

Strategic thinking and innovation management of global educational leaders in VUCAD environment

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Abstract

The study aims to explore the strategic thinking and innovation management practices of global educational leaders in the VUCAD (Volatility, Uncertainty, Complexity, Ambiguity, Diversity) environment, with the fundamental premise that educational leaders are not only beneficial but also functional in any school organization. By investigating the strategies and practices employed by global educational leaders, the study seeks to enhance our understanding of how school leaders can effectively respond to the challenges and dynamics of the VUCAD environment. Through a mixed-methods approach, specifically the explanatory or sequential design, this research collected data from thirty (30) school heads, fifteen (15) of whom were from the Philippines, and another fifteen (15) from selected foreign countries across the globe. The quantitative data obtained through online survey was analyzed statistically the socio-demographic profiles and their relationship to the strategic thinking and innovation management practices. While qualitative data was collected through in-depth interviews to gain a comprehensive understanding of respondents' perspectives and experiences. The in-depth insights were transcribed, coded, and organized into themes, leading to the formulation of theories (grounded theory). The study's findings indicate that while nationality and religion showed significant variation, many socio-demographic factors identified in this study were associated with both strategic thinking and innovation management practices in the VUCAD world. Educational leaders are encouraged to adopt the strategic thinking and innovation management practices highlighted in this study, which align with theories such as ecological theory, innovation and strategic management theory for positive change, innovation leadership theory, innovative leadership theory, and strategic innovation leadership theory.

Keywords: strategic thinking, innovation management, global educational leaders, VUCAD environment, challenges and dynamics

Strategic thinking and innovation management of global educational leaders in VUCAD environment

1. Rationale

Educational leaders play a crucial role in school organizations worldwide. They are responsible for leading and directing educational institutions, making them essential for effective functioning and success. Educational leaders take on multiple roles, such as instructional and curriculum leaders, financial resources managers, and human resources leaders. These roles are complex and demanding, requiring educational leaders to possess versatility and multitasking abilities. The significance of educational leaders in society is substantial, as a large portion of the world's population is still in school, and educators have a direct impact on students' learning journeys (Kakande, 2019). Strategic thinking is crucial in the field of education. Without proper planning and strategic approaches, efforts toward development can be in vain. According to Harris (2021), strategic thinking involves scouting and developing unique opportunities to create value for educational institutions. It requires leaders to think quickly and clearly to lead their organizations effectively. Areas of focus in strategic thinking include protection, stability, stimulus, and long-term preparation (Tomlinson, 2021).

Innovation management is another essential aspect of education, involving the generation and implementation of new ideas and solutions. It allows educational institutions to differentiate themselves and address challenges in unique ways (Seameo Innotech, n.d.). Innovation management practices are instrumental in addressing old problems with novel solutions. Despite the challenges posed by the COVID-19 pandemic, innovation continues to thrive, and its importance remains paramount. The concept of VUCAD (Volatility, Uncertainty, Complexity, Ambiguity, and Diversity) provides a lens to understand the current world and its impact on education (Kamontheop, n.d.). VUCAD acknowledges the ever-changing nature of our world and emphasizes the need to study and adapt to its various contexts (Petilla, n.d.).

In summary, educational leaders played a critical role in school organizations, and their strategic thinking and innovation management abilities significantly impacted various educational facets. However, the existing literature lacked cohesiveness, conciseness, and generalizability. This study aimed to address these gaps by providing comprehensive research on the strategic thinking and innovation management of global educational leaders in the VUCAD environment. By doing so, this study aimed to contribute valuable insights to enhance educational leadership practices and improve education systems in VUCAD world.

Statement of the Problem - This study aimed to explore global educational leaders' strategic thinking and innovation management practice in this VUCAD (Volatility, Uncertainty, Ambiguity, and Diversity). Specifically, it sought answers to the following questions:

- (1) What is the socio-demographic profile of educational leaders?
- (2) What are the educational leaders' strategic thinking skills in the VUCAD environment?
- (3) What are the educational leaders' innovation management practices in the VUCAD environment?
- (4) Is there a relationship between the educational leaders' socio-demographic profile with strategic thinking and innovation management practices in the VUCAD environment?
- (5) What are the most relevant and general effects of strategic thinking and innovation management practices?
- (6) How can global educational leaders adopt the most efficient strategic thinking and innovation management in their schools?

Scope and Delimitation - The scope of this study was focused on exploring the understanding of how school leaders could effectively respond to the challenges and dynamics of the VUCAD (Volatility, Uncertainty, Complexity, Ambiguity, and Disruption) environment by investigating the experiences of strategic thinking and innovation management practices. The study involved a total of thirty (30) school heads from both developed and

developing contexts, specifically the United States of America, Singapore, Thailand, Qatar, Vietnam, India, United Kingdom, Greece and the Philippines. These countries were selected to ensure a diverse representation of different regions and socio-economic backgrounds. The study considered every aspect of global educational leaders' socio-demographic information, and their perspectives and experiences were explored to gain a deeper understanding of the challenges in the VUCAD world. Each respondent was given the same questionnaires and had the opportunity to be interviewed. The study focused on the school year 2022-2023.

2. Research design

This study employed a mixed method design, which is a combination of qualitative and quantitative approaches to collect and analyze data (Creswell & Tashakkori, 2007). The mixed method design was chosen because it can provide detailed and comprehensive data to achieve the research objectives and answer the research questions. Specifically, this study most appropriately employed the explanatory model, also known as a sequential design, which is a two-stage mixed method design. The explanatory design followed a two-stage process, starting with the collection and analysis of quantitative data, followed by the collection and analysis of qualitative data to provide a deeper understanding of specific quantitative findings (Teddlie and Tashakkori, 2009). The purpose of gathering qualitative data was to provide further explanations and explore the research topic in more detail. After the data collection phase, both types of data were analyzed using descriptive statistics for quantitative data to describe the socio-demographic profile of global educational leaders with verbal interpretation and test the hypothesis if there was a significant relationship to their strategic thinking and innovation management practices using Kruskal-Wallis. Thematic analysis via grounded theory was employed for qualitative data to determine the general effects of strategic thinking and innovation practices and how they could adapt it in their respective schools. Subsequently, discussions were held to analyze and interpret the findings.

Respondents - The study intentionally gathered data from school leaders globally, including both local and foreign school heads. They were purposely included, comprising fifteen (15) respondents from each region of the Philippines and fifteen (15) foreign respondents to ensure inclusivity. The selection of respondents was done without bias or discrimination based on gender, considering the differences among school leaders as research pointers. The research protected the subjects from harm, ensured privacy and confidentiality, and prevented unjustifiable deception. The researcher hand-picked respondents based on their availability, relevance to the research, and existing connections or referrals.

Research Instrument - A survey questionnaire and checklist were used to gather descriptive responses from the school heads. The adopted survey questionnaire and checklist were standardized and developed by Pisapia and Reyes-Guerra (2008), enhancing structured and consistent data collection. Additionally, a semi-structured in-depth interview guide was utilized for the qualitative aspect, allowing flexibility without compromising the researcher's skills or subjectivity. The interview guide was designed to align with the research objectives and ensure adequate addressing of the research questions. By utilizing these research instruments, the credibility and validity of the study findings were significantly enhanced, contributing to the overall quality of the research.

Data Analysis - The data analysis of the study was conducted in two stages: quantitative analysis of quantitative data and qualitative analysis of qualitative data.

Stage 1: Quantitative Analysis of Quantitative Data

The first stage involved the use of descriptive statistics (central tendency) to compute the socio-demographic profile of the global educational leaders in relation to their strategic thinking and innovation management practices in VUCAD environment with verbal interpretation. Kruskal-Wallis test was employed to analyze the relationships among variables. The Kruskal-Wallis test is a non-parametric statistical hypothesis test used to determine if three or more independent samples come from populations with the same median (Chen & 2022).

Stage 2: Qualitative Analysis of Qualitative Data

In the second stage, the qualitative treatment of data from interviews followed grounded theory methodology. This involved a systematic process after transcribing the interview data. Initially, codes were created as descriptive labels or tags for different segments of the data, based on the content and meaning of the transcribed interviews. Coding served the purpose of organizing and categorizing the data, facilitating systematic analysis. Subsequently, the codes were thoroughly examined and analyzed to identify patterns, connections, and themes within the data. These themes represented recurring concepts or ideas across the interviews, derived directly from the data itself through careful analysis of the coded segments. The themes captured underlying patterns, insights, and interpretations that emerged from the interviews, forming a coherent and meaningful framework. Throughout the analysis, constant comparison and refinement were employed to ensure that the themes remained grounded in the data and accurately represented the perspectives and experiences of the participants. By going beyond individual codes and themes, the analysis aimed to uncover the interplay between them, leading to the formulation of theories or theoretical explanations that provided a deeper understanding of the phenomena under study.

3. Results and discussion

Socio-Demographic Profile of the Educational Leaders

The socio-demographic profile of the global educational leaders was reported in Table 1. As presented in the table, in terms of gender, the majority of the respondents are female (56.7%), some are male (40.0%) while 3.3% prefer not to say. Non-Catholic respondents (56.7%) have greater numbers than those Catholics (46.35%), while married, single and other marital status accounted for 66.7%, 30.0% and 3.3% of the respondents, respectively.

Table 1
Socio-Demographic Profile of the Educational Leaders

Socio-Demographic Variables	Frequency (n=30)	Percentage (%)
Sex		
Male	12	40.0
Female	17	56.7
Prefer not to say	1	3.3
Religion		
Non-Catholic	17	56.7
Roman Catholic	13	43.3
Marital Status		
Single	9	30.0
Married	20	66.7
Other	1	3.3
Nationality		
Filipino	23	76.7
Non-Filipino	7	23.3
Experience as School Head		
1-5 years	15	50.0
6-10 years	8	26.7
11-15 years	2	6.7
> 15 years	5	16.7
Qualification		
Diploma	5	16.7
MA/MSc	12	40.0
Ph.D.	7	23.3
Ed. D	4	13.3
Others	2	6.7
Experience in Strategic Management and Innovation Management		
Yes	28	93.3
No	2	6.7

This information can be used to understand the diversity of the sample and how this might impact the generalizability of the findings. This implies that data presented in the statement can be used to analyze the

correlation between the socio-demographic profile of school heads and their experience and qualifications in strategic and innovation management. For instance, school heads with a Ph.D. qualification may have a higher level of expertise in innovation management than those with a diploma. Similarly, those with more than 15 years of experience as school heads may have greater experience in strategic management compared to those with less than five years of experience.

Strategic Thinking Skills of the Educational Leaders in the VUCAD Environment

Table 2

Strategic Thinking Skill of the Educational Leaders in the VUCAD Environment

Item	M	SD	Rank	Interpretation
System Thinking				
ST1 (I suspend my judgment until I have gathered all the information.)	3.73	1.28	19	Often
ST2 (I consider the results of my past decisions.)	4.13	0.94	5	Often
ST3 (I try to extract patterns in the information available.)	4.07	1.01	8	Often
ST4 (I decide upon a point of view. Then, I search for solutions to the problem.)	4.00	1.20	11	Often
ST5 (I reconstruct the situation in my mind.)	4.07	1.11	8	Often
ST6 (I define the entire problem before breaking it down into parts.)	4.17	1.02	2	Often
ST7 (I choose the first solution that comes into my mind.)	3.43	1.07	24	Sometimes
ST8 (After the situation was resolved, I thought about how I handled it.)	4.17	0.87	2	Often
ST9 (I look for fundamental long-term corrective measures.)	4.27	0.83	1	Often
Reframing				
REF1 (I look at the Big Picture before examining the details.)	3.77	1.36	18	Often
REF2 (I usually find more than one explanation for the way things work.)	3.70	1.24	21	Often
REF3 (I investigate the cause before taking action.)	4.10	1.06	6	Often
REF4 (I look for opposing points of view and opinions.)	3.90	1.12	14	Often
REF5 (I reconstruct the situation in my mind.)	3.83	1.09	16	Often
REF6 (I create a plan to solve the problem first, and then I consider the points of view of others.)	3.83	1.18	16	Often
REF7 (I ask myself, "how do the dots connect in this situation?")	3.73	1.23	19	Often
REF8 (I focus on ideas that were not previously considered.)	3.50	1.07	23	Often
REF9 (I try to understand how and why a situation worked out after it was resolved.)	4.10	0.88	6	Often
Reflection				
RFX1 (I look for fundamental changes in the organization's structure that could lead to significant improvements.)	3.97	1.19	13	Often
RFX2 (I connect the current problem to my personal experiences.)	3.67	1.18	22	Often
RFX3 (I try to understand how the people in the situation are connected to each other.)	4.17	0.87	2	Often
RFX4 (I try to understand how the facts in the situation are related to each other.)	4.03	1.00	10	Often
RFX5 (I insist on my first impression even after other alternatives are identified.)	3.23	1.28	25	Sometimes
RFX6 (I look for facts that are being overlooked.)	4.00	1.05	11	Often
RFX7 (I thought about why I succeeded or failed after the situation was resolved)	3.87	1.14	15	Often
Overall Mean	3.90			Often

The results displayed in Table 2 indicated a high level of strategic thinking skills among the study respondents. Notably, specific items such as Strategic Thinking No. 9 (Look for fundamental long-term corrective measures), Strategic Thinking No. 6 (Define the entire problem before breaking it down into parts), Strategic Thinking No. 8 (After the situation was resolved, I thought about how I handled it), Reflection No. 3 (Understand how the people in the situation are connected to each other), Strategic Thinking No. 2 (Consider the results of my past action), Reframing No. 3 (Investigate the cause before taking action), and Reframing No. 9 (Try to understand how and why situation worked out after it was resolved) achieved means above 4, indicating strong agreement with statements related to these skills. This suggested that the respondents consistently demonstrated strong strategic thinking abilities, as they rated these items highly. This implied that these skills were regularly employed in their decision-making and problem-solving processes. Consequently, the findings underscored the importance of strategic thinking within the context of the study, highlighting the respondents' robust ability to think strategically in their roles. The significance of strategic thinking aligned with a study conducted by Johansen (2012), which found that leaders exhibited strategic thinking skills, clarity, and tolerance. This was supported by Reiche et al. (2017), who emphasized that in the complexity of the modern world, global leaders were expected to achieve results and manage relationship networks across diverse countries and cultures. Moreover, Kurylo (2021)

emphasized the importance of systems thinking, which involved understanding the interconnectedness of various system components and their mutual influence.

Innovation Management Practices of Educational Leaders in the VUCAD Environment

Table 3

Innovation Management Practices of the Educational Leaders in the VUCAD Environment

Item	Mean	SD	Rank	Verbal Interpretation
Student Empowerment/Centrism				
SEC1 (I encourage high self-efficacy)	4.40	0.89	17	Agree
SEC2 (I foster positive learner identity)	4.47	0.78	15	Agree
SEC3 (I encourage emotional intelligence)	4.53	0.68	10	Strongly Agree
SEC4 (I foster social awareness)	4.57	0.73	8	Strongly Agree
SEC5 (I encourage good decision-making skills)	4.60	0.86	5	Strongly Agree
Collaboration with colleagues/Community engagement				
CCCE1 (I encourage communication)	4.60	0.72	5	Strongly Agree
CCCE2 (I foster coordination)	4.53	0.82	10	Strongly Agree
CCCE3 (I encourage transparency)	4.67	0.66	1	Strongly Agree
CCCE4 (I foster accountability)	4.57	0.77	8	Strongly Agree
CCCE5 (I encourage trust)	4.63	0.85	2	Strongly Agree
Responsiveness to identities and culture				
RIC1 (I encourage self-awareness)	4.63	0.81	2	Strongly Agree
RIC2 (I foster learning)	4.60	0.72	5	Strongly Agree
RIC3 (I penalize stereotyping)	3.80	1.10	19	Agree
RIC4 (I foster appreciating differences)	4.50	0.73	13	Strongly Agree
Transparency				
T1 (I encourage honesty and discretion at the same time)	4.63	0.72	2	Strongly Agree
T2 (I react accordingly)	4.37	0.85	18	Agree
T3 (I value relationships over hierarchy)	4.50	0.73	13	Strongly Agree
Research Training				
RT1 (I encourage the awareness and application of established professional norms)	4.53	0.73	10	Strongly Agree
RT2 (I encourage the awareness and application of established ethical principles)	4.43	0.82	16	Agree
Overall Mean		4.50		Strongly Agree

The interpretation of the given data in Table 3, suggests that the respondents possess top innovation management practices, as indicated by the high means (average scores) of certain items. Collaboration with Colleagues Community Involvement No. 3 or CCCE3 (“I encourage transparency”) (4.67) Collaboration with Colleagues Community Involvement No. 5 or CCCE3 (“I encourage trust”) CCCE5, Responsiveness to Identities and culture No. 1 of RIC1 (“I encourage self-awareness”) and Transparency No. 1 or T1 (“I encourage honesty and discretion at the same time”) with (4.63), and Student Empowerment/Centrism No. 5 or SEC5 (“I encourage good decision making skills), Collaboration with Colleagues Community Involvement No. 1 or CCCE1 (“ I encourage communication”) and Responsiveness to Identities and culture No. 2 or RIC2 (“I foster learning) with (4.60). This could imply that the organization in which the school heads operate places a high emphasis on innovation management and has established robust practices in this regard. The strong agreement among the school heads could also indicate a shared understanding of the importance of innovation management and a collective effort to implement best practices. These claims are supported by the study of Hero et.al. (2017). The findings of the study support the argument that the respondents tend to possess top innovation management practices, as indicated by the high mean scores of certain items and the overall consensus among respondents.

Relationship between the Educational Leaders’ Socio-demographic Profile in the Strategic Thinking and Innovation Management Practices

Table 4.1 shows that the test results indicated that the median scores did not significantly differ across gender subgroups, as evidenced by a p-value greater than 0.05. Based on this, it is concluded that there is no significant relationship between gender and strategic thinking skills subscales. Thus, it implies that there is no evidence to support the notion that gender influences strategic thinking skills subscales. In terms of strategic thinking skills, emotional intelligence, empathy, and collaboration are essential for effective leadership in the VUCAD context.

These skills are not inherently gendered, and both men and women can possess them. However, women may be more likely to use these skills due to societal expectations about gender roles and women's socialization (Meshkat et al, 2017).

A. Strategic Thinking Skills in terms of Sex

Table 4.1

Strategic Thinking Skills in terms of Sex

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	4.804	0.091
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	1.732	0.421
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	1.762	0.414
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	4.719	0.094
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	5.408	0.067
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	2.361	0.307
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	1.954	0.376
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	4.199	0.123

B. Strategic Thinking Skills in terms of Religion

Table 4.2

Strategic Thinking Skills in terms of Religion

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	2.396	0.015
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	2.729	0.005
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	2.062	0.039
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	2.979	0.004
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	2.5	0.031
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	1.94	0.059
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	2.111	0.048
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	1.948	0.086

The interpretation of the results in Table 4.2, indicates that there is a significant difference in the median scores for the strategic thinking skills subscales across subgroups of religion, except for the two subscales mentioned above, which have p-values greater than 0.05. These findings may have several implications. First, these results could suggest that religion plays a role in shaping cognitive abilities related to strategic thinking. For example, religious teachings, practices, and beliefs may influence individuals' cognitive processes and decision-making skills, which in turn could affect their strategic thinking abilities. This may also imply that individuals with different religious backgrounds may approach strategic thinking tasks differently, potentially leading to variations in their performance. Second, the higher median scores of Catholics compared to non-Catholics may indicate that Catholic individuals possess certain traits or characteristics that are conducive to better strategic thinking skills. This finding concurs with the results obtained from the study conducted by Henderson et.al, (2022), suggesting

that religion may play a role in shaping cognitive abilities related to strategic thinking and potentially influencing individuals' cognitive processes and decision-making skills. However, it is important to note that the results only show an association between religion and strategic thinking skills and do not necessarily imply causality. Other factors, such as education, cultural background, and personal experiences, may also contribute to the observed differences.

C. Strategic Thinking Skills in terms of Marital Status

Table 4.3
Strategic Thinking Skills in terms of Marital Status

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	1.917	0.383
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	1.092	0.579
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	1.022	0.6
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	1.067	0.586
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	0.637	0.727
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	2.412	0.299
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	0.961	0.619
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	2.083	0.353

As shown in the table above (Table 4.3), the results indicate that there is no significant variation in median scores for the strategic thinking skills subscales across subgroups of marital status, as evidenced by p-values greater than 0.05. This suggests that marital status may not be related to strategic thinking skills, and there may be no significant differences in strategic thinking abilities among individuals of different marital statuses. Subsequently, these findings imply that factors other than marital status, such as education, experience, or personality traits, may play a more significant role in shaping strategic thinking skills.

D. Strategic Thinking Skills in terms of Nationality

Table 4.4
Strategic Thinking Skills in terms of Nationality

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	-1.896	0.061
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	-2.361	0.016
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	-2.293	0.022
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	-2.257	0.033
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	-2.474	0.033
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	-1.974	0.054
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	-2.868	0.006
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	-2.728	0.014

The findings presented in table 4.4 revealed a significant variation in the median scores for most of the

strategic thinking skills subscales across subgroups of nationality, except for the ST (Strategic Thinking) and RIC (Responsiveness to Identities and Culture) subscales. Notably, Filipinos demonstrated significantly higher median scores compared to non-Filipinos, suggesting that nationality may influence strategic thinking skills. These results have important implications for understanding the role of cultural or contextual factors associated with nationality in shaping strategic thinking abilities. They indicate that individuals from different nationalities may possess distinct cognitive abilities, decision-making processes, or problem-solving approaches that impact their strategic thinking capabilities. Moreover, these findings emphasize the significance of considering cultural diversity when studying and assessing strategic thinking skills. It is important to note that the results do not imply causality, but rather indicate an association between nationality and strategic thinking skills. Other factors such as educational background, individual experiences, and social contexts may also contribute to the observed differences. Therefore, future research could delve into the specific cultural factors that contribute to the higher strategic thinking scores among Filipinos and investigate how cultural values and practices shape strategic thinking abilities in diverse populations.

E. Strategic Thinking Skills in terms of Experience

Table 4.5
Strategic Thinking Skills in terms of Experience

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	6.891	0.075
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	3.993	0.262
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	2.158	0.54
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	2.832	0.418
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	0.957	0.812
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	0.299	0.96
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	2.761	0.43
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	2.677	0.444

Table 4.5 indicated, that there was no significant variation in the median scores for the strategic thinking skills subscales across subgroups of experience. This suggests that experience, in terms of years of professional or relevant experience, may not be related to strategic thinking skills as measured by the subscales used in the study. The implications of these findings are twofold. Firstly, schools and individuals should not solely rely on experience as an indicator of strategic thinking skills. When evaluating individuals for strategic roles or decision-making positions, it is important to consider a broader range of factors that contribute to strategic thinking abilities. This could include assessing cognitive capabilities, problem-solving skills, and critical thinking abilities. Secondly, these findings highlight the importance of continuous learning and development for school heads in enhancing strategic thinking skills. While experience alone may not guarantee higher strategic thinking abilities, individuals can actively work on improving their strategic thinking skills through training, education, and exposure to diverse perspectives. It is important to note that continuous learning and development should be viewed as an ongoing process, as the VUCAD environment continuously presents new challenges and opportunities.

F. Strategic Thinking Skills in terms of Qualifications

As shown in table 4.6, the result revealed that there was no statistically significant difference in the median scores for the strategic thinking skills subscales across different subgroups of qualifications. This finding suggests that qualifications, such as educational degrees or certifications, may not be strongly related to strategic thinking

skills as measured by the subscales used in the study. One possible explanation for the lack of significant relationship between qualifications and strategic thinking skills could be the multifaceted nature of strategic thinking (Petilla, n.d.). Strategic thinking encompasses a wide range of cognitive, behavioral, and socio-emotional skills that may not be solely dependent on formal qualifications. Other factors, such as experience, personality traits, problem-solving abilities, and decision-making skills, may also play a significant role in the development of strategic thinking skills.

Table 4.6
Strategic Thinking Skills in terms of Qualifications

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	0.334	0.987
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	1.413	0.842
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	2.543	0.637
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	0.991	0.911
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	2.382	0.666
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	5.42	0.247
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	3.04	0.551
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	5.129	0.274

Table 4.7, results showed that the median scores for the strategic thinking skills subscales did not significantly vary across subgroups of experience in strategic management and innovation management. Hence, they are not related.

G. Strategic Thinking Skills in terms of Experience in Strategic Management and Innovation Management

Table 4.7
Strategic Thinking Skills in terms of Experience in Strategic Management and Innovation Management

No.	Description	Test	Test Statistic	p-value
1	SYSTEM THINKING	Independent-Samples Kruskal-Wallis Test	-1.587	0.138
2	REFRAMING	Independent-Samples Kruskal-Wallis Test	-1.418	0.193
3	REFLECTION	Independent-Samples Kruskal-Wallis Test	-1.63	0.115
4	STUDENT EMPOWERMENT/CENTRISM	Independent-Samples Kruskal-Wallis Test	-1.335	0.257
5	COLLABORATION WITH COLLEAGUES/COMMUNITY INVOLVEMENT	Independent-Samples Kruskal-Wallis Test	-1.061	0.414
6	RESPONSIVENESS TO IDENTITIES & CULTURE	Independent-Samples Kruskal-Wallis Test	-1.228	0.257
7	TRANSPARENCY	Independent-Samples Kruskal-Wallis Test	-0.491	0.662
8	RESEARCH TRAINING	Independent-Samples Kruskal-Wallis Test	-1.133	0.372

This finding is similar in the research conducted by Gluck et al (2023) on innovation management and strategic thinking skills on competitive advantage. The findings suggest that educational leaders with experience in innovation management and strategic thinking skills are better equipped to develop competitive advantages in the VUCAD world. Thus, the role of strategic thinking and strategic management in educational innovation.

As shown in Table 4.8, results showed that the median scores for the overall strategic thinking skills significantly varied across subgroups of religion ($H = 7.164$, $p < 0.05$) and nationality. Catholics had significantly higher median scores compared to non-Catholics as well as Filipinos as compared to non-Filipinos. The study shows that religion and nationality can have a significant impact on an individual's strategic thinking skills. This finding suggests that individuals who belong to certain religious and national subgroups may possess a higher level of strategic thinking skills compared to those who do not belong to these subgroups.

H. Strategic Thinking Skills when Grouped according to Demographic Profile

Table 4.8

Overall Strategic Thinking Skills when grouped According to Demographic Profile

No.	Description	Test	Test Statistic	p-value
1	The distribution of Strategic Thinking Skill is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	2.555	0.279
2	The distribution of Strategic Thinking Skill is the same across categories of Religion.	Independent-Samples Kruskal-Wallis Test	7.164	0.007
3	The distribution of Strategic Thinking Skill is the same across categories of Marital Status.	Independent-Samples Kruskal-Wallis Test	1.206	0.547
4	The distribution of Strategic Thinking Skill is the same across categories of Nationality.	Independent-Samples Kruskal-Wallis Test	4.873	0.027
5	The distribution of Strategic Thinking Skill is the same across categories of Experience.	Independent-Samples Kruskal-Wallis Test	5.134	0.162
6	The distribution of Strategic Thinking Skill is the same across categories of Qualification.	Independent-Samples Kruskal-Wallis Test	1.222	0.874
7	The distribution of Strategic Thinking Skill is the same across categories of Experience in Strategic Management and Innovation Management.	Independent-Samples Kruskal-Wallis Test	2.368	0.124

One cultural implication of the influence of religion and nationality on the strategic thinking of educational leaders in the VUCAD environment is the importance of developing intercultural competence. As noted by Myles (2019), the VUCAD environment presents unique challenges and opportunities for organizations and leaders, including the need to navigate complex cultural and technological changes.

As shown in Table 4.9, results showed that the median scores for the overall innovation management practices significantly varied across subgroups of religion ($H = 4.051$, $p < 0.05$) and nationality. Catholics had significantly higher median scores compared to non-Catholics as well as Filipinos as compared to non-Filipinos. This finding suggests that religion and nationality are significant factors that may influence innovation management practices in the context of the study. The higher median scores for Catholics and Filipinos may indicate that these subgroups have a greater propensity towards innovation or are more likely to adopt innovative practices in their organizations compared to non-Catholics and non-Filipinos. This finding has important implications for organizations operating in multicultural contexts, as it suggests that factors such as religion and nationality may play a role in shaping innovation management practices. This underscores the need for organizations to be mindful of cultural and religious differences in their workforce and to promote VUCAD in their innovation strategies.

I. Innovation Management Practices when Grouped according to Demographic Profile

This finding is supported by the results of study by Kalliny (2007), stating that religion is a significant predictor of innovation adoption. The author suggests that cultural factors such as religion play an important role in shaping innovation adoption practices, and that organizations need to be aware of these factors in order to foster a culture of innovation and diversity.

Table 4.9*Overall Innovation Management Practices when grouped According to Demographic Profile*

No.	Description	Test	Test Statistic	p-value
1	The distribution of Innovation Management Practices is the same across categories of Gender.	Independent-Samples Kruskal-Wallis Test	3.858	0.145
2	The distribution of Innovation Management Practices is the same across categories of Religion.	Independent-Samples Kruskal-Wallis Test	4.051	0.044
3	The distribution of Innovation Management Practices is the same across categories of Marital Status.	Independent-Samples Kruskal-Wallis Test	1.503	0.472
4	The distribution of Innovation Management Practices is the same across categories of Nationality.	Independent-Samples Kruskal-Wallis Test	7.414	0.006
5	The distribution of Innovation Management Practices is the same across categories of Experience.	Independent-Samples Kruskal-Wallis Test	3.382	0.336
6	The distribution of Innovation Management Practices is the same across categories of Qualification.	Independent-Samples Kruskal-Wallis Test	3.784	0.436
7	The distribution of Innovation Management Practices is the same across categories of Experience in Strategic Management and Innovation Management.	Independent-Samples Kruskal-Wallis Test	1.170	0.280

4. Effects of the Strategic Thinking and Innovation Management Practices of Global Educational Leaders

In this part of the discussion of the results and findings of the study, using qualitative approach, the major themes with subthemes emerged on the most relevant and general effects of the strategic thinking and innovation management practices of Global Educational Leaders.

Theme 1. Positive effects and change

The VUCAD environment has significantly impacted the field of educational leadership, presenting unique challenges and opportunities for leaders in the education sector. In this context, the respondents' strategic skills and innovations practices play a crucial role in driving positive effects and changes, enabling them to effectively navigate the complexities of the VUCAD environment.

Interview Excerpt 10 (SH 4): *There is a positive effect and a positive direction, especially in these trying times. I remember that the pandemic was full of challenges, but behind those challenges, there is a beauty to appreciate because as a school head I was able to come up with creative ideas like creating a team to support all the necessary needs of the school and students. Managing the innovation practices in my immediate surroundings requires strategic skills. These strategies will not always produce positive results, but somehow, they can be honed for improvement for better use in the future.*

Interview Excerpt 8 (SH 2): *Based on my experience, I believe there were positive effects because we were able to generate ideas that led to quality programs or activities for our learners and the community as a whole. If we had consistently monitored these programs and projects, they would have improved over the years and could have been utilized in the future if similar problems or issues were to arise.*

The excerpts above express a positive outlook on the effects of strategic skills, innovation practices, and program development. Specifically, School Head 4 highlights the positive impact of innovation management, which necessitates strategic skills. School Head 2 underscored the importance of constantly monitoring programs and projects to improve their quality and readiness for future use. While the excerpts do not explicitly mention managing innovation practices in the context of strategic skills, they provide valuable insights into the positive outcomes and the direction for improvement in the given scenarios.

One of the significant positive effects of strategic skills and innovations of educational leadership in the VUCAD environment is improved decision-making and problem-solving. This improved decision-making and problem-solving capability are crucial in the VUCAD environment, as it allows educational leaders to effectively respond to the dynamic and diverse needs of students, staff, and other stakeholders. This is evident in the general response of the respondents:

Interview Excerpt 12 (School Head 5): *The effect of these practices is a positive change for everyone in the organization. We can hone these practices for future use if we reflect for us school leaders to evaluate what went wrong and what has to be done to make it right.*

The excerpt above aligns with the principles of change management and continuous improvement. Evaluating past experiences and reflecting on what went wrong can provide valuable insights and lessons for enhancing organizational practices and processes (Bowman, 2022). This reflective approach allows school leaders to identify areas for improvement and develop strategies to address any shortcomings, ultimately driving positive change within the organization. By honing these practices for future use, school leaders can apply their reflections and insights to refine their approach, making necessary adjustments to achieve better outcomes. This process of self-assessment and improvement fosters a culture of continuous learning and growth, benefiting both the organization and its members.

Sub-Theme 1.1. Future use and learning from experience

In developing a strategic mindset and fostering a culture of innovation within their organizations, school leaders can better anticipate and respond to emerging problems, and develop creative solutions that drive long-term success.

Interview Excerpt 5 (HT 10): *The strategic thinking practices and innovation management practices are two equally important variables; hence, both can be the best experiences that can be used for the future when we school leaders would experience extremes issues. Problems and challenges.*

The excerpt above emphasizes on the equal importance of strategic thinking practices and innovation management practices. School leaders recognize that both these variables contribute significantly to their ability to tackle extreme issues, problems, and challenges. By leveraging strategic thinking skills and innovation management practices, leaders can adapt to dynamic situations, think critically, and develop effective strategies that address the unique needs of their educational institutions.

Sub-Theme 1.2. Impact on Learners and Community

The impact of strategic skills and innovations in educational leadership in the VUCAD environment also extends beyond learners to the broader community. Educational leaders who possess strategic skills can foster positive relationships with stakeholders in the community, such as parents, policymakers, and local organizations. Through strategic partnerships and collaborations, educational leaders can address community needs and align educational goals with the broader social and economic context (Blue-Banning et.al, 2015). This is supported on the statements of the respondents:

Interview Excerpt 5 (SH 1): *That's why strategic skills and managing innovation practices are so effective tools in managing this complex world.*

Interview Excerpt 5 (SH 15): *The projects and innovative programs have had a positive effect on my school and community.*

The excerpts above stressed on how effective strategic and innovation management as effective tools that cause positive effect for the community. The excerpts highlighted the value of strategic skills and managing innovation practices in managing complexity. It emphasizes the role of strategic thinking and innovation in

addressing challenges and driving positive change. By leveraging these tools, individuals can develop efficient strategies, implement innovative programs, and have a positive impact on their schools, communities, and beyond.

Sub-Theme 1.3. Belief in positive outcomes

One of the key benefits of strategic thinking skills in educational leadership is the ability to proactively respond to the changing landscape of education in the VUCAD environment. According to the New Zealand Ministry of Education (2023), educational leaders who possess strategic thinking skills are able to anticipate and respond effectively to changes and challenges, and lead their institutions towards positive outcomes. This is evident in the response of the respondent;

Excerpt Interview 15 (SH 10): *The innovative programs are product of creative thinking. It was a successful one because we see to it that our learners learn the expected competencies they need to master and learn. I always believe in positive outcomes.*

The provided excerpt above, highlighted the relationship between creative thinking, innovation management, and the successful delivery of expected competencies to learners. It suggests that by employing creative thinking and implementing innovative programs, educational institutions can effectively ensure that learners acquire and master the required competencies. This implies that a focus on creative thinking and innovation in education can lead to positive outcomes.

Theme 2. Innovation and progressive thinking

Innovation is a key driver of success in the field of education, especially in the VUCAD environment. Educational leaders who are innovative in their approaches are better able to adapt to the changing landscape of education and find creative solutions to complex problems. As stated by Serdyukov (2017), innovation involves finding new and creative ways to address challenges and improve educational practices. Progressive thinking is also crucial for educational leaders in the VUCAD environment. Progressive thinking involves being forward-looking, open to new ideas, and willing to challenge traditional practices in order to bring about positive change (American University, 2020). Educational leaders who engage in progressive thinking are more likely to be proactive in anticipating and addressing emerging issues in the field of education (Chen, 2021). This is supported on the general statement of the respondents:

Excerpt Interview 17 (SH 21): *I stand for innovation. Innovate something, innovation comes from a progressive mind. Be prepared, be flexible, and be innovative. These three traits will help the team no matter what challenges the time may bring.*

Excerpt Interview 6 (SH 11): *I can recommend to other educational stakeholders to utilize the strategic intervention.*

Excerpt Interview 2 (SH 18): *School leaders should be fast thinkers, goal-driven, resilient, open to any suggestions, and decisiveness to be able to create innovative ideas.*

The excerpts above indicate the significance of innovation, strategic intervention, and key qualities for school leaders. Innovation is viewed as a progressive mindset that drives positive change. Strategic intervention is recommended as a means to address challenges in the educational context. Additionally, school leaders are encouraged to possess qualities such as fast thinking, goal orientation, resilience, openness to suggestions, and decisiveness to foster innovation within their schools.

Theme 3. The importance of creativity, innovative thinking, and embracing change in leadership, particularly in the context of implementing innovative programs and solving problems.

Amidst uncertainty, creative leaders can leverage their ability to think critically and generate unique ideas to anticipate potential scenarios and identify new opportunities. In ambiguous situations, creativity allows leaders to

make sense of incomplete information and find unconventional solutions. Moreover, in a diverse environment, leaders who embrace creativity can leverage the diverse perspectives and talents of their teams to drive innovation and problem-solving (Amabile et.al, 2008). This is evident in the responses:

Excerpt Interview 20 (HT 22): *A school leader should be creative and fast thinker so that he will be able to have an effective change in the implementation of innovative programs and come up with a variety of creative, intuitive, and common-sense solutions.*

Excerpt Interview 14 (HT 7): *I think a school leader should be creative that is the most important skills necessary in order to come an innovative idea that soon will become programs.*

The excerpts above suggest that the significance of creative thinking, adaptability, and benchmarking in the context of school leadership. Creative thinking enables school leaders to devise innovative solutions and drive positive change. Adaptability and openness to learning from other leaders' experiences are crucial for addressing current problems effectively. By combining these qualities, school leaders can foster a culture of creativity and implement impactful programs.

Innovative thinking is equally critical in the VUCAD environment. Leaders need to go Innovative thinking involves strategic planning, critical evaluation of ideas, and aligning innovation initiatives with organizational goals and resources. By promoting a culture of innovation, leaders can create an environment where creative ideas can be implemented effectively, leading to organizational success (Shayah et al, 2019) This is supported in the experienced as response by the respondents:

Excerpt Interview 7 (HT 25): *To be innovative you can formulate your own or it can be a combination of all ideas.*

Excerpt Interview 25 (HT 14): *There are 3 qualities that school leaders should have to embodies strategic thinking and innovation; goal driven, resilient and creative or innovative.*

The excerpt above infers that the importance of creativity, flexibility, and goal orientation in fostering innovation within educational leadership. Being open to formulating new ideas or combining existing ones can contribute to innovative approaches. Additionally, the qualities of being goal-driven, resilient, and creative are essential for school leaders to promote strategic thinking and innovation in their roles.

Embracing change requires leaders to have a flexible and open mindset that views change as an opportunity for growth and improvement. By embracing change, leaders can foster a culture of continuous learning and adaptation within their organizations, which is crucial for success in the VUCAD environment (Center for Creative Leadership, 2023). This is true in the statement of the respondents:

Excerpt Interview 10 (HT 27): *Innovative- the school leader finds changes made to make a process more efficient. The more important thing there is in every transformation.*

Excerpt Interview 26 (HT 11): *Embrace new things and be a positive thinker.*

Excerpt Interview 13 (HT 21): *There are 3 qualities that school leaders should have to embodies strategic thinking and innovation; goal driven, resilient and creative or innovative.*

The excerpts above emphasize on the importance of school leaders being innovative, open-minded, goal-oriented, resilient, and creative. These qualities enable leaders to drive change, improve processes, and foster a culture of continuous improvement within their schools.

Implementing innovative programs and solving problems in the VUCAD environment demands leaders who possess and demonstrate creativity, innovative thinking, and a proactive approach toward change. As stated by Drucker (2014), "Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an

opportunity for a different business or a different service." Therefore, leaders who prioritize and cultivate these essential skills are better positioned to navigate the challenges of the VUCAD environment and drive organizational success.

Theme 4. The importance of strategic planning, execution of strategy, and innovation management practices as benchmarks for schools and school leaders.

Strategic planning, execution of strategy, and innovation management practices play crucial roles as benchmarks for schools and leaders. Strategic planning is important because it enables schools and educational institutions to create a unified vision and direction for the future. It helps align the efforts of all stakeholders towards a common goal, providing a roadmap for decision-making and resource allocation (Bowman, 2019). This is evident as the respondents shared the same responses:

Excerpt Interview 27 (HT 9): *With my best strategic thinking and innovation management, the strategic planning and execution of that strategy may be the only thing I can use as a benchmark for all schools.*

Excerpt Interview 11 (HT 30): *The strategic planning and execution of that strategy is perhaps the one aspect that I can use as a benchmark for all schools with my most effective strategic thinking and innovation management.*

The excerpts above stressed that employing effective strategic thinking and innovation management practices can serve as a benchmark for other schools, indicating its importance in achieving positive outcomes and success.

5. Adopting the most Efficient Strategic Thinking and Innovation management in their Respective Schools

There are five (5) theories formulated in the study based on themes emerged in the qualitative part of the study. These are ecological theory, innovation and strategic management theory for positive change, innovation leadership theory, innovative leadership theory, and strategic innovation leadership theory.

A. Ecological Theory

Ecological theory emphasizes the importance of understanding the interactions between individuals, organizations, and the environment in which they operate. In the context of a school, this includes understanding the complex web of relationships between students, teachers, parents, community members, and the larger societal and economic forces that shape the education landscape.

B. Strategic Management Theory for Positive Change

Leih et. al, (2018) argue that strategic management theory can help school leaders develop innovative and adaptive practices in response to the challenges and opportunities of the VUCAD world. They suggest that strategic management theory can help school leaders identify emerging trends and opportunities, develop clear visions and missions, allocate resources effectively, and evaluate the impact of their strategies on student outcomes.

C. Innovative Leadership Theory

Innovative leadership focuses on promoting creativity, experimentation, and adaptability in response to rapidly changing circumstances. In education, innovative leadership can help school leaders develop new and effective strategies for teaching and learning, and adapt to the evolving needs and expectations of students, parents, and the community.

D. Innovation Leadership Theory

Innovation Leadership Theory is a leadership model that emphasizes the importance of creating a culture of innovation within an organization. In the VUCAD world, this type of leadership is becoming increasingly important for school leaders who are seeking to promote positive change and adapt to the rapidly changing educational landscape.

E. Strategic Innovation Leadership Theory

The Strategic Innovation Leadership Theory is a leadership model that emphasizes the importance of combining strategic thinking and innovation to drive positive change within an organization. In the VUCAD world, school leaders are facing unprecedented challenges that require them to be both strategic and innovative in their approach to leadership. The Strategic Innovation Leadership Theory provides a framework for school leaders to navigate these challenges and create a culture of innovation and positive change within their schools.

6. Conclusion

Based on the statistical and qualitative results of the study, the following conclusions were drawn:

- Factors such as gender, religion, marital status, experience, qualifications, and experience in strategic and innovation management have the most bearing on the discussion of school heads in VUCAD.
- Strategic thinking and planning skills, regardless of what they are in any given context, are considered vital to the discussion.
- Innovation management practices, regardless of what they are in any given context are considered vital to the organization, specifically as a leadership skill.
- Not all socio-demographic components contribute to the strategic thinking and innovation practices in the VUCAD world. Nationality and religion have significant variations.
- The most relevant and general effects of strategic thinking and innovation management practices are all correspondingly significant and functional to the needs of the VUCAD world.
- The respondents' experiences coincide with relevant theories such as ecological theory, innovation and strategic management theory for positive change, innovation leadership theory, innovative leadership theory, and strategic innovation leadership theory. This implies the current study's relevance to the general school head population.

Recommendations - Based on the findings and conclusions presented, the following recommendations are suggested:

- Consideration of socio-demographic factors as a vital element in leading an educational enterprise: Organizations and policymakers should consider the socio-demographic profile of school heads, including factors such as gender, age, marital status, experience, qualifications, and experience in strategic and innovation management, as these factors can influence leadership practices, decision-making styles, and ability to adapt to change and technology in educational settings.
- Importance of strategic thinking and planning skills: Strategic thinking and planning skills are crucial for effective leadership, particularly in VUCAD environments. Educational leaders should prioritize the development of strategic thinking skills to navigate complex and changing contexts effectively.
- Competency in innovation management: The respondents' competency in various aspects of innovation management may contribute to their overall success in managing innovation processes. Organizations should continue to invest in building innovation management skills among educational leaders to foster a culture of innovation in educational settings.
- Organizations should acknowledge that socio-demographic factors, such as gender, religion, and nationality, may not solely shape strategic thinking abilities. They should promote gender equality in leadership and consider the influence of diverse cultural contexts in recruitment, selection, and training processes. Qualifications and experience alone may not determine strategic thinking skills. Factors like

experience, personality traits, problem-solving abilities, and decision-making skills should also be recognized. Adopting a holistic approach and investing in intercultural training can enhance the effectiveness of educational leaders in diverse environments.

- Stakeholders should be mindful of the effects of both strategic thinking and innovation practices, as these are determinants of the success of academic institutions in the VUCAD world.
- The academe must continually reverse the current stakeholders' experiences while placing them side by side with the existing theories to stay relevant in the VUCAD world.

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