problem-solving strategies and adaptation to academic challenges. Participants like PET and LAFE emphasized that resilience and confidence were essential for overcoming educational difficulties. "Resilience builds confidence," TEM reiterated, recognizing his project's success fueled by perseverance despite setbacks. Similarly, LOR emphasized: "Believing I deserve good things gives me self-confidence." These insights reinforced the perspective of persistent effort aligned with a confidence framework rooted in educational outcomes.

Theme 2: Self-Confidence:

Self-confidence emerged as a crucial element of resilience, strengthening participants' beliefs in their abilities. Participants noted that self-confidence improved their willingness to take risks in their learning experiences, resulting in greater engagement in academic activities. This reflection on previous successes nurtured a growth mindset, allowing participants to navigate academic challenges effectively.

Theme 3: Prioritization:

Prioritization was recognized as essential for managing tasks and enhancing productivity. Participants highlighted the significance of self-efficacy and self-regulatory processes in shaping their ability to prioritize and effectively use their time. Strategies included scheduling dedicated time blocks for various tasks, allowing for gradual progress and efficient management of responsibilities. Participants generally reasoned that prioritization is closely connected to self-efficacy beliefs, as individuals with strong self-efficacy are more likely to prioritize tasks effectively, set clear goals, and utilize resources in accordance with their objectives. RINA said,

When managing multiple deadlines, I prioritize simpler tasks to complete them quickly, allowing me to dedicate more time and energy to the more challenging assignments. For instance, during a busy period with several overlapping due dates, I address the simpler tasks before focusing on the difficult ones to maximize my efficiency. If I cannot meet a deadline for a challenging task, I finish everything else to the best of my ability, ensuring that I submit most of my work on time and maintain my overall performance. This prioritization strategy helps me achieve the best outcomes while minimizing the impact of any incomplete work.

Theme 4: Time Management:

Effective time management emerged as a core element of task management. Participants employed self-regulation techniques, such as goal setting and self-monitoring, to optimize their time use. They emphasized the importance of flexibility in their time management strategies, acknowledging that adaptability is essential for maintaining productivity in changing

circumstances. This dynamic approach highlighted the value of consistent self-monitoring and a growth mindset in their educational progress. According to EDO,

I strive for a balanced approach to managing my tasks by strategically allocating specific time blocks for each one instead of focusing solely on completing them sequentially. For example, when I have three tasks to accomplish in a day, I schedule dedicated hours for each, allowing me to work incrementally on all of them. This method enables me to make progress and typically complete all tasks, helping me to effectively manage multiple responsibilities without feeling overwhelmed.

Research Question 3: Impact of Self-Regulated Learning on Academic Performance

The findings indicated that self-regulated learning, enhanced by social interaction, is essential for the academic performance of international students. Self-regulated learning involves setting goals, tracking progress, and adapting strategies, allowing students to cultivate effective study habits and manage their time efficiently.

Theme 1: Motivation:

Motivation was recognized as a key factor influencing academic achievement. Participants highlighted that self-efficacy beliefs and outcome expectations shaped their engagement in learning activities. The interplay between motivation and self-regulated behaviors was clear, with participants stating that self-regulation enhances their intrinsic motivation and ability to overcome challenges. Outcome expectations, which represent the anticipated consequences of actions, were also recognized as influential to the participants' motivations. Positive outcome expectations enhanced motivation, while negative expectations diminished it. OSE addressed the positive outcomes associated with internal and external motivations, primarily driven by the fear of failure and the desire to meet the high expectations set by family and cultural background. She posits,

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.

Theme 2: Self-Regulated Learning:

Self-regulation emerged as a fundamental aspect of academic experiences. Participants described self-regulation as the management of thoughts, emotions, and behaviors to achieve educational goals. Various strategies for self-regulation were employed, including goal-setting, monitoring progress, and adjusting feedback-based learning methods.

Theme 3: Learning Strategies:

Learning strategies were highlighted as essential for acquiring new knowledge and adapting learning approaches. Participants shared specific strategies that improved their academic

performance, demonstrating how self-efficacy beliefs influenced the selection of practical learning methods.

Theme 4: Adjusting Learning Approach:

Adjusting learning approaches requires altering strategies based on feedback and performance. Participants acknowledged the importance of self-reflection and evaluation in enabling adjustments to enhance learning outcomes.

Research Question 4: Impact of Social Interaction on Academic Performance

Participants noted that social interaction and collaboration had a positive impact on their academic performance. They emphasized the significance of multimedia resources and intergroup engagement in fostering a supportive learning environment that improved understanding, retention, and active learning.

Theme 1: Value of Multimedia Resources:

The findings emphasized the importance of multimedia resources in promoting metacognitive learning. Participants acknowledged the effectiveness of various multimedia tools, including videos and digital textbooks, in improving their academic experiences, especially in overcoming language barriers.

Theme 2: Collaboration through Group Engagement:

Collaboration and intergroup engagement were essential for cultivating a sense of community and improving academic performance. Participants noted that collaborating with peers from diverse backgrounds enriched their learning experiences and fostered cultural understanding.

Summary of Findings

All twenty participants recognized resilience, adaptability, motivation, self-discipline, learning strategies, and self-regulated learning as key factors affecting their academic performance. Positive social interactions, enabled through multimedia, collaboration, and intergroup engagement, were also emphasized as essential elements of successful learning experiences that foster high academic performance. The study highlights the complex interplay of these factors and their combined influence on the academic journeys of international students in a diverse and inclusive university environment.

Table 2: Themes and Categories (Illustrate the research questions in relation to 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 international students in a diverse and inclusive university?	1. Persistence 2. Adaptability 3. Self-awareness 4. Self-discipline	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 international students in a diverse and inclusive university?	1. Resilience 2. Self-confidence 3. Prioritization 4. Time management	Time Constraints: 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 international students in a diverse and inclusive university?	1. Motivation 2. Self-regulation 3. Learning strategies 4. Adjusting learning approach	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 international students in a diverse and inclusive university?	1. Value of Multimedia resources 2. Collaboration and Intergroup engagement	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.

DISCUSSION

Discussion and Analysis of Findings

This section synthesizes and examines the results and principal themes identified in the study regarding the research questions, their alignment with the literature review, and the established theoretical framework. The analysis scrutinized and clarified eight key themes that emerged from interviews conducted with participants. The structure of this discussion follows the order of the research questions, with each segment addressing relevant inquiries accompanied by analytical evaluations and scholarly discussions. The findings highlight persistence and adaptability, self-awareness and self-discipline, resilience and self-confidence, prioritization and time management, motivation and self-regulation, and the importance of

multimedia resources as crucial factors influencing international students' academic performance.

The findings highlight the importance of persistence and adaptability as essential elements for overcoming challenges and achieving academic success. Participants stressed that self-efficacy beliefs were crucial in developing these traits, enabling them to handle setbacks and difficulties. This aligns with Bandura's (2001) Social Cognitive Theory, which suggests that individuals with high self-efficacy are more likely to persevere in the face of adversity. The results support previous research by Chen and Zimmerman (2021), which indicated that self-regulated learning, including persistence, positively influences academic performance among international students. Furthermore, Lee and Kuo (2022) emphasize the role of metacognitive strategies in improving educational outcomes, reinforcing the need for self-regulation as a vital component of effective learning.

The findings illustrate that self-awareness and self-discipline are crucial for academic achievement. Participants demonstrated that recognizing their strengths and weaknesses contributed to their self-efficacy, enabling them to tackle academic challenges with confidence. This observation supports the work of Zajacova et al. (2017), which found that self-discipline significantly influences academic success by enhancing self-efficacy. The interplay between self-awareness and self-discipline fosters a cycle of continuous self-regulation, a concept echoed in the research by Zimmerman (2022), which identified self-efficacy as a mediator in the relationship between self-awareness and academic performance.

Resilience has emerged as a crucial psychological factor in managing academic challenges, with participants linking it to optimism and effective problem-solving. This finding aligns with Yu and Li (2017), who reported that resilient students are better prepared to cope with the difficulties of adapting to new environments. Furthermore, the positive correlation between self-confidence and academic performance reinforces the findings from Zheng et al. (2020), suggesting that self-confident individuals are more likely to engage in proactive learning behaviors and persevere in overcoming obstacles. This supports Bandura's assertion that resilience and self-confidence are essential for achieving positive educational outcomes.

The study identified motivation as a significant driver of academic performance, influenced by self-efficacy, outcome expectations, and goal-setting. Participants noted that strong self-efficacy beliefs resulted in greater motivation, which in turn facilitated engagement in learning activities. These findings align with Bandura's (2001) framework, emphasizing the role of motivation in learning and achievement. Research by Liem et al. (2008) further supports this idea, indicating that high intrinsic motivation correlates with improved academic outcomes among international students. The fear of failure emerged as a powerful motivator, driving participants to seek support and resources, reflecting findings from previous studies that highlight the strong influence of intrinsic and extrinsic motivations on student performance.

Participants emphasized the significance of effective prioritization and time management in reaching their academic goals. This theme aligns with the research by Smith and Lee (2023), which illustrates how self-efficacy beliefs and self-regulatory processes affect students' ability to prioritize tasks effectively. Participants promoted strategic scheduling and incremental progress, reflecting Bandura's theory that highlights the importance of self-efficacy in

successful time management. Further studies by Chen and Yan (2016) support this, showing that effective prioritization positively impacts academic performance, thus reinforcing the idea that self-efficacy is closely linked to task management skills.

The findings illustrate that multimedia resources significantly enhance students' learning experiences. Participants expressed appreciation for various resources, including digital textbooks, videos, and recorded lectures, which facilitated flexible engagement with course content. This aligns with Mayer's (2019) research, which found that multimedia tools can improve learning outcomes when effectively designed. Liu and Zhang (2022) further support this by indicating that intrinsic motivation enhances the perceived value of multimedia resources, leading to improved academic performance. However, challenges associated with multimedia use, such as cognitive overload, have also been documented (Torres & Mendez, 2023), suggesting that although multimedia can enhance engagement, it may also hinder metacognitive processes if not well managed.

In conclusion, the research findings affirm the critical roles of persistence, adaptability, self-awareness, self-discipline, resilience, motivation, prioritization, and multimedia resources in shaping the academic performance of international students. These findings align with established theories, particularly Bandura's Social Cognitive Theory, which emphasizes the significance of self-efficacy and self-regulation in promoting academic success. By understanding and addressing these factors, higher education institutions can better support international students in their academic journeys, ultimately enhancing their educational outcomes and experiences. Future research should continue to examine these relationships and consider how various interventions can strengthen these vital attributes among international students.

Recommendations Based on Study Results

Building on the findings, future research should explore the specific challenges faced by international students in varied educational environments. Studies need to examine the intersection of race and technology in course design to tackle disparities in technology access among different international student groups. Creating digital resources that cater to the unique needs of these populations will enhance their academic experiences.

Educators and institutions should offer a variety of multimedia resources to accommodate diverse learning preferences. This includes digital textbooks, recorded lectures, and interactive materials. Furthermore, encouraging peer collaboration and engagement will enhance the learning environment and foster resilience and adaptability among international students.

Implications for Policy and Practice

The study offers vital insights for institutional, state, national, and international policymakers. To embrace diverse learning styles and guarantee equitable access to technology, policymakers should incorporate multimedia resources into curricula. Furthermore, funding initiatives aimed at supporting resources for international students, especially those from underrepresented communities, should be considered as a matter of policy and practice. At the institutional level, educators should acknowledge the varying needs of international students and adjust educational practices accordingly. This involves training faculty in culturally

responsive teaching methods and encouraging peer interaction to create a supportive learning environment.

CONCLUSION

This research emphasizes the crucial role of metacognition in influencing the academic performance of international students. Key factors identified include persistence, adaptability, self-awareness, self-discipline, resilience, self-confidence, prioritization, and effective time management. The study highlights the significance of social interactions and multimedia resources in improving learning outcomes.

The insights gained from this research enhanced the understanding of metacognitive strategies in academic settings and established a foundation for creating effective interventions that support international students in their educational journeys. Further research is encouraged to examine these factors longitudinally, ensuring that educational policies and practices continue to adapt in response to the needs of international students.

The findings of this study validate the theoretical framework and emphasized the significance of fostering inclusive and supportive environments that encourage collaboration among students and instructors. By incorporating creative resources and promoting peer engagement, educational institutions can greatly improve the academic experiences of international students. This research adds to the growing body of knowledge on metacognitive practices, highlighting their essential role in influencing academic performance and nurturing resilience, adaptability, and motivation among diverse student populations.

References

- Abid, M., Muhammad, A., Aaqib, S., & Farhat, S. (2019). The effect of self-efficacy on academic performance at a higher level of learning: A case study of Punjab University Lahore. *Journal of Educational Sciences and Research*, 6(1), 33–47.
- Artino, A. R. (2012). Academic self-regulation: A predictor of educational achievement and satisfaction in a multicultural environment. *Journal of Advanced Academics*, 23(3), 250–269.
- Baker, L., & Dunbar, K. (2020). Individual differences in metacognitive skill: Exploring variability in self-regulated learning. *Educational Psychology Review*, 32(3), 421–446.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall.
- Bandura, A. (1992). *Self-efficacy: The exercise of control*. W. H. Freeman and Company.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W. H. Freeman and Company.
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
- Bhandari, R., & Blumenthal, P. (2020). *Global higher education: A landscape analysis*. Institute of International Education.
- Beine, M., Noël, R., & Ragot, L. (2014). Determinants of the international mobility of students. *Economics of Education Review*, 41, 40–54.
- Brown, L., & Wilson, M. (2019). Teachers' perspectives on fostering meta-learning skills for academic success: A qualitative study. *Journal of Educational Research*, 28(2), 65–82.

- Chang, M. (1999). Cultural influences on self-regulated learning: A comparison of Chinese and American students. *Journal of Educational Psychology*, 91(2), 338–344.
- Chen, G., & Wang, X. (2023). The transferability of metacognitive skills from multimedia learning to real-world tasks: A longitudinal study. *Educational Psychology**, 43(2), 189–205.
- Chen, J., & Ushioda, E. (2018). Language learning motivation in East Asian and European contexts: Convergent, divergent, and convergent-divergent patterns of multivariate relationships. *System*, 74, 13–26.
- Chen, J., & Zimmerman, B. J. (2021). Self-regulated learning and academic performance: A meta-analysis. *Educational Psychology Review*, 33(3), 553–584.
- Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2020). A framework for metacognition in academic settings: A review of the literature. *Educational Psychology Review*, 32(4), 1037–1065.
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2013). Improving students' learning with effective learning techniques: Promising directions from cognitive and educational psychology. *Psychological Science in the Public Interest*, 14(1), 4–58.
- Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, 34(10), 906–911.
- Galloway, N., Numajiri, T., & Rees, N. (2020). The 'internationalization' or 'Englishisation' of higher education in East Asia. *Higher Education*, 80(3), 395–414.
- Gijbels, D., Raemdonck, I., Verweken, D., & Vanthournout, G. (2011). Understanding students' learning processes in a multicultural university: A self-regulated learning perspective. *Higher Education*, 62(6), 677–693.
- Han, J., Park, Y. S., & Lee, J. E. (2019). Self-efficacy and social support as mediators between acculturative stress and academic performance in international students. *Journal of International Students*, 9(1), 1–21.
- Jansen, E. P., & van de Grift, W. J. (2018). First-year university students' academic success: The importance of academic adjustment. *European Journal of Psychology of Education*, 33, 749–767.
- Johnson, R., & Smith, K. (2021). Exploring the role of self-efficacy in academic success: A qualitative research review. *Qualitative Inquiry*, 25(2), 145–165.
- Kim, H. J., & Kim, S. H. (2021). The influence of metacognitive strategies on academic performance among international students. *International Journal of Educational Research*, 110, 101–110.
- Kramarski, B., & Michalsky, T. (2021). Metacognition and self-regulated learning in the context of international students: A systematic review. *Educational Psychology Review*, 33(2), 413–439.
- Li, Y., & Kim, H. J. (2018). The role of social interaction in the academic success of international students. *International Journal of Intercultural Relations*, 66, 29–38.
- Mayer, R. E. (2019). Multimedia learning. Cambridge University Press.
- Mazzarol, T. (2021). Internationalization of higher education: The implications for student mobility and academic performance. *Journal of Studies in International Education*, 25(2), 123–139.
- McGuinness, C., & McGuinness, M. (2018). Self-regulation: The key to learning success. *Educational Psychology*, 38(8), 883–895.
- Mok, K. H. (2020). A global perspective on higher education: The role of internationalization in promoting student engagement. *Journal of Studies in International Education*, 24(1), 3–6.

Patton, M. Q. (2015). *Qualitative research & evaluation methods* (4th ed.). SAGE Publications.

Pishghadam, R., & Khajavy, G. H. (2013). The role of metacognitive awareness in academic performance: A systematic review. *Educational Psychology*, 33(1), 1–21.

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 451–502). Academic Press.

Romainville, M. (1994). Cognitive awareness, metacognition, and student learning: A review of the literature. *Educational Psychology Review*, 6(4), 319–344.

Schunk, D. H., & Zimmerman, B. J. (2020). *Motivation and self-regulated learning: Theory, research, and applications*. Routledge.

Schunk, D. H., & Zimmerman, B. J. (2022). *Motivation and self-regulated learning: Theory, research, and applications*. Routledge.

Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460–475.

Tuononen, T., Pärssinen, M., & Niemi, H. (2017). Metacognition and learning: A review of the literature. *Educational Psychology Review*, 29(2), 301–316.

Wang, Y., & Wu, H. (2021). The role of meta-learning in academic performance: A study of university students. *Educational Technology & Society*, 24(2), 145–159.

Yu, K., & Park, S. (2017). The relationship between self-efficacy and academic performance of international students: The mediating role of acculturative stress. *International Journal of Intercultural Relations*, 60, 1–11.

Zajacova, A., Lynch, S. M., & Espenshade, J. (2017). Self-discipline and academic achievement: A review. *Sociology of Education*, 90(2), 145–162.

Zhang, Y., & Zheng, J. (2020). Metacognitive strategies and academic performance: A study of international students. *Educational Studies*, 46(4), 455–471.

Zhang, Y., & Zheng, J. (2021). The role of metacognitive strategies in the academic performance of international students: A systematic review. *Educational Psychology*, 41(1), 1–18.

Zhou, M., Wang, Y., & Liu, H. (2023). The impact of adaptability on academic performance and well-being of international students in the United States. *Journal of Studies in International Education*, 27(3), 210–225.

Zepke, N., & Leach, L. (2020). Student engagement and metacognition: A qualitative study of student experiences. *Studies in Higher Education*, 45(4), 696–709.

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Academic Press.

Zimmerman, B. J., & Schunk, D. H. (2011). Self-regulated learning and performance: An introduction and overview. In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self-regulation of learning and performance* (pp. 1-12). Routledge.