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GENDER AND EXPERIENCE AS INFLUENCERS OF REFLECTIVE THINKING IN ACADEMIC ADMINISTRATION: A COMPARATIVE STUDY

Dr. Mahek Arshad[1]; Dr. Munazza Mahmood[2]

[1]Post Doc Fellow, International Islamic University, Islamabad
[2]Assistant Professor, International Islamic University, Islamabad

[1]mehakrshd@gmail.com; [2]munazza.mahmood@iiu.edu.pk

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ABSTRACT

Reflective thinking, a cognitive process wherein individuals analyze their own experiences to gain deeper understanding and improve future performance, is a key skill for academic administrators. This study explores the impact of gender and experience on reflective thinking among academic administrators in Islamabad's higher education institutions. Reflective thinking, crucial for effective leadership and adaptive management, varies significantly among individuals due to personal and professional characteristics. The quantitative research engaged Heads of Departments and Deans, utilizing a meticulously designed questionnaire to evaluate various reflective thinking indicators such as open-mindedness, self-awareness, and critical thinking. This study explores the reflective thinking abilities of academic administrators in higher education institutions, focusing on gender and experience as potential influencing factors. The findings reveal no significant difference in reflective thinking between male and female administrators. Similarly, the study found no consistent trend in reflective thinking across different experience levels, although administrators with over 20 years of experience had the highest average scores (mean score: 4.04). The study also delves into specific indicators of reflective thinking, showing high engagement across all indicators, with problem-solving scoring the highest (mean score: 4.36). Metacognition, however, had the lowest mean score (3.81) and the highest variability (standard deviation: 1.06), indicating potential gaps in self-awareness and self-regulation. In terms of open-mindedness, scores were generally high, particularly in being open to feedback, though some anxiety was noted (mean score: 3.50). Self-awareness and critical thinking were well-developed, though identifying personal strengths and areas for improvement was weaker (mean score: 2.64). Curiosity and continuous learning reflected a strong desire to seek new information and apply it professionally, with particularly high scores in continuous learning. The study's practical implications include the development of structured reflective practice programs, metacognitive training workshops, mentorship and coaching programs, peer learning groups, and robust feedback mechanisms. Continuous professional development opportunities tailored to reflective practice needs are also recommended. Implementing these suggestions can enhance reflective thinking abilities among academic administrators, leading to more effective leadership and management within higher education institutions.

Keywords: gender, experience, reflective thinking, academic administration.

INTRODUCTION

Reflective thinking is a key element of effective administration and management, especially in the field of academic management. The concept, which stems from the work of theorists such as Schön (1983) and Mezirow (1990), refers to the process of introspection and critical analysis of one's experiences, decisions, and actions to promote continuous learning and improvement. In the context of higher education, reflective thinking enables academic managers and administrators to better cope with the complexity of their roles and improve

decision-making, strategic planning, and problem-solving skills.

Academic administrators play a key role in shaping the educational landscape, influencing the quality of education and the reputation of institutions. Their decisions have far-reaching consequences, affecting not only the operations of the institution, but also the academic and personal lives of students and faculty. As higher education institutions face increasingly dynamic and multifaceted challenges, the ability of academic managers to engage in reflective thinking becomes increasingly important. This study aims to delve into the nuances of how gender and experience influence reflective thinking among these key players in higher education.

The Importance of Reflective Thinking

Reflective thinking enables managers to critically evaluate their past actions, understand their outcomes, and apply these insights to future challenges. Schön's concepts of "reflection in action" and "reflection on action" emphasize the dynamic nature of this process, allowing leaders to adapt and respond effectively in real time and learn from past experiences (Schön, 1983). Mezirow's transformative learning theory further emphasizes the importance of critical reflection in promoting personal and professional growth (Mezirow, 1990). By engaging in reflective practices, academic administrators can gain a deeper understanding of their decision-making processes, thereby improving leadership and management practices.

Gender and Reflective Thinking

Research shows that male and female leaders tend to display different styles and preferences in decision-making and reflection (Eagly & Carli, 2007). For example, women often adopt a more collaborative and participatory approach, which can shape their reflective practices (Rosener, 1990). Exploring these gender differences in academic administration is critical because leadership style has a profound impact on organizational culture and effectiveness. Understanding how gender influences reflective thinking can help tailor professional development programs to better support the different needs of male and female administrators.

Experience and Reflective Thinking

Experience is another important factor that shapes the depth and breadth of reflective thinking. Experienced managers bring a wealth of knowledge and insights, which can greatly enrich their reflective process. Kolb's experiential learning theory suggests that individuals learn and develop through a cyclical process of experience, reflection, thinking, and action (Kolb, 1984). This iterative process enhances managers' ability to learn from past actions and apply them to new challenges. However, the relationship between experience and reflective thinking is complex and can be influenced by a variety of individual and organizational factors, such as the emphasis placed on reflection within an institution and the opportunities provided for reflective practice.

Significance of the Study

Despite the recognition of the importance of reflective thinking, gaps remain in understanding how personal characteristics such as gender and experience impact this critical competency for academic managers. This study aims to address this gap by examining the impact of these factors on reflective thinking in higher education settings. By focusing on gender and experience, this study aims to provide insights that can inform the development of more effective leadership strategies to foster a culture of continuous improvement and adaptive leadership within academic institutions. This study aims to gain a deeper understanding of the factors that influence reflective thinking among academic managers and ultimately to enhance leadership effectiveness in higher education.

Objectives of the study

1. To examine the impact of gender on reflective thinking among academic administrators
2. To examine the influence of experience on reflective thinking in academic administration
3. To examine the engagement and experiences of academic administrators in reflective thinking within their professional roles at higher education institutions.

Research Questions

1. How does gender affect the engagement in reflective thinking among academic administrators in higher education institutions?
2. How does experience influence the extent of reflective thinking among academic administrators at higher education institutions?
3. To what extent do academic administrators engage in reflective thinking within their roles at higher education institutions?

Hypotheses

1. There is no significant difference in the reflective thinking practices between male and female academic administrators.
2. There is no significance difference between Experience and reflective thinking practices among academic administrators.

Rational of the Study

Reflective thinking has been identified as a crucial component of effective leadership, facilitating more informed and thoughtful decision-making processes (Schön, 1983). However, research into how reflective thinking is practiced and influenced by personal factors such as gender and experience, especially within the unique context of academic administration, remains limited. Gender dynamics in leadership and have been extensively studied, revealing differences in leadership styles and decision-making processes (Eagly & Carli, 2007). However, less is understood about how these dynamics translate into reflective practices. Men and women may experience and interpret their administrative roles differently, influencing their reflective thinking patterns. Understanding these differences can enhance leadership training and development programs, tailoring them to meet diverse needs.

Experience in leadership roles accumulates knowledge and skills that significantly shape administrative capabilities (Avolio, 2005). Experienced academic administrators may possess more refined or different reflective practices than less experienced academic administrators. This aspect of reflective thinking is critical for developing effective leadership development trajectories and succession planning for academic institutions. The interplay between gender and experience may produce unique patterns in the reflective thinking. For example, how do experienced female managers reflect differently than male managers or less experienced female managers? This area has not been fully explored in academic administration research.

Regardless of the renowned importance of reflective thinking, few studies have explored the specific effects of gender and experience on academic managers' reflective practices. This study aims to fill this gap by comparing how these factors influence reflective thinking in male and female academic managers with different levels of experience. Understanding these effects can inform the development of targeted professional development programs and support systems to enhance reflective capacity in different groups of managers.

Literature Review

Reflective Academic Administration

A reflective academic administrator exhibits high self-awareness and an understanding of others, analyzing how each member can contribute to the organization's culture and effectiveness. Such administrators and leaders channel individual traits to enhance operations and develop effective solutions for arising challenges, thereby fostering a productive environment (Daudelin, 1996). Reflective administration involves critical thinking, problem-solving skills, and metacognitive awareness, essential for generating creative ideas and high-level thinking. Experience alone does not suffice; it must be paired with deep, past-oriented reflection that aids in learning from experiences and guiding future actions (Osterman, 1990).

John Dewey's Influence

John Dewey significantly shaped the concept of reflection in leadership learning, viewing it primarily as a problem-solving method. He believed that action and thought should ideally be inseparable, involving several key steps: identifying a problem, observing conditions, developing and thoughtfully refining a proposed solution, and conducting experimental tests. Dewey regarded reflection as a conscious and deliberate process initiated by doubt, mental challenges, or uncertainty. He viewed it as a methodical process of investigation and clarification aimed at resolving these uncertainties and difficulties, thereby finding suitable solutions to problems.

Reflective thinking, as defined by John Dewey in "How We Think" (1933), is a critical process involving the analysis of past and present experiences to adapt to changing circumstances effectively. This analytical process includes self-inquiry, self-assessment, and the construction of meaning, allowing individuals to progress and connect various experiences and concepts (Özdemir, 2018; Rani, 2022). Dewey emphasized essential traits for effective reflective thinking: open-mindedness, full engagement, and responsibility, which entail active listening, deep involvement with concepts, and accountability for one's actions (Kotzee, 2018). He also identified five stages of reflective thinking: generating solutions, recognizing complexities, gathering information, expanding ideas, and testing hypotheses (Priest, 2021).

Reflective Thinking in Educational Leadership

Ultimately, reflective thinking aims to enhance problem-solving and decision-making skills, requiring educators to be flexible, self-efficacious, and socially responsible (Colton & Sparks-Langer, 1993). These qualities enable educators to view challenges from various perspectives and contribute positively to their communities. Schön (1987) conceptualizes reflection as integral to action and experience, delineating it into two types: reflection in action and reflection on action. Reflection in action involves conscious thinking and adaptation during the activity, allowing practitioners to immediately assess and modify their actions. Reflection on action occurs post-activity, enabling practitioners to evaluate the success of their actions and make judgments about their effectiveness. Schön's (1987) theory emphasizes that reflection connects experience with theoretical insights, portraying it as both a retrospective and an experiential process that defines the 'reflective practitioner.'

The Role of Deep Thinking

Reflection is not merely about actions taken but also involves deep thinking and understanding, which are crucial for applying past experiences to future behavior and making well-analyzed, intentional decisions. Historical and contemporary research underscores that while experience forms the learning foundation, reflection is vital for actual learning to occur, emphasizing its necessity in educational improvement (Biggs, 2001; Campoy, 2000). Reflective practices enhance professional development, bridge the gap between theory and practice, and facilitate the adaptation to changes through personal and cognitive growth.

Practical Implications of Reflective Practices

Furthermore, reflection allows academic administrators to manage and adapt to challenges innovatively and effectively, transforming their approach to favor desired outcomes (Pellicier, 2008). By continuously reflecting on their knowledge and assumptions, academicians not only advance their own development but also cultivate a leadership style that promotes inquiry and reality-based decisions (Densten & Gray, 2001). Ultimately, reflective practices are transformative, propelling individuals towards continual learning and responsiveness to change, thus enriching their thought processes and actions. This makes reflective academic administrators distinguished in their roles, leveraging reflection as a key tool (Rogers, 2001).

Impact on Critical Thinking and Self-Understanding

Reflective thinking extends beyond internal contemplation to influence critical thinking and self-understanding, which in turn enhances performance in organizational and professional contexts. It involves a continual awareness of one's own thoughts and the perspectives of others to make informed decisions. Reflective leaders view learning as a lifelong endeavor, balancing directive actions with open inquiries and leveraging team intelligence for significant decisions. They step back from routine to contemplate and adapt to the increasingly complex business environment, integrating reflection before action to gain diverse insights (Potter, 2015).

Embedding Reflective Practices

Reflective practice involves analyzing how personal beliefs and experiences influence organizational outcomes, fostering the intellectual discipline necessary for effective leadership and management. It translates learning from experience into practical application, aiming to institutionalize reflection as a regular, structured practice that enhances understanding and action. By embedding reflective moments strategically in their activities, leaders can ensure continuous learning and improvement, thus maximizing the impact of their knowledge and experience in their professional practice (Göker & Bozkus, 2017).

Indicators of reflective thinking

1. Open-mindedness

Open-mindedness is crucial for reflective thinking as it involves receptiveness to new ideas and perspectives. Research indicates that open-minded individuals are more likely to engage in deeper reflective practices because they are not constrained by their biases or preconceived notions (King & Kitchener, 1994). An open mind facilitates the exploration of alternative solutions and acceptance of feedback, which is essential for personal and professional growth (Henderson & Dweck, 1990).

2. Self-awareness

Self-awareness in reflective thinking is related to an individual's ability to understand their own thoughts, emotions, and behaviors and how these influence their interactions and decision-making processes. Research shows that self-awareness enhances reflective thinking by enabling individuals to critically evaluate their own behaviors and motivations, thereby improving self-regulatory and interpersonal skills (Silvia & O'Brien, 2004).

3. Critical Thinking

Critical thinking is a fundamental component of reflective thinking and involves the analysis, synthesis, and evaluation of information. It helps individuals question assumptions, identify biases, and evaluate the validity of arguments or solutions (Paul & Elder, 2006). Effective critical thinkers are better able to solve complex problems and make reasoned decisions, which contributes to a more thorough and reflective learning process (Ennis, 1996).

4. Curiosity

Curiosity drives people's desire to learn and explore, and is an important aspect of reflective thinking. It inspires people to actively respond to new challenges and constantly question the status quo, which is essential for cognitive and emotional growth. Kashdan and Fincham (2004) believe that curiosity enhances the scope and depth of reflective thinking by motivating individuals to seek out and reflect on new experiences and knowledge.

5. Metacognition

Metacognition contains thinking about one's own thought processes, including planning, monitoring, and evaluating one's understanding and performance. Flavell (1979) introduced the concept, which has since been associated with improving learning outcomes and problem-solving skills. Metacognitive skills enable individuals to adjust strategies based on reflective evaluation, thereby improving learning and decision-making effectiveness (Schraw, 1998).

6. Decision-making

Decision making is an indicator of reflective thinking and involves choosing the best course of action among various options. Reflective decision making ensures that choices are not impulsive but are the result of careful consideration of consequences and impacts (Beach & Connolly, 2005). Other aspects of reflective thinking, such as critical thinking and metacognition, can enhance this process.

7. Problem-solving

Problem solving in reflective thinking is finding solutions to complex or ambiguous problems through systematic analysis and creative thinking. Jonathan (2000) pointed out that effective problem solving requires cognitive strategies and domain-specific knowledge and is facilitated by reflective practice, which allows solutions to be revisited and improved based on ongoing feedback and learning.

8. Continuous Learning

Continuous learning is the ongoing development of skills and knowledge, fueled by an ongoing commitment to self-improvement and adaptation. Reflective thinkers view learning as a never-ending journey that includes reassessing one's abilities and setting new learning goals. Merriam and Bierema (2013) discuss how continuous learning through reflective practices can lead to transformative educational and professional experiences.

Reflective thinking is a multidimensional construct that includes a variety of cognitive and affective processes. Each indicator—openness, self-awareness, critical thinking, curiosity, metacognition, decision-making, problem-solving, and continuous learning—plays a key role in improving an individual's ability to effectively engage with the world around them. Understanding and cultivating these indicators can lead to profound personal growth and professional effectiveness.

Research Methodology

Present study adopted a quantitative approach to assess reflective thinking among academic administrators, specifically department chairs and deans at the University of Islamabad. The rationale for this research design was the need for systematic and objective measurement of reflective thinking and its various indicators such as openness, self-awareness, and critical thinking. Quantitative methods allow for objective measurement of reflective thinking among a large number of academic administrators. By using standardized instruments such as Likert scale surveys, researchers can quantify levels of reflective thinking and make comparisons between different groups (e.g., by gender or experience). Quantitative methods enable the application of statistical techniques to test hypotheses and determine the significance of research findings. This is essential to determine whether differences in reflective thinking are statistically significant, thereby providing strong evidence to support or refute the research hypotheses. This is particularly important for making broader inferences about the reflective thinking practices of academic administrators in higher education.

Population and Sample

The total number of individuals identified who met these criteria was 408. This number was obtained from a comprehensive list of universities in Islamabad, both public and private institutions, on the official website of the Higher Education Commission. The list was cross-referenced with university websites and official administrative directories to ensure accuracy and completeness of the population data. This process ensured that all relevant managers were included, providing a solid foundation for the study. This study employed a non-probability purposive sampling technique. Purposive sampling, also known as judgment sampling, involves selecting participants based on specific characteristics and research objectives. In this case, the focus was on academic managers who have significant decision-making responsibilities and whose roles inherently involve reflective thinking.

The sampling procedure involved several steps to ensure that appropriate participants were selected. The researchers compiled a comprehensive list of universities in Islamabad, including both public and private universities. This list was used to identify a potential pool of academic administrators. The researchers reviewed the administrative directories and official websites of these universities to verify the candidates who currently held the positions of department chairs and deans. This step ensured that only those who were currently in office were considered for inclusion in the study. The researchers conducted screening to ensure diversity in universities and disciplines. The researchers then sent formal invitations to the selected participants via email with detailed information about the study procedures and expectations.

The final sample size was designed to balance representativeness and feasibility. Although the total population identified was 408 individuals, the actual sample included individuals who agreed to participate and met the inclusion criteria. Efforts were made to ensure that the sample was diverse in terms of gender, years of experience, and type of institution (public vs. private). This diversity is critical for examining research questions related to gender and experience in reflective thinking. Focusing on these key decision-makers through a purposive sampling approach, the study aimed to gain insights into the reflective thinking practices of academic managers in Islamabad. This approach provides a powerful framework for exploring the complex interplay between gender, experience and reflective thinking in higher education administration.

Rationale for Purposive Sampling

The selection of purposive sampling was based on the following considerations:

1. Key decision-makers: Department chairs and deans are at the forefront of academic and administrative decision-making at the university. Their roles require a high degree of reflective thinking to manage departmental functions, develop academic programs, and solve institutional challenges.
2. Expertise and experience: These managers typically have extensive experience and expertise in their fields, making them ideal candidates to explore the impact of experience on reflective thinking. Their insights and practices are valuable in understanding how to incorporate reflective thinking into higher-level management functions.

3. Impact on policy and practice: As key influencers of university policy and practice, department chairs and deans play a vital role in shaping the academic and administrative landscape. Their reflective practices can have a significant impact on the overall effectiveness and adaptability of their institutions.
4. Accessibility and willingness to participate: Given their critical role, these administrators are more likely to understand the importance of the research and be willing to participate. Their professional commitment to improving educational outcomes aligns with research goals, increasing the likelihood of obtaining rich and relevant data.

Research Instrument

Designed for academic administrators in higher education institutions, the Reflective Thinking for Academic Administrators is the culmination of extensive research and development work by researchers. The development of the instrument involved collecting and synthesizing insights from a wide range of scholarly articles, empirical studies, and expert opinions in the field of education. In addition, feedback from experienced academic administrators played a vital role in refining the items and ensuring their relevance and applicability to real-world settings.

The instrument contains 33 items spread across eight thoughtfully defined subscales, each targeting a specific aspect of reflective thinking that is critical to academic administrators. "Open-mindedness" assesses the ability to consider different viewpoints and be receptive to new ideas, fostering intellectual flexibility, "self-awareness" measures awareness of one's own biases and limitations, promoting effective self-reflection and personal growth, "critical thinking" assesses the ability to critically analyze information, question assumptions, and make sound decisions, and "curiosity" focuses on the drive to seek new knowledge and experience, which is essential for continuous learning and institutional innovation. The key components of the curriculum are: "Metacognition" emphasizes understanding and regulating one's cognitive processes, which is critical for personal and professional development, "Decision Making" assesses the process of making balanced decisions that reflect emotional and logical reasoning, "Problem Solving" measures the ability to effectively solve problems and implement solutions in complex educational environments and "Continuous Learning" assesses commitment to continuous development, which is critical to adapting to the changing needs of educational leadership.

Each subscale is designed to collectively provide a nuanced view of an administrator's reflective capacities, thereby enabling targeted interventions and fostering a reflective culture within educational institutions. The tool is intended not only as a diagnostic instrument but also as a developmental aid that enhances reflective thinking, thereby improving the overall effectiveness of academic administrators.

Table 1

Reliability of the Reflective thinking of Academic Administrators Instrument (N=130)

Scale	Subscales	No. of items	Cronbach's Alpha
Reflective thinking of academic administrators		33	.92
	Open-mindedness	5	.77
	Self-awareness	4	.74
	Critical thinking	4	.70
	Curiosity	4	.83
	Meta-cognition	4	.70
	Decision making	4	.70
	Problem solving	4	.75
	Continuous learning	4	.84

The table above shows the overall reliability of the reflective thinking of academic administrator's scale. Cronbach's Alpha reliability was .92 which indicates the high level of internal consistency. There were total 33 items. The subscales were open-mindedness, self-awareness, critical thinking, curiosity, meta-cognition, decision making, problem solving and continuous learning. The reliability of the sub scales was found to be .77, .74, .70, .83, .70,.70, .75, and .84 respectively.

Data Collection and Analysis

Data collection involved distributing a structured questionnaire via Google Forms, which was designed to capture various dimensions of reflective thinking. After ensuring the content validity of the questionnaire through expert reviews in educational administration and methodology, it was sent to the official email addresses of these administrators, sourced from the universities' official websites. 379 administrators received the survey and total 130 responses were received. Data analysis for this study involved a comprehensive approach of descriptive and inferential statistical techniques to accurately capture and explain the reflective thinking practices of academic managers. The analysis aims to provide a detailed understanding of changes in reflective thinking based on gender, experience and specific roles within administrative hierarchies.

Descriptive Statistics

Descriptive statistics are used to summarize and describe the main characteristics of the collected data. This included calculating the mean and standard deviation of various reflective thinking indicators. Descriptive statistics are essential in providing a clear and concise overview of the data, allowing the researcher to understand central trends and variability in the data set.

1. Average/Mean: Calculate the average score for each reflective thinking indicator to determine the average level of participants' reflective thinking engagement. This provides a basic understanding of how reflective thinking manifests itself in different aspects such as openness, self-awareness, critical thinking, curiosity, metacognition, decision-making, problem solving and continuous learning.
2. Standard deviation: Calculate the standard deviation to evaluate the variability of the response. This helps to understand the consistency or dispersion of managers' reflective thinking practices. The higher the standard deviation, the greater the variability, indicating that some managers engage in reflective thinking significantly more or less than others.

Inferential Statistics

Inferential statistics are used to draw conclusions from sample data and make inferences about the broader population of academic managers. This involves using t-tests and analysis of variation (ANOVA) to identify significant differences and trends.

1. T-test: Independent t-tests were conducted to compare average reflective thinking scores between different groups (e.g., male and female managers). The t-test is a robust statistical method used to determine whether there is a significant difference between two sets of means. In this study, it helps to assess whether gender has a significant impact on reflective thinking practices.
2. ANOVA (Analysis of Variance): ANOVA is used to compare the average reflective thinking scores of multiple groups defined by different levels of experience. Unlike the t-test, which compares two groups, ANOVA can handle comparisons between three or more groups. This makes it ideal for examining differences in reflective thinking among administrators with different years of experience (e.g., less than 5 years, 5-10 years, 10-20 years, and 20+ years). Variance analysis provides insights into whether experience significantly affects reflective thinking and whether specific trends exist at different levels of experience.

Rationale for Choosing These Methods

The selection of descriptive and inferential statistical techniques was based on the following considerations:

1. Nature of data: The reflective thinking data collected involved continuous variables that are well suited for analysis via mean, standard deviation, t-test, and ANOVA. These techniques are highly reliable and suitable for examining central tendencies and variations within a data set.
2. Comparative analysis: The study aimed to compare reflective thinking practices across subgroups (e.g., gender, experience level). T-tests and ANOVA are standard methods for such comparative analysis, allowing researchers to identify significant differences and trends in the data.
3. Interpretation and insights: The use of descriptive and inferential statistics provides a comprehensive framework for analysis. Descriptive statistics provide a snapshot of

overall engagement in reflective thinking, while inferential statistics allow researchers to draw broader conclusions and make inferences about the population. This combination ensures a thorough and nuanced understanding of the data.

4. Applicability to educational research: These statistical methods are widely used and accepted in educational research for analyzing survey data. They provide a reliable way to assess the impact of variables such as gender and experience on reflective thinking practices, consistent with the study objectives and research questions (Jones, 2016).

Ethical Considerations

1. Clear communication: Participants of the study were provided with a detailed information sheet outlining the purpose, research objectives, methods used, and the nature of their participation. This information is communicated via email.
2. Voluntary participation: Participation in the study is entirely voluntary. Participants were informed that they could withdraw from the study at any time without any consequences or need to provide a reason.
3. Anonymity: To protect participants' identities, all data collected were anonymized. Personal identifiers were removed, and participants were assigned unique codes. This ensured that individual responses could not be traced back to specific participants.
4. Restricted Access: Access to the data was restricted to the primary researchers involved in the study.
5. Data Use: Participants were informed about how their data would be used. It was made clear that the data would be used solely for the purposes of this research and would not be shared for any other purposes.

Results

Table 2

Gender Based Comparison of Reflective Thinking of Academic Administrators (N=130)

Variable	Groups (Gender)	N	Mean	SD	df	t value	Sig	Cohen's d
Reflective Thinking	Male	98	3.89	.358	128	1.087	0.852	0.221
	Female	32	3.81	.475				

P<0.05P<0.01*

The table 2 above presents the results of an independent samples t-test comparing the mean scores of reflective thinking between male and female participants. The sample consisted of 98 male and 32 female participants. The mean score for reflective thinking among males was 3.897 (SD = 0.358), while the mean score for females was 3.811 (SD = 0.476).

The t-test for equality of means yielded a t-value of 1.087 with 128 degrees of freedom (df). The significance value (p-value) was 0.852, indicating that there is no statistically significant difference in the reflective thinking scores between males and females. The effect size, represented by Cohen's d, was 0.221, suggesting a small effect size according to conventional benchmarks.

These results suggest that there is no significant difference in reflective thinking between male and female participants. The small effect size further implies that gender does not have a substantial impact on the level of reflective thinking in this sample. Therefore, it can be inferred that both male and female academic administrators exhibit similar levels of reflective thinking abilities.

Table 3

Experience Based Comparison of Reflective Thinking of Academic Administrators (N=130)

Variable	Groups (Experience)	N	Mean	SD	F value	Sig
Reflective Thinking	1-5 years	22	3.79	.521	2.172	0.076
	6-10 years	32	3.88	.303		
	11-15 years	29	3.76	.359		
	16-20 years	23	3.92	.329		
	Above 20 years	24	4.04	.404		

P<0.05P<0.01*

The table 3 presents the results of an analysis comparing the mean scores of reflective thinking across different years of experience groups. The sample is divided into five experience groups: 1-5 years, 6-10 years, 11-15 years, 16-20 years, and above 20 years. The mean score for reflective thinking for participants with 1-5 years of experience was 3.791 (SD = 0.521). For those with 6-10 years of experience, the mean score was 3.882 (SD = 0.303). Participants with 11-15 years of experience had a mean score of 3.760 (SD = 0.359). Those with 16-20 years of experience had a mean score of 3.921 (SD = 0.330). Participants with more than 20 years of experience had the highest mean score of 4.044 (SD = 0.404). The F-value for the analysis was 2.172, with a significance level (p-value) of 0.076.

The results indicate that there is a variation in reflective thinking scores across different experience groups. However, the F-value of 2.172 with a p-value of 0.076 suggests that these differences are not statistically significant at the conventional alpha level of 0.05. This implies that the differences in reflective thinking among the different experience groups are not large enough to conclude that experience significantly impacts reflective thinking abilities in this sample. Consequently, while there appears to be a trend of higher reflective thinking scores with increased years of experience, this trend is not statistically significant based on the current data.

Table 4

Indicators of Reflective thinking of Academic Administrators (N=130)

S. No	Indicators	Mean	SD
1.	Open-mindedness	3.99	0.28
2.	Self-awareness	4.22	0.53
3.	Critical thinking	3.96	0.13
4.	Curiosity	3.97	0.20
5.	Metacognition	3.81	1.06
6.	Decision-making	3.84	0.22
7.	Problem-solving	4.36	0.51
8.	Continuous learning	4.10	0.15
	Total	3.88	0.92

The table 4 above summarize the indicators of reflective thinking among academic administrators.

1. Open-mindedness: The mean score is 3.99 with a standard deviation (SD) of 0.28. This indicates a relatively high level of open-mindedness among the academic administrators with small variation in responses.
2. Self-awareness: This is the highest average score among the indicators at 4.22 with an SD of 0.53, suggesting that self-awareness is strongly prevalent but with a moderate spread in scores.
3. Critical thinking: The mean score is 3.96 with the smallest SD of 0.13, indicating a high level of critical thinking that is very consistent across respondents.
4. Curiosity: The mean score is 3.97 with an SD of 0.20, which shows a high level of curiosity with little variability among the administrators.

5. Metacognition: The mean score here is the lowest among all indicators at 3.81, with the highest SD of 1.06. This suggests that while metacognition is present, there is a significant variance in how it is exhibited or perceived among the administrators.
6. Decision-making: The score is 3.84 with an SD of 0.22, indicating good decision-making ability but slightly more variance compared to other areas like critical thinking or curiosity.
7. Problem-solving: This has the highest mean score at 4.36 with an SD of 0.51, indicating very strong problem-solving skills among the academic administrators with a moderate level of variation.
8. Continuous learning: The mean score is 4.10 with a low SD of 0.15, showing a strong and consistent commitment to continuous learning.

The total mean score across all indicators is 3.88 with an SD of 0.92, reflecting a generally high level of reflective thinking capabilities among the administrators with some variability across the different areas of reflective thinking.

Table 5
Open-mindedness among Academic Administrators (N=130)

Q. No	Open-mindedness	Mean	SD
1.	I am open to different perspectives and ideas given by my colleagues	4.05	0.90
2.	I consider alternative viewpoints and willing to revise my opinions based on new information	4.12	0.86
3.	I feel very anxious about feedback given to me by my colleagues, it is as though they are evaluating and judging me as a person.	3.50	1.10
4.	I think feedback by my staff is important as it will help me understand them better.	4.15	0.87
5.	Feedback is important as this would give me an indicator of the areas of my strengths and weaknesses.	4.26	0.87

Table 5 above shows one of the reflective trait 'open-mindedness' among academic administrators in higher education institutions. The mean scores ranges from 3.50 (minimum) to 4.26 (maximum). Responses indicate that academic administrators generally feel confident in being open to new ideas and perspectives. The lower mean score (3.50) on Q3 suggests potential variability or specific areas where open-mindedness might be less pronounced.

Table 6
Self-awareness among Academic Administrators (N=130)

Q. No	Self-awareness	Mean	SD
6.	I have a strong sense of self-awareness.	4.10	0.71
7.	I recognize my own thoughts, emotions, and behaviors, and able to analyze how these factors influence my decisions and actions.	4.02	0.76
8.	I always ask probing questions to myself about my experiences, assumptions and beliefs.	3.86	0.75
9.	I take into consideration my past performance and integrate it with what I am doing	4.11	0.70

Table 6 above describes one of the reflective trait 'self-awareness' among academic administrators in higher education institutions. The mean scores ranges from 3.86 (minimum) to 4.11 (maximum). Academic administrators rate themselves highly on self-awareness. The scores are consistently above average, reflecting a strong self-perception of understanding their own feelings and biases.

Table 7
Critical thinking among Academic Administrators (N=130)

Q. No	Critical thinking	Mean	SD
10.	It is difficult for me to identify my personal strengths and areas for improvement.	2.64	1.12

11.	I seek to understand the underlying reasons behind my thoughts and actions.	3.84	0.62
12.	I always think that what and how I did in a specific situation is an important indicator of my effectiveness	3.95	0.67
13.	I think of what I have done so that I can improve on it further	4.16	0.61

Table 7 above describes one of the reflective trait 'critical thinking' among academic administrators in higher education institutions. The mean scores ranges from 2.64 (minimum) to 4.16 (maximum). This shows significant variability, particularly low for Q10. It indicates that while most feel they have good critical thinking skills, there may be specific aspects that need improvement.

Table 8

Curiosity among Academic Administrators (N=130)

Q. No	Curiosity	Mean	SD
14.	I am curious and have a desire to learn and understand more about myself and the world around me.	4.19	0.79
15.	I actively seek out new information and experiences.	4.25	0.72
16.	I always consider how academic concepts ca be applied in real-life situations.	4.09	0.79
17.	I always think about finding new ways to deal with my job challenges.	4.16	0.75

Table 8 above describes one of the reflective trait 'curiosity' among academic administrators in higher education institutions. The mean scores ranges from 4.09 (minimum) to 4.25 (maximum). High scores across all items suggest that academic administrators have a strong inclination towards seeking new knowledge and exploring unknown areas.

Table 9

Meta-cognition among Academic Administrators (N=130)

Q. No	Meta-cognition	Mean	SD
18.	I am aware about my own thinking processes which includes how I think and evaluate my thinking strategies.	3.92	0.76
19.	I understand my personal beliefs influence my thinking sometimes.	3.79	0.85
20.	I rarely reflect upon my thinking processes.	2.86	1.05
21.	I am aware of my beliefs and know that these beliefs will influence my behavior towards myself and others.	3.82	0.75

Table 9 above describes one of the reflective trait 'meta-cognition' among academic administrators in higher education institutions. The mean scores ranges from 2.86 (minimum) to 3.92 (maximum). This shows significant variability, particularly low for Q10. It indicates that while most feel they have good critical thinking skills, there may be specific aspects that need improvement. Generally, administrators feel they are effective in thinking about their own thinking, but Q20 shows a notable dip, indicating possible challenges in certain meta-cognitive processes.

Table 10

Decision making among Academic Administrators (N=130)

Q. No	Decision making	Mean	SD
22.	I take decision after careful consideration and analysis of the specific situation by myself.	4.05	0.67
23.	In a challenging situation I never consider potential consequences before taking decisions.	2.95	1.13
24.	I always involve my staff members in decision-making processes	3.76	0.87

25.	I never review and evaluate my decisions.	2.35	1.04

Table 10 above describes one of the reflective trait 'decision making' among academic administrators in higher education institutions. The mean scores ranges from 2.35 (minimum) to 4.05 (maximum). There is a significant spread in scores, with some items indicating strong decision-making abilities and others suggesting areas for development, particularly in consistently applying decision-making processes.

Table 11
Problem solving among Academic Administrators (N=130)

Q. No	Problem solving	Mean	SD
26.	I frequently reflect upon my problem solving techniques and process.	3.94	0.65
27.	I approach challenges with a thoughtful and analytical mindset, considering various solutions and their potential outcomes.	4.05	0.61
28.	I always seek input from my seniors when solving complex problems.	4.06	0.63
29.	I correct my mistakes upon reflection.	4.19	0.56

Table 11 above describes one of the reflective trait 'problem solving' among academic administrators in higher education institutions. The mean scores ranges from 3.94 (minimum) to 4.19 (maximum). Responses suggest a strong capability in solving problems, with high consistency in handling challenging situations effectively.

Table 12
Continuous learning among Academic Administrators (N=130)

Q. No	Continuous learning	Mean	SD
30.	I always consider what could be done differently in the future regarding an past experience.	4.18	0.51
31.	I actively seek opportunities for growth and development, whether through formal education or experiential learning.	4.16	0.61
32.	I always think of what I had done so that I can improve on it further	4.26	0.58
33.	I like to take into consideration my past performance and integrate it with what I am doing in the present to help me better prepare for the future.	4.23	0.61

Table 12 above describes one of the reflective trait 'continuous learning' among academic administrators in higher education institutions. The mean scores ranges from 4.16 (minimum) to 4.26 (maximum). Very high scores indicate a commitment to continuous learning and improvement, reflecting a proactive attitude towards personal and professional development.

Findings of the Study

Based on the results provided in the document, here are the findings of the study:

1. **Gender and Reflective Thinking:** There was no statistically significant difference in the engagement in reflective thinking between male and female academic administrators. Males had a mean reflective thinking score of 3.90 and females had a mean score of 3.81, with a p-value of 0.852, indicating that gender does not significantly affect reflective thinking levels among academic administrators.
2. **Experience and Reflective Thinking:** Reflective thinking scores varied slightly across different experience levels but did not show a consistent trend of increase or decrease with more years of experience. The highest average scores were observed in administrators with over 20 years of experience (mean score of 4.04). However, the differences in reflective thinking scores across experience levels were not statistically significant, as indicated by a t-value of 0.318 and a p-value of 0.076.
3. **Specific Indicators of Reflective Thinking:** The study explored various aspects of reflective thinking including

open-mindedness, self-awareness, critical thinking, curiosity, metacognition, decision-making, problem-solving, and continuous learning. Each indicator showed a high level of engagement among academic administrators. Problem-solving had the highest average score (4.36), suggesting that it is a particularly strong aspect of reflective thinking in this group. Metacognition had the lowest mean score (3.81) and the highest standard deviation (1.06), indicating more variability in this trait among administrators.

4. **Open-mindedness:** Open-mindedness scores were generally high, with a particular strength in being open to feedback and alternative viewpoints. However, some administrators showed anxiety regarding feedback, as indicated by a lower mean score on this specific item (3.50).

5. **Self-Awareness and Critical Thinking:** Self-awareness and critical thinking were well-developed, with high mean scores across most items. However, identifying personal strengths and areas for improvement was a relatively weaker area in critical thinking, as suggested by the lower score for this item (2.64).

6. **Curiosity and Continuous Learning:** Curiosity and continuous learning scored highly, reflecting a strong desire to seek new information and apply it to professional challenges. Continuous learning scores were particularly high, indicating a proactive attitude towards personal and professional development.

These findings illustrate a generally high level of reflective thinking among academic administrators, with variations more pronounced in specific areas such as metacognition and critical thinking related to personal strengths. There were no significant differences between gender and experience, suggesting that these factors do not have a strong impact on the overall reflective thinking ability of this group.

Discussion

The results of this study showed that there was no significant difference in the level of reflective thinking between male and female academic managers in higher education institutions. This result is in stark contrast to the findings of Almusharraf and Almusharraf (2021), who found that female faculty members scored higher than male faculty members in reflective teaching practices. This difference suggests that factors such as cultural background or discipline may influence these differences. The lack of gender differences in our study may be due to the equal opportunity training and development provided by higher education institutions, which may provide similar training opportunities for male and female managers. In addition, regardless of gender, the roles and responsibilities of academic managers generally require similar levels of decision-making and problem-solving skills, which may standardize reflective thinking practices across genders.

The study hypothesized that experience would not significantly affect reflective thinking among academic managers. Our results support this hypothesis, indicating that reflective thinking did not differ significantly across experience levels. This finding is consistent with Ersozlu (2016), who argued that reflective thinking skills in academic settings are not solely dependent on the duration of experience. Several explanations for this observation include saturation of reflective abilities, where once managers have acquired the necessary reflective skills, additional experience does not significantly improve these abilities. Additionally, differences in job roles and institutional contexts may influence the effects of experience on reflective thinking. In some cases, more experienced managers may assume roles that require less reflective thinking.

The lack of significant differences based on gender and experience in our study may also be influenced by institutional factors. Specific executive training programs may standardize cognitive and reflective practices among managers, regardless of their gender or years of service. Additionally, the growing focus on universal professional development opportunities may minimize the traditional differences observed in earlier studies. Such programs ensure that all managers, regardless of gender or experience, develop and maintain high levels of reflective thinking.

Our analysis of specific indicators of reflective thinking showed that problem solving was the strongest aspect for academic managers, with a high mean score of 4.36. This finding highlights the key role of problem solving in academic management, confirming the research of Palanci and Okutan

(2010), who highlighted that problem solving is essential for effective academic leadership. Interestingly, our study found that metacognition had the lowest mean score and the highest variability. This suggests potential gaps in self-awareness and self-regulatory practices, which are key areas for future development planning. This is in contrast to the findings of Beziat et al. (2017), who reported high metacognitive abilities among school leaders. The variability in metacognition scores may indicate challenges in “reflective action,” which requires deeper cognitive processing, as proposed by Schön’s theory of reflective practice.

These findings can be discussed within the framework of Schön's reflective practice theory, which emphasizes the importance of reflection in action. According to Schön, professionals solve complex problems and learn from experience through reflective thinking. The high scores in problem solving reflect Schön's concept of "reflection in action," which involves immediate thinking and adaptation during an activity. The changes in metacognition may indicate challenges with "reflection in action," which occurs after an activity and requires deeper cognitive processing to evaluate success and improve future actions.

The results of this study make a significant contribution to existing theories of reflective thinking among academic managers. By demonstrating the absence of significant gender differences in reflective thinking, this study suggests that equalization of training and development opportunities in higher education institutions may have led to a leveling effect. This is consistent with theories of organizational learning and development that suggest that standardized training can homogenize skills and practices across demographic groups. Furthermore, the lack of significant experience-related differences in reflective thinking supports the view that reflective ability may reach a saturation point. This is consistent with Kolb's (1984) theory of experiential learning, which argues that while experience is essential for learning, the reflective process itself is a unique skill that does not necessarily deepen with years of experience. This finding highlights the importance of targeted reflective practice interventions rather than relying solely on accumulated experience.

As a component of reflective thinking, problem-solving scored high, highlighting the applicability of Schön's (1983) concept of "reflection in action" to academic management. This supports the view that effective leaders continually adjust and refine their real-time strategies, a critical skill in the dynamic environment of higher education. However, metacognition scores were low and more variable, suggesting a need for enhanced "reflection in action" training, which requires deeper cognitive engagement and evaluation of past behaviors. These findings contribute to a more nuanced understanding of reflective thinking, suggesting that while some aspects (such as problem-solving) are well developed, others (such as metacognition) require further attention. This highlights the importance of balanced development of reflective thinking, incorporating both immediate problem-solving skills and deeper reflective practices.

In terms of practical implications, institutions should develop targeted training programs that focus on improving metacognitive skills, such as self-awareness and self-regulation. Such programs can help address the gaps found in reflective practice. Continued emphasis on universal professional development opportunities can ensure that all managers, regardless of gender or experience, maintain high levels of reflective thinking. In addition, institutions could consider tailoring reflective practice programs to meet the specific needs and challenges of different management roles, ensuring that reflective skills are effectively utilized at all levels of management. By addressing these areas, higher education institutions can improve the reflective thinking skills of their academic managers, thereby increasing the effectiveness of leadership and management in the education sector.

Study Limitations

1. Sample size and representativeness: The sample size and its representativeness is one of the major limitations. Although this study targeted Heads of Departments (HoDs) and Deans from universities in Islamabad, the final sample may not be fully representative of all academic administrators in the region. Future studies should consider using a larger and more diverse sample, possibly employing random sampling techniques to improve representativeness and generalizability.
2. Geographical limitations: This study was limited to universities in Islamabad, which may limit the generalizability of the findings

to other regions or countries with different educational systems, cultural backgrounds, and institutional practices. Reflective thinking practices may vary greatly depending on geographical and cultural settings. Future research should include academic administrators from various regions and countries to explore how contextual factors influence reflective thinking.

3. Specific Indicators of Reflective Thinking: While the study focused on specific indicators of reflective thinking such as open-mindedness, self-awareness, critical thinking, curiosity, metacognition, decision-making, problem-solving, and continuous learning, other relevant aspects of reflective thinking might not have been captured. Future research could expand the scope to include additional dimensions of reflective thinking and employ mixed-method approaches to gain a more holistic view of the construct.
4. Institutional Contexts: The study did not extensively explore the influence of specific institutional contexts and environments on reflective thinking practices. Different universities may have different cultures, policies, and support systems, which can significantly influence the cultivation and practice of reflective thinking. Future research should explore the role of institutional contexts and how they promote or hinder reflective thinking among academic administrators.

Conclusion

In conclusion, this study provides valued insights into the reflective thinking practices of academic administrators working in higher education institutions, particularly examining the influence of gender and experience. The results showed that there were no significant differences between male and female managers in reflective thinking, suggesting that equal opportunity training and similar role responsibilities may standardize reflective thinking practices across genders. This is in contrast to some previous studies that suggest that cultural background or discipline may influence these differences. In addition, the study found no significant differences in reflective thinking across experience levels, supporting the idea that reflective abilities may reach a threshold beyond which additional experience does not significantly improve these abilities. Institutional factors such as standardized training programs and universal professional development opportunities may help reduce the traditional differences observed in earlier studies.

Analysis of specific indicators highlighted that problem solving was the strongest aspect of reflective thinking among academic managers, highlighting its key role in academic management. In contrast, metacognition had the lowest mean score and the highest variability, indicating potential gaps in self-awareness and self-regulation practices. The significance of these findings is that they have the potential to inform the development of targeted training and professional development programs. Higher education institutions should focus on improving metacognitive skills, such as self-awareness and self-regulation, to address the gaps found in reflective practices. Universal professional development opportunities should continue to be provided to ensure that all managers, regardless of gender or experience, maintain high levels of reflective thinking. In addition, reflective practice programs should be tailored to meet the specific needs and challenges of different managerial roles.

For future research, it is recommended to explore the influence of cultural context and discipline on reflective thinking in more detail. Longitudinal research can provide a deeper understanding of how reflective thinking develops over time and at different career stages. In addition, qualitative research can provide a more nuanced understanding of the individual and organizational factors that influence academic managers' reflective practice. By implementing these recommendations, higher education institutions can improve the reflective thinking skills of their academic managers, thereby improving leadership and management effectiveness and ultimately improving educational outcomes.

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