



## LEADERSHIP COMPETENCIES FOR THE VOLATILE, UNCERTAIN, COMPLEX AND AMBIGUOUS (VUCA) ENVIRONMENT: CHALLENGES TO HIGHER EDUCATION

**ThankGod Amukele Mahel, Ph. D.**

Academic and Research Consultant (Self-employed)

2017t1321@pwu.edu.ph

Article history:	Abstract:
<p><b>Received:</b> April 10<sup>th</sup> 2021 <b>Accepted:</b> April 26<sup>th</sup> 2021 <b>Published:</b> May 24<sup>st</sup> 2021</p>	<p>Contemporary educational environments, especially higher education institutions face extreme turbulent environments characterized by high levels of challenges necessitated by economic, cultural, social volatility, uncertainty, complexity, and ambiguity (VUCA).</p> <p>Therefore, the need to explore contemporary leadership competencies for the volatile, uncertain, complex, and ambiguous (VUCA) challenges to higher education environment. The quantitative method, descriptive and correlational research design, and random sampling techniques were used to steer the study. The study findings showed that all the leadership competency dimensions team-building and collaboration had the highest overall mean score, whereas risk and conflict management got the lowest overall mean score.</p> <p>Furthermore, institutional teaching strategies had highest overall mean score, while institutional challenges got the lowest overall mean score. Moreover, the test of variance (ANOVA) findings showed that team-building and collaboration had significant mean differences when grouped and compared according to the schools. However, communication, adaptability, motivation, self-confidence, tech-savviness, and risk and conflict management dimensions had no significant differences.</p> <p>In addition, the ANOVA analysis results revealed significant mean differences on institutional cultural values. Conversely, there were no significant differences on teaching strategies, students' diversity and institutional challenges. Also, Pearson r bivariate correlation indicated positive and significant relationships between leadership competencies and institutional teaching strategies, institutional cultural values, and students' diversity except for teachers' institutional challenges which got a negative significant association.</p> <p>The implication of the study findings is that higher education leaders need to be aware that having a head knowledge of a cluster of skills is insufficient for VUCA challenges. Therefore, meeting institutional challenges of instructors and professors may position them in fighting the present challenges of volatile, uncertain, complex, and ambiguous economic, social, cultural, and political instability impacting higher education institutions.</p>

**Keywords:** Leadership Competencies, Volatility, Uncertainty, Complexity, Ambiguity

### INTRODUCTION

Contemporary educational environments, especially higher education institutions face extreme turbulent environments characterized by high levels of challenges necessitated by economic, cultural, social volatility, uncertainty, complexity, and ambiguity (VUCA).

For instance, Siu and Garcia (2017) submits that technology revolution has transformed global higher education by providing a global interconnectedness that restructured educational, social, economic, and cultural life. Moreover, research by Kornelsen (2019) suggested that western workplaces are currently experiencing a leadership challenge that relates to conflict between the senior leaders in organizations and the so-called millennial generation (Kornelsen, 2019).

As if that is not enough, Henley Business School (2015) and Harvard Business Publishing Service (2013) found that lack of leadership capacity is frequently a global workforce challenge with only 32% of 800 corporate respondents affirming that they have not either the right leadership or the capacity to develop the right leaders at multiple levels in the organization (Carvan, 2015).

Although, it's difficult to deny that in a VUCA environment everything are interconnected and spreads like spill over oil. Illustratively, Petrie (2015) contends that what happens in Cyprus, Brussels, or China today impacts what happens in New York, Singapore, or Sydney, and the Philippines tomorrow. This hypothesis is confirmed by the recent COVID-19 crisis that is engulfing human lives and sapping national economies.

Apparently, we are living in an increasingly volatile, uncertain, complex, and ambiguous (VUCA) world that educational system is not invulnerable to the challenges. It is practically true to incite that most leaders do not face the challenge of workload, but that of navigating and making sense of their working environments which are growing increasingly complex, and for many, that complexity is overwhelming their capacity to cope (Petrie, 2015).

Moreover, Millar, Groth and Mahon (2018) argues that while research has discussed the four VUCA elements independently, interaction and integration has been lacking. An attribution to this problem was indicated to be that VUCA is both an outcome of disruptive innovation and a driver of it and also, frequently VUCA is used as an excuse to avoid planning and action (Millar et. al. 2018). For example, Millar et. al. (2018) contended that research by Ettl and Bridges (1982) and by Price (1982) looked at uncertainty as related to the larger organizational environment, but took no account of the effects of complexity and ambiguity (Millar et. al. 2018).

However, higher education leadership competencies which differ from leadership skills challenges are not peculiar only to westernized countries. In the context of educational leadership in the Philippines, Alegado (2018) found that the concept of teacher leadership still struggles to thrive in school organizations. Also, they found that the factors causing the challenges were due to the traditional 'principal-oriented' nature of leadership that is heavily entrenched to its system, the lack of leadership training, and the teacher classification system that they follow (Alegado, 2018).

Besides, Alegado (2018) and other scholars offers that contributors to leaders' competencies dilemma emerges from the adoption of K-12 educational system which many Filipino scholars in the past have identified problems in the K-12 curriculum implementation, teacher shortage, curriculum unsustainability, lack of school resources and infrastructure, and incoordination of different bureaucratic bodies (Alegado, 2018; Calderon, 2014; Combalicer, 2016).

Nevertheless, while Alegado (2018), Calderon (2014) and Combalicer (2016) submitted challenges of education leadership dilemmas, they were arguing in respect to the basic education system which differs greatly from higher education system. Likewise, as Kornelsen (2019) reported of western workplaces experiencing leadership challenge of conflict between senior leaders and millennial, that does not reflect what is happening in the developing countries especially, it does not indicate what VUCA challenges are permeating or impacting higher education leadership cases in the Philippines.

Consequently, there is glaring empirical gaps that needs to be closed because how leaders in higher education institutions' leadership competencies are portrayed especially with regards to the VUCA challenges trammeling educational terrain were not discussed in the past studies. Therefore, the significance of this study which explored leadership competencies for a volatile, uncertain, complex, and ambiguous environment, challenges to higher education institutions.

It follows that in order to close the existing gaps in the extant literature on issues relating to how leadership competencies in a VUCA environment are conceptualized and applied in higher education institutions, this study firstly integrated the four elements of VUCA in this study as suggested by Millar et al. (2018). Secondly the paper looked at leadership competencies of higher education institutions in order to help in the generalization of past studies conducted in the western hemisphere and those centered on basic education in the Philippines (Alegado, 2018; Combalicer, 2016).

Thirdly, as to gain a broader understanding of the constructs, the quantitative research approach, descriptive and correlational research design and random sampling technique was used in the study.

### **PURPOSE OF THE STUDY**

Generally, the purpose of the study is to determine leadership competencies for the volatile, uncertain, complex, and ambiguous (VUCA) environments.

Specifically, the aimed to:

1. Determine perceptions of respondents on leaders' leadership competencies in terms of team-building and collaboration, communication, adaptability and motivation.
2. Determine significant differences in the rating of the respondents on the leadership competencies when grouped by school.
3. Determine significant relationship between leadership competencies and VUCA environment identified factors

### **REVIEW OF RELATED LITERATURE**

#### **Conceptualization of the study**

The higher education leadership competencies model (HELCEM) for a VUCA environment in the current study was developed based on different types of models that had guided management and leadership in corporate organizations and educational schools.

Consequently, the higher education leadership competencies model for a volatile, uncertain, complex, and ambiguous environment proposed for this study encompassed seven main components as the predictor factors. These include team-building and collaboration; communication; adaptability; self-confidence; motivation; tech-savviness; risk and conflict management. Whereas institutional teaching strategies, institutional cultural values, students' diversity (inclusivity), and institutional challenges teachers encounter constitutes the criterion factors.

### **VUCA**

VUCA-volatility, uncertainty, complexity, ambiguity, terms coined for the military world also describes today's global higher education world (Lemoine, Hackett, & Richardson, 2017; Forsythe, Kuhla, & Rice, 2018). Accordingly, researchers submitted that higher education leaders in the VUCA world must be activists and innovative where work factors such as adaptability and flexibility are necessary (Breen, 2017; Diefenbach & Deelman, 2016).

Apparently, it follows that VUCA leaders confront societal, financial, management, and leadership problems (Chawla & Lenka, 2018; Mack, Khare, & Burgartz, 2016). Subsequently, Elkington, Steege, Glick-smith, and Breen (2017) trumpeted that leaders needs to build organizational capacity through new leadership and management theories and application where they must understand society's often contradicting ideas of equity, equality, productivity and diversity (Stewart, Khare, & Schatz, 2016) which contributes to VUCA challenges in organizations.

### **Volatility**

Unfortunately, the world is facing a high prevalence of turbulence or unexpected pandemonium that increase in intensity and rendering social and environmental hardships to many people and adversely impacting organizations like higher education institutions. Furthermore, the gravity of economic volatility is felt on the price of goods and services inflation which the cost of maintaining employees' welfare is unpredictable due to instability in the national and global economy.

Likewise, volatility has shifted the mission of global higher education to ensure that everyone will be able to adapt to changes in the global labor markets and continue to be employable (Ansell, 2017). Similarly, Carillo (2016) study found that higher education has experienced the emergence of additional colleges either in the form of for-profit universities or other universities which has brought increased volatility to what had been a stable market (Carillo, 2016).

Moreover, turbulence in global higher education world such as the rise of the digital economy, connectivity, trade liberalization policies around the world, as well as increased global competition and innovation (Brodnick & Gyskiewicz, 2018).

### **Uncertainty**

The gravity associated with a lack of stability in the economy and the number of enrollees in our institutions does not allow leaders to look to the past for guidance in how to predict future events (Cook, 2015). As an example, budget reductions have led to the loss of faculty and the specter of increasing performance demands for student success.

Though, Bennett and Lemoine (2014) pointed out that volatility creates a situation where despite a lack of information; the event's fundamental cause and its effects are known. This implies that change is possible but not always a given. An example could be a university lowering its cost of tuition to attract more students.

### **Complexity**

The concept of complexity or the presence of a multitude of possible or difficult to understand causes and other factors both internal and external to the organization are involved in solving problems (Baltaci & Balci, 2017). However, the additional layer of complexity, paired with heightened turbulence, and a lack of easily understanding the past predictor increases the difficulty in making good decisions (Moodie, 2016).

Nevertheless, global higher education organizations are increasingly less autonomous; though higher education organizational environments are increasingly complex; and, higher education organizations are increasingly dependent on technology (Lemoine & Richardson 2019) which higher education leaders can link-up to achieve success. However, complexity can be said to create uncertainty because of the sheer volume of possible interactions and outcomes (Arena & Uhl-Bien, 2016). Other examples include the rules and regulations for higher education in foreign countries or even states with their own unique laws and regulations, cultural values, or educational regulations (Stafford & Taylor, 2016) which are capable of complicating the higher education administration and operations.

### **Ambiguity**

The notion of ambiguity occurs when there exists a lack of clarity that surrounds an event and its meaning or the causes behind the things happening which are unclear and difficult to understand or fathom a probable solution. Apparently, ambiguity in VUCA is the inability to accurately identify threats and opportunities before they become devastating (Stensaker, Frolich, Huisman, Waagene, Scorat, & Pimentel Botas, 2014).

As an example, the twin challenges of escalating information technology costs and the need to avoid technological obsolescence is daunting for global universities in the VUCA world (Hackett, Lemoine, & Richardson, 2017). As a result, there is the surge of a high degree of demand that contemporary higher education institution leaders have to approach leadership from a lateral level to include teachers in their dictionary and in the decision-making process. As a matter of fact, Cranston (2013) added that educational leaders "need to position themselves as proactive reflexive leadership professional and not as managers responding to others' agendas and complying with external mandates.

### Team building and collaboration competency

The need for higher education leaders purposed goal to create an institutional environment and climate where teamwork and collaboration across colleges and departments is indispensable. The significance of team building in our contemporary and future higher education leadership and management scaling at the rate of uncertainty and complexity of cultural and social challenges cannot be neglected higher education school intends to achieve school vision and mission goals.

For instance, in the circular business world Lilian (2014) found that globalized markets have made leaders search for new solutions to meet the needs of customers. In consequence, corporate business organizations strive for competitive advantages through downsizing, subcontracting, joint ventures, strategic alliances, and other collaborative and network-based alternatives which are typically facilitated by team leaders (Lilian, 2014).

Likewise, team-building and collaboration is not meant for corporate public organizations alone but higher education leaders or managers need to have leadership competencies that include team-building and collaboration skills in order to make a reasonable in-road in a VUCA environment.

In support of that notion, Jhunthai (2015) added that school leaders need to acquire team-building leadership skills to making high-performing teams and that those (schools) with members whose skills, attitudes, and competencies enable them to achieve team goals are imperative (Jhunthai, 2015).

Conversely, Kumso (2015) reported in his work that in many schools the school administrators and teachers work in isolation, school administrators try to accomplish tasks alone, and the responsibility for implementing new ideas falls on the individual. Consequently, team leaders and members need to be mindful of the potential team dysfunctions including social loafing and group-thinking and interactions to collaborate effectively (Schermerhorn, 2015; Lunenburg, 2015).

Furthermore, Reevy, Chamberlin, and Stein (2014) study on the institutional learning outcomes of collaboration, teamwork, and leadership (CTL) at California State University revealed that employers highly valued the attributes and that students reported frequent exposure to these skills. Nevertheless, it was noted that the literature review revealed the growing importance of collaboration, teamwork, and leadership in education needs more work to identify CTL pedagogical best practices and instruct faculty on their use (Reevy et al. 2014).

Also, Reevy et al. (2014) found that 67% of employers stated that they wanted colleges to place more emphasis on teamwork and collaboration in diverse group settings. In the same survey, it was discovered that 74% of employer respondents stated that expecting students to develop the skills to conduct research collaboratively with their peers would be a new approach to learning that had the potential to help students succeed (Hart Research Associates, 2013 in Reevy, 2014).

Conversely, a study conducted by PayScale, revealed that 36% of recent graduates have a deficient team and interpersonal competencies (Dishman, 2016). Relatedly, a study by Kaplan et al. (2016) showed that companies also demonstrated the inability to manage and arrange teams because only 21% of executives believed their company holds expertise in designing cross-functional teams (Kaplan et al., 2016).

Stitching these extant literature mixed findings shows a compelling need to deploy psychologically sound, empirically tested ways to boost team building, effective teamwork, and more specifically, team competencies in higher education institutions leaders. Consequently, the inclusion of team building and collaboration in the study because the researcher found team building and collaboration as imperative for higher education management and leadership.

### Communication competency

Sincerely speaking, considering the challenges posed by VUCA in our higher education institutions, leaders today must cope with an overwhelming amount of information in a short amount of time if they must lead effectively. But the correct interpretation of the information is not always possible and new information is constantly presented. This concept of communication includes oral, written, and nonverbal which can be demonstrated in the effect of the leaders' work during instruction followed by written communication in the form of observation notes and even further by the leaders and supervisors' personal modeling of literacy behaviors and practices.

For instance, Williams (2017) found that school principals' emotional-social competencies involve interactions one-on-one in person with staff, with groups of staff, and in written communication and that all of which demonstrate competencies that appear to be most evident as strengths in the principal's performance. Similarly, Akinfolarin (2017) posited that for effective staff human resource management to emerge, the school administrators must develop good competencies in staffing, orientation, communication.

These factors according to Horney and O'Shea (2015) require higher education institutions to respond quickly to the changes (Qureshi & Nair, 2015). Collectively, they also require the institutions to anticipate the changes and to adapt to them quickly and efficiently by having effective strategies and practices already in place (Richmond, 2015).

However, Saglam and Aydogmus (2017) study on communication competence of school directors working in various secondary schools in the city of Usak, revealed that in general, the teachers think that the school directors' communication competence was high. Also, it was disclosed that school directors' communication competence for the dimensions of understanding, empathy, social comfort, and support was mostly positive (Saglam et al. 2017).

Also, Fashiku (2016) investigated the influence leaders' communication pattern has on lecturers' job performance in Kwara State Colleges of Education, Nigeria. The results of the investigation revealed that a significant relationship existed between leaders' democratic communication patterns and lecturers' performance.

Nonetheless, leaders' autocratic patterns did not significantly relate to lecturers' performance, and the leaders' laissez-faire pattern was not significantly related to lecturers' performance (Fashiku, 2016). But in general, it was found that leaders' communication patterns significantly related to lecturers' performance (Fashiku, 2016). The implication of these findings suggests that leaders should as much as possible engage in democratic communication patterns in order to facilitate the attainment of the stated aims and objectives of the institutions.

Furthermore, Mikkelson, York, and Arritola (2015) study found out that effective and appropriate communication were both positively related to satisfaction, motivation, and organizational commitment. Moreover, it was observed that task and relations-oriented leadership styles were both positively related to employee satisfaction, motivation, and organizational commitment (Mikkelson et al. 2015). Likewise, Mikkelson et al. (2015) study findings showed that effective communication and relations-oriented leadership style were the best predictors of satisfaction, motivation, and organizational commitment.

The literature review demonstrated the positive and negative effects of leaders' communication competencies on employees' work experiences and performance. Consequently, it could be inferred that leaders' communication competencies are significant and can influence teachers' work performance in terms of instructional delivery, attendance to classes, notes writing, and record-keeping. The implication is that competent leaders who supervise, lead, and communicate effectively with their teachers will witness the improved commitment, engagement, satisfaction as well as the performance from teachers.

Hence, leaders should embrace tapping on the relevance of effective communication strategies as an educational environment, diversity in the workforce, and students' population become more complex and volatile in order to able to communicate objectives and role expectations to teachers and be able to motivate teachers through their leadership acumen.

### **Adaptability Competency**

Adaptability is crucial for organizational effectiveness and efficiency in this ever-changing precarious VUCA environment. Pieces of training are among the tools to enhance both leaders' and employees' adaptability. Besides, in today's cultural and social environment, people find VUCA a challenge to be invited, while others might perceive uncertainty as threatening.

For example, the uncertainty about who a stranger is and why they are approaching you is likely to be experienced very differently if you are walking through a public park in the middle of the day versus walking through the same park in the middle of the night. Whether you are alone or in a group might also impact your experience.

In the same way, an increasingly VUCA world can be perceived as either challenging or threatening to different people in different contexts. However, one solution to overcoming both threats and challenges is to have the needed competencies, safeguards, and tools to adapt to new environments as leaders.

For example, Behrens et al., (2007) as cited in Laukkonen Biddel and Gallagher (2018) suggested that "people who are less anxious about change (volatility), unpredictability (uncertainty), information overload (complexity), and conflicting mental models (ambiguity) function better in changing environments than those who show high anxiety (Behrens et. al. 2007)."

Subsequently, Laukkonen et al. (2018) posited that the challenge for the future of education, training, and work, will therefore, be to leverage the naturally curious and exploratory nature of people and develop social safeguards for those who are more directly or negatively impacted by the threatening aspects of VUCA.

A quantitative study by Muluneh (2017) investigated the impact of change-oriented training on employees' adaptability objectively (positivist perspective). Accordingly, it was found that training can significantly influence employees' meaning-making ability about organizational changes if properly used, which in turn is fundamental to develop employees' adaptive behavior and skills. However, training was not found as contributing to enhancing the adaptability of the employees, because pieces of training were given indiscriminately and skill gaps among employees were ignored (Muluneh, 2017).

Conversely, Wainaina, Kabare, and Mukulu (2014) study indicated that resistance is a result of the anxiety and frustration of employees. Thus, dynamic leadership is necessary to coach, reward, communicate, motivate, and promote teamwork and collaboration to build adaptive capacity (Wainaina et al. 2014). Similarly, Parent and Lovelace (2015) posited that the value of positive organizational culture and job engagement are indispensable for individual employees' adaptability.

Also, Qureshi's (2019) findings indicated that employee adaptability & responsiveness and employee skills, knowledge, and abilities mediated the relationship between employee learning commitment and employee self-efficacy. Whereas Collie and Martin's (2017) study findings showed that perceived autonomy support was positively associated with teachers' adaptability, and both constructs were positively associated with teachers' well-being and organizational commitment.

Consequent to the above empirical findings, it becomes pertinent that higher education institutional leaders should be aware of the uncertainty and complexity of the university and its colleges' challenges can effectively be achieved if they model adaptability behaviors by being flexible and collaborating with other leaders within and outside their work setting.

This is important because according to Heifetz, Grashow, and Linsky (2009) as cited in Mrig and Sanaghan (2017), "the organizational adaptability required to meet a relentless succession of challenges is beyond anyone's current expertise and no one in a position of authority, has been here before." Deducting from that motivational

arouser is the urgency for leaders to respond to the calls for accountability and adaptability which has reached all the way to the castled halls of elite institutions (Nicotea & Petel, 2016).

Besides, Wainaina et al. (2014) announced that organizations are operating in an increasingly volatile and complex environments and are in a state of constant changes. Also, rapid technological advancement, cultural, political, and environmental changes increase the need for organizational adaptation (Parent & Lovelace 2015; Ployhart & Bliese 2015; Wainaina et al. 2014). Therefore, the need to determine the current higher education leaders' adaptability competence as to know where help is needed for educators to embrace adaptability resiliently.

### **Motivation in uncertain and volatile situations**

The life of a higher education modern-day leader clearly is not easy. Apparently, they need to lead and motivate a diversified group of people, work across organizational boundaries, improve efficiency, and achieve growth in order to position the organization against and above VUCA challenges as they emerge. Externally, they face a complex and globalized environment; they have to manage government requirements, keep up with competitors, and meet the expectations of other stakeholders.

Besides, within this global environment, there are many cultural considerations leaders must face to become effective. Therefore, global higher education institutions must be alert in embracing motivation with a high level of teachers' affinity. Especially, when the higher education institutions board of directors are looking for ways to expand their markets and increase the retention of those students admitted (Kruss, McGrath, Peterson, & Gastrow, 2015).

However, Marshall, Mathys, Ruge, et al., (2016) found that the boost of energy co-occurs with changes in neuromodulators (dopamine, noradrenaline, and acetylcholine). Acetylcholine is believed to relate to expected uncertainty or situations where predictions are unreliable. Acetylcholine has also been linked to increased effort to learn about an uncertain environment, suggesting that unhelpful top-down models are discarded and more focus is given to the current environment via sensory data (Marshall et al., 2016).

Sadly though, Peters, McEwen, and Friston (2017) suggested that the overload can result in high blood pressure, cognitive dysfunction, depressed mood, accelerated disease progression, and permanent changes in brain architecture, minimizing the organism's capacity to deal with uncertainty in the future (Peters et al. 2015).

Nevertheless, deducting from the perspective of the predictive brain, when an environment is predictable, then previous decisions are a good guide for future behavior. Conversely, in uncertain or volatile environments, previous decisions, and models underlying those decisions, may no longer be effective (Laukkonen et al. 2018).

Consequently, a healthy approach in these circumstances is to adjust the weighting of previous assumptions and allow future decisions to be guided by feedback from the environment. This is where the relevance of a leaders' motivation competency comes to feature in order to cushion the psychological stress which may lead to impulsive decision making of leaders and teachers against the goals and objectives of the institution especially when faced with VUCA challenges.

For example, Blaskova, Majchrzak-Lepczyk, Hriníková, and Blasko (2019) found that higher financial evaluation and creating good relationships were the most desirable motivation measures. Likewise, the study results also emphasized a discrepancy between the opinions of university managers versus the opinions of scientists and teachers regarding effective motivation. Consequently, it was observed that sustainable academic motivation was conscious behavior; the starting point of behavior; the accelerator of behavior and development; the process; and the resultative level of all motivational efforts and powers at higher-education institutions (Blaskova et al. 2019).

Conversely, the research also found that the competence of the school principals positively affects the teachers' work motivation and that the principal's competence positively affects teacher performance (Arman et al. 2016). In like manner, Rantesalu and associates (2016) reported work motivation as having a negative and insignificant effect on employee performance.

Scaling from the perspective of work motivation philosophy as an innate feature affected by the situation, (surroundings and external stimuli); mood, (the organism's internal state of mind and emotion); goals, (behavioral goals, purpose, tendency); and tools, (for goal achievement), modern higher education leaders cannot afford to eclipse motivation from their dictionary, rather it's a gem that must be prioritized. Also, these findings suggested that special attention is required to improve the social personality as well as research and development of the school supervisor's adaptability competency.

### **METHODOLOGY**

The chapter included the research design, respondents of the study, sampling technique, research instruments, data gathering procedure and statistical treatment, scales validation, and reliability testing, and ethical considerations. According to Kothari (2004) as cited in Chelimo (2017) research methodology is the systematic, theoretical analysis of the procedures applied to a field of study.

### **RESEARCH DESIGN**

In this study, the quantitative research method was used. According to Kowalczyk (2016), quantitative research methods are those methods in which numbers are used to explain findings. Using numbers implies that the researcher has a good knowledge of both descriptive and inferential statistical parameters, such as the capacity in statistical calculations and interpretations of standard deviations, ANOVA, correlations, etc.

Likewise, according to the Center for Research Quality (CRQ) (2015a), the quantitative research method's general purpose is to explain, predict or investigate relationships, describe current conditions, or examine possible impacts on specified outcomes. Consequently, by virtue of the method, questionnaires were used as a medium for data gathering.

Philosophically, the quantitative research method is embedded in positivism. In positivism research studies, the role of the researcher is limited to data collection and interpretation in an objective way. Chosen methods are applied mechanically in order to operationalize theory or hypothesis. While the application of methodology involves the selection of samples, measurements, analysis, and reaching conclusions about hypotheses.

Whereas the research design was both the descriptive and correlational research design. Burns and Grove (2003) as cited in Chelimo (2017) define research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings.

Similarly, Kothari, (2004) as cited in Chelimo (2017) also defines it as the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. He adds that the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement, and analysis of data (Kothari, 2004).

The descriptive design is preferred since it allows the use of quantitative or qualitative elements within the same study. It also often uses visual aids such as graphs and charts thus interpretation and presentation of data are simplified. Whereas correlations indicate the relationship between paired scores (Ary, Jacobs, Sorensen, & Walker, 2014), and in the correlational study, the goal is to explore relationships between independent and dependent research variables (Creswell, 2005).

Consequently, a correlational research design was appropriate for this study because data could be statistically analyzed to identify whether or not higher education leadership competencies influence directly or indirectly respondents' institutional teaching strategies, institutional cultural values, students' diversity, and the challenges teachers encounter. More specifically, ANOVA and Pearson  $r$  (Bivariate) as a type of correlational procedure that evaluates mean differences and relationships among several variables were used (Ary et al., 2014).

### **RESPONDENTS OF THE STUDY**

The respondents of the study were university teachers (instructors) from selected South Manila Education Consortium member universities operating within Taft Avenue, National Capital Region (NCR) Manila, Philippines

### **SAMPLING TECHNIQUE**

In this study, the researcher used the simple random sampling technique which gives equal chances to the respondents to be included in the study. In a simple random sampling technique, according to Alvi (2016), the population must contain a finite number of elements that can be listed or mapped. Likewise, the population must be homogenous and every element contains the same kind of characteristics that meets the described criteria of the target population (university teachers within a geographical setting).

The researcher used the lottery method for the selection of respondents whereby the researcher first gave a number to each element and then numbers were individually written on slips of paper. After that, the slips were put and mixed thoroughly in some bags. Then the decided number of slips was drawn out of its bag. This technique was used because it helped to close every possible study locale and respondent's selection biases

### **SAMPLE SIZE**

This includes the number of elements to be included in the study. In this study, the total sample size was determined through the use of the Krejcie and Morgan (1970) table for determining sample size. The respondents were one hundred and eighty-four ( $N=184$ ) that took part in the study. Out of the one hundred eighty-four respondents, eighty-two (44.6%) were male while one hundred and two (55.4%) were female

### **RESEARCH INSTRUMENT**

The research questionnaires were researcher-developed from the literature review and theoretical conceptualization in relation to the study indicators. The first part was on the leadership competencies which include teambuilding and collaboration, communication, adaptability, motivation in uncertain and volatile situations, self-confidence leading in complex and ambiguous situations, tech-savviness (digital), and risk and conflict management. These indicators were predictive elements.

However, the second part was on the criterion indicators which include institutional teaching strategies, institutional cultural values, students' diversity, and institutional challenges encountered by teachers. The questionnaires were piloted with a total of thirty university teachers before it was administered to the target study respondents.

Leaders' team-building and collaboration competency was assessed with team and collaboration scale (Cronbach alpha= .939). The instrument is ten items Likert scale that measured leadership teambuilding and collaboration capabilities. While leaders' communication competency was assessed using a five-point items Liker scale (Cronbach alpha= .936). However, the adaptation competency was assessed with 6 items adaptability. The scale Cronbach alpha is 0.881.

Leaders’ motivation competency in uncertain and volatile situations competency was assessed with ten items motivation scale with Cronbach alpha of .936. The Leaders’ self-confidence leading in complex and ambiguous situations competency was assessed utilizing the confidence scale. The scale measures leaders’ self-confidence on 12 items and five-point level of agreement or disagreement with a Cronbach alpha of .972.

While Leadership Tech-Savviness (digital) Competency Scale was used to assess the leadership inclinations and activities. The scale measures school leaders’ technology competency. The overall alpha coefficients for the dimension reliability were ( $\alpha = 0.973$ ).

The risk and conflict management competency were assessed with the use of the Leadership Risk and Conflict Management Competency Scale. The questionnaire assesses risk and conflict management with 17 items on a 5-point Likert scale. The questionnaire Cronbach alpha was found to be highly reliable with a Cronbach alpha of .917.

Institutional teaching strategies were assessed with the use of the Higher Education Institutional Teaching Strategies Scale. The scales assessed teaching strategies under three themes which active learning, cognitive activation, and teacher-directed. The Cronbach alpha was .939.

Institutional Cultural Values Scale was used to measure the higher education institutional cultural values promoted by the leaders in their institutions as perceived by the teachers. The scale reliability Cronbach alpha was .917. Whereas the Students’ Diversity Questionnaire was used to assess the perceptions of teachers on how leaders and teachers embrace and promote student diversity. The scale reliability Cronbach alpha was .913.

However, the Higher Education Teachers’ Challenges Scale was used to assess the perceptions of teachers to determine the type or kind of challenges they face in the institution. The scale was 12 items on a five-point Likert rating scale and the Cronbach alpha was .930.

**DATA GATHERING PROCEDURE**

The researcher performed the following steps to gather the data needed for the study. A letter of request was submitted to the institution president through the university vice president for academic affairs asking for permission to conduct the study among their academic staff (faculty). After permission to conduct the study has been granted, the researcher then made copies of the approval letter and gave it to the college deans of each college.

This was followed by a meeting with each department chair to discuss the most convenient time to administer the questionnaire to the faculty members (teachers). Thereafter, the questionnaires were administered and retrieved within 6 weeks.

**Statistical Treatment of Data**

The following statistical tools were used in processing, analyzing, and interpretation of the data gathered.

Mean and the standard deviation was used to descriptively analyze the data while tables were used to present the findings (question 1, 2, and 6). One-way ANOVA, the analysis of variance was used to determine significant differences of participants’ ratings of the findings according to schools (questions 3 and 4).

The Pearson r correlation coefficient was used to determine the significant relationship between the dependent and independent variables (question 5). Whereas the figure was used to present the VUCA leadership competency model base on the study findings (question 7).

**Ethical Consideration**

Ethical concerns were observed and given full consideration in this study. Ethics in research is absolutely essential to safeguard the protection of life, health, privacy, and dignity of participants throughout the study.

The researcher observed proper and full disclosure of essential information about the study. In addition, the participants were informed that they could withdraw from the study at any time without penalty because of the right to autonomy and self-determination. In order to maintain the principle of anonymity and confidentiality, the personal information acquired from every participant was kept safe and maintained confidentially. No disclosure principle to any unauthorized person or people who are not involved in the study was considered paramount to maintain research integrity.

**RESULT AND DISCUSSION**

**1. Perceptions of teachers on leaders’ leadership competencies**

Table 1.1 shows descriptive statistics on the perceptions of the respondents concerning leadership team building and collaboration as practiced by their leaders in a volatile, uncertain, complex, and ambiguous environment of the higher education institutions.

**Table 1.1**  
**Mean rating on Teambuilding and Collaboration (N=184)**

S/N	Scale Indicators	Mean	SD	VI
1	He/she fosters teamwork, cooperation, and collaboration.	4.30	.851	Very High
2	He/she generates participation through coaching	4.14	.942	Very High
3	He/she fosters co-partnering among team members and interdependence	4.22	.841	Very High
4	He/she guides to reach consensus.	4.20	.916	Very High
5	He/she fosters an esprit de corps (shared group	4.21	.863	Very High



	loyalty).			
6	He/she clarifies roles, accountabilities and decision-making among team members.	4.24	.848	Very High
7	He/she delegates tasks to appropriate individuals or groups	4.25	.831	Very High
8	He/she models and encourages others to manage conflict openly and productively.	4.17	.891	Very High
9	He/she prioritizes team morale and productivity, celebrating team accomplishments.	4.23	.826	Very High
10	He/she provides resources needed to reach individual and team goals (human assets, pesos, tools).	4.12	.903	Very High
Overall Mean		4.21	.750	VH

The results showed that item 1 (he/she fosters teamwork, cooperation, and collaboration) had the highest mean score of (m=4.30, SD. = .851) with a verbal interpretation of "Very High", followed by item 7 (He/she delegates tasks to appropriate individuals or groups) with a mean score of (m=4.25, SD. = .831). However, item 10 (He/she provides resources needed to reach individual and team goals (human assets, pesos, tools) had the lowest mean score of (m=4.12, SD. = .903). Nevertheless, on the whole, the findings revealed that team building and collaboration leadership competency was "Very High" with a total mean score of (m= 4.21, SD. = .750).

This finding indicates that the leaders in the higher education institutions examined in this study fostered a spirit of teambuilding and collaboration. This could be attributed to an attitude of freely sharing information, collaborating, and leveraging one another's skills and abilities productively (Reina et al. 2017). Similarly, the results were in congruence with Cross et. al. (2016) founding that "collaboration is taking over the workplace", with employees and managers reporting at least a 50% increase in the amount of time spent on team-related tasks (Reevy et al. 2014).

However, that was in contrast with Gentry et al. (2015) who found that leaders face the challenge of inspiring or motivating others to ensure they are satisfied with their jobs, how to motivate a workforce to work smarter and leading a team (Gentry et al. 2015). Besides, other researchers have observed that companies demonstrated the inability to manage and arrange teams because only 21% of executives believed their company holds expertise in designing cross-functional teams (Kaplan et al., 2016).

Moreover, as indicated by item 10 which got the lowest mean score, this implies that leaders' level of providing resources needed to reach individual and team goals such as human assets, financial resources (pesos), and other tools was in low supply. Consequently, it's relevant that higher education leaders leverage these findings by equipping employees with the necessary human, financial and material resources in order for them to perform their duties effectively especially the uncertainty and complexities associated with teaching and learning processes.

This implication for leaders in not improving this aspect of required tools and educational materials could deter teachers from collaborating with leaders. Likewise, such material inadequacy could compromise with team-members' commitment to their jobs. Apparently, in the VUCA environment, it implies that higher education leaders cannot afford to allow teachers and other employees to lack support from them considering the increasing organizational complexity and the complexity inherent in global teams which require a more holistic overarching perspective that takes context into deliberation.

**Table 1.2**  
**Mean rating on communication (N=184)**

S/N	Scale Indicators	Mean	SD	VI
1	He/she speaks openly and directly about performance problems with others.	4.13	.824	VH
2	He/she offers others specific and detailed feedback.	4.18	.809	VH
3	He/she listens to suggestions and comments and makes changes if the situation allows it.	4.23	.813	VH
4	He/she communicates the organization's values in terms of specific statements on specific issues.	4.11	.805	VH
5	He/she speaks in a compelling and articulate manner, adapting communication content and style to different audiences and venues.	4.11	.791	VH
6	He/she writes clearly, concisely and persuasively.	4.16	.814	VH

7	He/she establishes and/or uses communication systems that proactively engage key stakeholders, and rely upon a variety of appropriate channels.	4.11	.746	VH
8	He/she uses correct grammar, vocabulary and a tone that is appropriate to the message and audience.	4.18	.774	VH
9	He/she listens and pays close attention to team members in their own work space where they feel most comfortable.	4.18	.861	VH
10	He/she avoids interrupting the speaker until the end of the communication.	4.19	.857	VH
<b>Overall Mean</b>		<b>4.16</b>	<b>.673</b>	<b>VH</b>

The results showed that item 3 (He/she listens to suggestions and comments and makes changes if the situation allows it) got the highest mean score of (m=4.23, SD. = .813) while item 10 (He/she avoids interrupting the speaker until the end of the communication) was the second item with a high mean score of (m=4.19, SD. =.857). However, items 4, 5, and 7 had the lowest mean score of (m=4.11) respectively. But in totality, the results demonstrated that leadership communication competency had a mean score of (m=4.16, SD. = .673) with a verbal interpretation of "Very High".

These findings reveal that the leaders very highly listen to suggestions and comments and make changes if the situation allows it based on teachers' suggestions. Also, the finding indicates that the leaders were versed with oral, and written communication competencies (Saglam et. al. 2017; Üstüner et al. 2014). The results were buttressed by Akinfolarin (2017) who found that for effective staff human resource management to emerge, school administrators must develop good competencies in staffing, orientation, communication.

Nevertheless, the leaders need to improve on how they communicate the organization's values in terms of specific statements on specific issues and also adapting communication content and style to different audiences and venues. This is pertinent counting on the ambiguities and complexities of higher education environments and challenges associated with the communication. The implication of the findings is that communication is important to factor in the effective leadership of schools and the creation of non-stressful work culture (Salazar, 2008 as cited in Ibrahim, 2014).

Hence, the findings suggest that the higher education institution leaders should continue in upholding the very high level of communication with teachers and other employees. Also, higher education leaders should model communication systems that proactively engage key stakeholders, and rely upon a variety of appropriate channels such as email, phone calls, and social media networks like Facebook, WhatsApp which makes communication more affordable through the availability of internet connection.

Ostensibly, human and institutional processes, especially in a VUCA environment, leaders' timely delivery, and sharing of information from top management like the board of regents and government departments of education are significant for decision-making. For example, Chen, Hou, Li et al. (2016) suggested that communicating with new employees on personal career goals and progress expectations as well as accommodating their goals with the organization's mission could help build a mutually beneficial relationship between leaders and employees. Therefore, higher education leaders should invest interest in making communication a life-wire in the institution if they intend to keep track of VUCA challenges that are highly unpredictable.

**Table1.3**  
**Mean Rating on Leadership Adaptability (N=184)**

S/N	Scale Indicators	Mean	SD	VI
1	He/she effectively assists others to adapt to changing environmental circumstances.	4.08	.809	VH
2	He/she responds positively to a changing environment.	4.10	.827	VH
3	He/she helps others to cope with or adapt to change and ambiguity.	4.09	.845	VH
4	He/she easily adapts between different roles and situations	4.10	.817	VH
5	He/she applies special techniques to manage situations involving stress or change.	4.14	.815	VH
6	He/she becomes frustrated when things are unpredictable.	3.39	1.177	VH
7	He/she monitors external changes and identifies emerging threats and opportunities.	4.09	.749	VH

8	He/she identifies relevant strategies, decisions, and actions for responding to external changes.	4.13	.881	VH
9	He/she identifies reasons for resistance to change and seek to convert opponents to change agents.	4.05	.848	VH
10	He/she builds optimism for a new strategy but balance it with the recognition that change will not be easy.	4.07	.866	VH
<b>Overall Mean</b>		<b>4.02</b>	<b>.673</b>	<b>VH</b>

The results show that items 1, 2, 3, 4, 5, 6, 7, 8, 9, and item 10 got mean scores ranging from (m=4.05 – 4.14) except item 6 which got a mean score of (m=3.39). However, the total findings revealed that adaptability leadership competency had a mean score of (m=4.02, SD. = .673) with a verbal interpretation of “Very High.”

This demonstrates that the participants perceived their higher education institutions leaders positively very high in adapting to changing environmental issues and effectively assists others to adapt to circumstances despite the rapid technological advancement, cultural, political and environmental challenges and its ambiguities (Parent et al. 2015; Ployhart et al. 2015; Wainaina et al. 2014). The findings also indicated that the leaders identify relevant strategies, decisions, and actions for responding to external changes which may pose a threat to the institutional goals and objectives. This could be interpreted further that the leaders were optimistic and were less anxious about change (volatility), unpredictability (uncertainty), information overload (complexity), and conflicting mental models (ambiguity) in changing environments than those who show high anxiety (Behrens et al., 2007 in Laukkonen et al. 2018).

Apparently, the findings suggest that organizational adaptability is imperative to meet a relentless succession of challenges beyond anyone’s current expertise (Heifetz, et al. 2009) as cited in Mrig et al. (2017). Nevertheless, it’s pertinent that higher education institution leaders to be aware of the uncertainty and complexity of the university and its colleges and adopt and maintain adaptability behaviors by being flexible and collaborating with other leaders within and outside their work setting in order to effectively achieve and overcome VUCA challenges.

**Table 1.4**  
**Mean Rating on Motivation Leadership competency (N=184)**

S/N	Scale Indicators	Mean	SD	VI
1	He/she make others feel good to be around him/her	4.14	.818	VH
2	The teachers and others are proud to be associated with him/her	4.09	.801	VH
3	He/she influences others to help achieve work-related task and or objective.	4.16	.814	VH
4	He/she offers encouragement to others to improve motivation and performance.	4.14	.828	VH
5	He/she stimulates people to think of problems and solutions in new and different ways	4.15	.793	VH
6	He/she provides others with new ways of looking at puzzling things.	4.09	.812	VH
7	He/she gets others to rethink ideas that they had never questioned before	4.03	.799	VH
8	He/she helps others find meaning in their work.	4.14	.790	VH
9	He/she provides appealing images about what teachers can do	4.11	.784	VH
10	He/she express with a few simple words what we could and should be done.	4.12	.841	VH
<b>Overall Mean</b>		<b>4.12</b>	<b>.684</b>	<b>VH</b>

The results showed that item 3 had the highest mean score of (m=4.16, SD. = .814), followed item 5 with a mean score of (m= 4.15, SD. = .793) and then items 1, 4, and 8 with mean scores of (m=4.14) correspondingly.

However, item 7 got the lowest mean score of (m=4.03, SD. = .799), and seconded by items 2 and 6 with mean scores of (m=4.09, SD. = .801 and .812) respectively. This result means that motivation leadership competency was “Very High” which was in contrast to Arman et al. (2016) that found competence principals, supervisors, teachers’ work motivation, and teachers’ performance to be in the middle, and average category.

These findings indicated that the participants described their leaders as having the capacity to influence others to help achieve work-related tasks and/ or objectives. Also, the results revealed that leaders offer encouragement to others, especially teachers to improve motivation and performance, stimulates teachers and other people to think of problems and solutions in new and different ways, and helps people find meaning in their work.

The results were substantiated by Northouse (2019) who suggested that leaders are needed to handle change through setting a direction, aligning people, and motivating and inspiring people.” Conversely, the findings were incongruence with Arman et al. (2016) research outcome which revealed that teachers' work motivation and performance were positively affected by the principal’s competence.

**Table 1. 8**  
**Mean Rating Summary on Leadership Competencies (N=184)**

Scale Indicators	Mean	SD	Verbal Interpretation
Teambuilding and Collaboration	4.21	.750	Very High
Communication	4.16	.673	Very High
Adaptability	4.02	.673	Very High
Motivation	4.12	.684	Very High

Table 8 shows the summary mean ratings of the respondents on the higher education institutions' leadership competency indicators. Based on the findings, team building and collaboration had the highest mean score of (m=4.21, SD. =.750). However, communication had the lowest mean score of (m=4.16) respectively.

Nevertheless, deducting from the mean score rating ranges, all the leadership competency indicators showed that the respondents perceived their leaders as having the required leadership competencies to navigate through the challenges of VUCA environments. This further implies that the leaders were cognizant of the implications that volatile economic issues that surround the national polity could impact on the administrations of higher education activities.

Moreover, the findings indicate that uncertainty and complexities in the higher education institutions could be managed and controlled by the leaders since they possess the needed knowledge and understanding of VUCA challenges in the social and environmental sphere that may adversely impede the goals and missions of the institutions.

Assuredly, with the high mean score on team-building and collaboration, that denotes a very high-level leadership competency of the institutions' leaders, it could be inferred that when volatility occurs, the leaders are capable of collaborating with employees to ameliorate the VUCA challenges. Apparently, a purposeful synergism that permeates within and among leaders and work teams from all institutional departments may help promote employees to cooperate and nurture a positive and effective working environment which is imperative for a volatile and complex institutional working context.

Likewise, the communication competency of leaders was shown to have a very high mean rating score by the respondents. This implies that the leaders possess the linguistic capability to communicate in oral and written forms the desired goals and objectives of the institutions to the employees, especially teachers and professors who mediate between students and institutions' leaders. This concept is in congruence with Kinsinger et al. (2016) who suggested that when confronted by volatility, leaders need to communicate clearly and make sure their intent is understood by employees.

Besides, cascading from the perspective of leadership adaptability competency, the respondents' mean rating score demonstrated a very high-level competency. Interestingly, this shows that higher education leaders could adapt and innovate strategies and explore for information from within and outside their institutions to navigate successfully in an environment infested with VUCA challenges like economic volatility and uncertainty in the degree at which national crisis or environmental threat like the recent COVID-19 epidemics raging across the globe.

However, the higher education leaders should be watchful of the nature or type of unprecedented uncertainty that may intrude into institutional terrain of leadership operations. For example, Bodde et al. (2018) observed that the most dominant types of uncertainty experienced by their respondents were the uncertainties about variability, identification of future activities, identification of change and impact, and values, interests, and perceptions.

Consequently, of these four dominant types of uncertainties, variability, and change and impact were noted to be the most difficult to address, as relatively few successful strategies were reported (Bodde et al. 2018). This trumpets for a genuine philosophy built on strong motivation of higher education leaders in the ability to adopt a culture of flexibility which may empower them to become adaptive to changes associated with VUCA uncertainty and ambiguity challenges.

Similarly, it's very important for higher education institutions leaders to sustain a durable workforce that produces tangible results in terms of students' output in graduation and research, they need to redefine how teachers are motivated by enhancing the rewards and benefits systems of the institutions.

This is pertinent because a lack of employee motivation has been shown to affect employees' satisfaction and performance of their pedagogical practices to the detriment of learners. For example, scholars have found that motivation from within an organization leads to success because it empowers employees to be engaged and demonstrate quality care to customers (Hyken, 2014).

In addition, the delegation of authority is a way of motivation that stirs employees' sense of belonging. However, on this concept Tracy (2014) advised leaders should delegate on purpose by attaching value to what they delegate because employees may not feel motivated if they find no true value and purpose in the tasks or responsibilities delegated to them by their leaders.

**Significant mean differences on leadership competencies factors when grouped according higher education institutional affiliations**

Mean Significant Differences on Leadership Competencies (N=184)

Variables	Schools	Mean Scores (SD)	F-value	P-value	Decision	Interpretation
Teambuilding / Collaboration	School 1	4.07 (.785)	4.093	.008	Reject	Significant
	School 1	4.18 (.758)				
	School 3	4.49 (.684)				
	School 4	4.50 (.750)				
Communication	School 1	4.10 (.715)	1.669	.175	Accept	Not Significant
	School 1	4.08 (.677)				
	School 3	4.28 (.456)				
	School 4	4.36 (.635)				
Adaptability	School 1	3.97 (.730)	.657	.580	Accept	Not Significant
	School 1	4.02 (.692)				
	School 3	4.09 (.512)				
	School 4	4.15 (.561)				
Motivation	School 1	4.05 (.740)	1.907	.130	Accept	Not Significant
	School 1	3.99 (.680)				
	School 3	4.25 (.556)				
	School 4	4.33 (.523)				

\*Significant at the 0.05 level (2-tail)

The analysis of the one-way ANOVA was conducted to compare the leadership competency differences of the institutions. Normality checks and Levene’s tests were carried out and the assumptions were met. There was a significant difference in mean team building and collaboration which showed a positive and significant difference [ $F(3, 180) = 4.093, p=.008$ ] between the institutions.

Given that there were strong and significant differences, consequently, there is significant evidence to conclude that there were significant differences between the teambuilding and collaboration leadership competency when grouped and compared according to institutional affiliations (schools).

However, this does not inform us where the differences were, hence to satisfy this assumption, the post hoc test was conducted to evaluate pairwise differences among the group means. Interestingly, both Scheffe and Turkey were used and the test satisfies the condition of unequal sample size variances.

Test revealed that significant pairwise differences occurred between School 4 and school 1 and school 2. But there was not differences of group means between school 1 ( $M= 4.07, SD=.785, n=30$ ), and school 2 ( $M=4.18, SD=.758, n=26$ ); school 4 ( $M= 4.50, SD= .750, n=104$ ) and school 3 ( $M= 4.49, SD= .684, n=24$ ).

Also, the assumption of homogeneity of variance tested revealed that Levene’s Test,  $F(3, 180) =1.659, p=.178$ . Levene’s test verified that if the p-value is above 0.05, the null hypothesis should be accepted and it shows there is an equality of variance (Martin and Bridgmon, 2012).

Given that the findings showed a positive significant difference, therefore, there is significant evidence to reject the null hypothesis and conclude that there are significant differences in respondents’ levels of perceptions based on the rating on leadership teambuilding and collaboration competency. However, the actual difference in the mean scores between groups was quite small based on Cohen’s (1988) conventions for interpreting effect size.

Ascribing from the findings, it implies that though the institutions are in the same geographical setting and belonged to the same higher education consortium, however, team building and collaboration were approached differently. This indicates that belonging to the same organization is not a requisite or criteria to act or behave alike. This further suggests that teambuilding and collaboration leadership competency were approached differently in school 4 when compared to school 1 and school 2 respectively.

Consequently, it could be inferred that within the South Manila Education Consortium member university, the concept of team building and collaboration approached were differently. This has strong implications for the organization because it could deter unity, cooperation, and teamwork among the consortium members. Furthermore, it implies that the institutions cannot readily rely on each other since there was a significant difference in teambuilding and collaboration leadership competence.

However, in a volatile and complex environment, it is important that higher education leaders collaborate in order to harness their leadership competencies and thereby function effectively in navigating through VUCA challenges. Therefore, there is a need for synergy in order to achieve greater results and empower the institutional teams such as program departments to develop mutual and effective relationships for achieving institutional goals and delivering benefits to the overall organization.

Moreover, the results on teambuilding and collaboration explicitly delineate that teambuilding and collaboration leadership competency have a positive and significant effect on leaders’ capacity to lead in a volatile, complex, and ambiguous environment. It also shows that teambuilding and collaboration have the power to influence leaders, employees, and institutional performances.

In addition, the findings equally suggest that in VUCA environment, teambuilding and collaborative leadership behaviors which involves the act of building trust, inspiring a shared vision, encouraging creativity, emphasizing development, and recognizing accomplishments are positively related to how team members feel about reaching desired extra mile and achieving group and institutional goals.

However, the one-way analysis of variance conducted to evaluate the null hypothesis revealed that there was not a significant differences between mean ratings of the respondents when grouped and compared according to institutional affiliations on communication [F (3, 180) = 1.669, p=.175], adaptability [F (3, 180) = .657, p=.580], motivation [F = 1.907, p=.130], self-confidence [F (3, 180) = 1.380, p=.250], tech-savviness [F (3, 180)= 1.032, p=.348], and risk and conflict management [F (3, 180)= .053, p=.984] respectively.

Although the assumption of normality and assumption of homogeneity of variance communication was tested and found tenable for all groups (Martin and Bridgmon, 2012). Besides, the Levene’s test was conducted on communication and the finding was [F (3, 180) =1.504, p= .215], consequently, there was significant evidence to accept the null hypothesis and conclude that there were no significant differences on the respondents’ level of perceptions based on the rating on communication leadership competency.

Moreover, the assumption of normality and homogeneity of variance was tested and found tenable on adaptability using Levene’s Test, [F (3, 180) =1.048, p= .373]. Levene’s test verified that if the p-value is above 0.05, the null hypothesis should be accepted and it shows there is an equality of variance (Martin and Bridgmon, 2012). Accordingly, there was significant evidence to accept the null hypothesis and conclude that there were no significant differences in respondents’ level of perceptions based on the rating on adaptability leadership competency.

Likewise, on motivation leadership competency, the one-way analysis of variance conducted demonstrated that there was not a significant difference between the ratings of the respondents when grouped according to institutional affiliation. The assumption of normality was evaluated using histograms and found tenable for all groups. The assumption of homogeneity of variance was tested and found tenable using Levene’s Test, F (d=3,) =.871, p=.457. The Levene’s test confirmed that if the p-value is above 0.05, the null hypothesis should be accepted. Thus, implying that there is an equality of variance (Martin and Bridgmon, 2012).

Hence, there was significant evidence to accept the null hypothesis and conclude that there was not a significant difference in respondents’ level of perceptions based on the rating on motivation leadership competency. However, the actual differences in the mean scores between groups were quite small based on Cohen’s (1988) conventions for interpreting effect size.

**Correlations between leadership competencies and VUCA environment identified factors**

**Table 6  
Correlation between Independent and Dependent Variables**

<b>Variables</b>	<b>Schools</b>	<b>Pearson-r</b>	<b>P-value</b>	<b>Decision</b>	<b>Interpretation</b>
Teambuilding / Collaboration	ITS	.521**	.000	Reject	Significant
	ICV	.090	.223	Accept	Not Significant
	SD	.553**	.000	Reject	Significant
	IC	-.074	.321	Accept	Not Significant
Communication	ITS	.507**	.000	Reject	Significant
	ICV	.188*	.011	Reject	Significant
	SD	.520**	.000	Reject	Significant
	IC	-.053	.472	Accept	Not Significant
Adaptability	ITS	.623**	.000	Reject	Significant
	ICV	.221**	.003	Reject	Significant
	SD	.593**	.000	Reject	Significant
	IC	-.052	.481	Accept	Not Significant
Motivation	ITS	.669**	.000	Reject	Significant
	ICV	.163*	.027	Reject	Significant
	SD	.537**	.000	Reject	Significant
	IC	-.004	.959	Accept	Not Significant

\*\*Correlation is significant at the 0.01 level (2-tailed).

\*Correlation is significant at the 0.05 level (2-tail)

Table 6 shows the correlation matrix analysis between leadership competency indicators and institutional teaching strategies, institutional cultural values, students’ diversity, and institutional challenges.

The Pearson r bivariate correlation analysis showed that the results of the institutional teaching strategies was (r=.521, p=.001). This reveals that there was a strong and positive significant correlation between teambuilding and

collaboration and institutional teaching strategies. Moreover, the correlation analysis showed that there was a positive significant correlation between teambuilding and collaboration and students' diversity with an ( $r = .553, p = .001$ ).

This demonstrates that there was a positive significant correlation between team building and collaboration with teaching strategies (TS) and students' diversity (SD). Therefore, the decision to reject the null hypothesis. These findings reveal that in a volatile and complex environment, team building and collaboration leadership competency could influence organizational or institutional teaching strategies. Consequently, in the VUCA environment, higher education leaders are expected to build teams and promote team collaboration in order to provide support from internal and external to teachers particularly considering the unpredictable or unstable VUCA challenges that institutions and departments may experience.

This is imperative because the degree of ambiguity and uncertainty in modern higher education associated with students' mobility, exchange programs, demands for an inclusive classroom, and internationalization of higher education portends that leaders cannot work in isolation of other key players like department heads, human resource leaders and especially teachers who are the frontline of teaching and learning practices.

The study findings was in consonance with past research results which demonstrated that teaching leadership behavior factors such as giving feedback, encouraging, supporting various learning and teaching approaches, supporting collaborative efforts, and starting teamwork is a predictor of school climate (Gu, 2014).

It follows that when higher education leaders collaborate with teachers, the later could be feel motivated in discharging their pedagogical practices to the advantage of students' positive academic progress and achievement. Hence, this study findings suggest that higher education team building and collaboration leadership competency is indispensable in a highly challenging institutional VUCA environment.

Conversely, the findings on cultural values showed that there was not a significant relationship between teambuilding and collaboration and institutional cultural values with a Pearson  $r$  of ( $r = .090, p = .223$ ). Similarly, the correlation analysis showed a negative significant relationship between teambuilding and collaboration and institutional challenges with a Pearson  $r$  of ( $r = -.074, p = .321$ ).

The findings mean that there was not a significant relationship between teambuilding and collaboration and institutional cultural values and as well as institutional challenges encountered by teachers. Hence, the decision to accept the null hypothesis.

The study findings were in congruence with past research which revealed that developing culturally competent leaders discloses a pronounced challenge because leadership is practiced differently across cultures (Dickson et al., 2012; Tang, Yin, & Min, 2011). Conversely, Musamali, and Martin (2016) study found a significant correlation between effective leadership practices and cultural intelligence.

Tiptoeing from the negative correlations between teambuilding and collaboration and institutional cultural values, and institutional challenges, it implies that ambiguity exists in the institutions on these factors. One such ambiguity could be attributed to the individualism-collectivism cleavage that is the most relevant dimension of cultural traits that higher education leaders should balance. Abstracting from the school of cultural psychology, differences between individualism and collectivism have deep roots that affect different forms of behaviors in an organization or institution. Apparently, they relate to different visions of self, differences in cognitive behavior, behavioral and motivational differences, and relational differences (Heine, 2010). All these differences do not cascade a fertile environment for higher education leaders to positively and effectively utilize his/her leadership competencies for the advantage of the institutional goals and objectives achievement.

Although, Gorodnichenko and Roland (2013a) suggested individualism can be relevant for growth by emphasizing personal freedom and achievement. But at the same time, this trait can make collective action more difficult because people pursue their own interests without internalizing collective interests. However, collectivism makes collective action easier, because people are more able to internalize group interests, but by encouraging conformity, discourages innovation.

Nevertheless, for a higher education institution to thrive in a complex and ambiguous environment, there is a need to promote collective and shared cultural values. Hence, higher education leaders develop institutional cultural values that may engender teamwork and cohesion among leaders and teachers and also teachers and students as well as other members of the institution. Also, the table displays the correlation between communication and teaching strategies (TS), cultural values (CV), students' diversity (SD), and institutional challenges (IC). The results were: TS ( $r = .507, p = .001$ ), CV ( $r = .188, p = .011$ ), SD ( $r = .520, p = .001$ ) and TIC ( $r = -.053, p = .472$ ). This showed that there was a strong and positive significant relationship between communication and teaching strategies, cultural values, and students' diversity. Whereas there was a negative significant relationship between communication and institutional challenges encountered by teachers.

The study positive and significant relationship between leadership communication competency of leaders and teaching strategies, institutional cultural values, and students' diversity suggests that communication leadership competency should be promoted by higher education leaders. It equally denotes that in a high VUCA environment, communication is very pertinent. Especially positive and motivational communication emanating from higher education leaders to teachers could arouse a strong sense of care and support.

The findings were supported by empirical literature that school directors' communication competence for understanding, empathy, social comfort, and support was found to be mostly positive (Saglam et al. 2017). Likewise, leaders' communication pattern was found to be significantly related to lecturers' performance (Fashiku, 2016).

Conversely, leaders' inability to communicate can derail the educational leader's ability in all areas, and equally without supportive communication an administrator does not develop trust (Sparks et al. (2005) as cited in Surian (2015). Also, a significant negative moderate level of correlation was found between communication competence and organizational conflict levels of heads of educational supervisors (Üstüner et al. 2014). Similarly, the lack of teachers' time, poor communication, structural factors, and personal characteristics were found to affect teachers' level of performance (Wenner & Campbell, 2016).

Viewed from the ambiguity in communication and information sharing, the findings apparently indicate that communication leadership competency could help in ameliorating difficulties in communicating institutional vision, mission, goals, and objectives to employees especially leaders' feedback on teachers' pedagogical practices. This notion calls to mind the quest for higher education leaders to understand their working environment and subordinates in order to identify the most important trends and issues that requires immediate action and to be communicated to board and directors for decision-making.

Besides, the Pearson correlation analysis revealed that there was a significant correlation between adaptability and TS, CV, SD, except for IC. The results were: TS ( $r=.623, p=.001$ ), CV ( $r=.221, p=.003$ ), SD ( $r=.593, p=.001$ ) and TIC ( $r=-.053, p=.472$ ). These findings disclosed that there was a strong and positive significant relationship at the 0.01 level of significant (2-tailed) between adaptability and teaching strategies, cultural values, and students' diversity except for teachers' institutional challenges which displayed a negative significant relationship. Hence, the decision to reject the null hypothesis on TS, CV, SD, while accepting the null hypothesis on IC.

These findings imply that adaptability leadership competency and institutional teaching strategies, institutional cultural values, students' diversity are important factors for higher education leaders to become agile in enhancing a VUCA in the environment. Whereas the practical implication is that higher education leaders should also improve their adaptability competency in the management of institutional challenges that are capable to sabotage the performance of employees (teachers and students) most especially complex and uncertain working environments.

Moreover, table 6 results showed a positive and significant correlation between motivation and TS, CV, SD, but the negative significant relationship was observed on IC. The results were: TS ( $r=.669, p=.001$ ), CV ( $r=.163, p=.027$ ), SD ( $r=.537, p=.001$ ) and TIC ( $r=-.004, p=.959$ ).

These findings unveiled that there was a strong and positive significant relationship at the 0.01 level of significant (2-tailed) between motivation and teaching strategies, and students' diversity while cultural values correlation was significant at the 0.05 level (2-tailed). However, institutional challenges displayed a negative significant relationship between both indicators. Hence, the decision to reject the null hypothesis on TS, CV, SD, while accepting the null hypothesis on IC.

The results have implications for higher education leaders to consider motivation as immensely for teachers and other institutional employees. This is pertinent because the lack of employees could negatively impact teachers' behavior to work. Consequently, in a VUCA environment, employees' engagement is important, therefore higher education leaders should promote basic drivers of teachers' motivation and sense of worth. This may help engender trust and hope in teachers and other employees in an uncertain and complex working condition.

A further implication is that when higher education leaders develop motivation leadership competency, it may empower them to determine the best rewards and benefits systems to adopt in motivating employees. For instance, inspiring employees (teachers) could stimulate them to contribute willingly and as well find satisfaction with their job which could deter attrition decisions.

These study findings was buttressed by Northouse (2018) who posited that leaders' motivation personality as features of charismatic leadership entails dominance, self-confidence, and the strong craving to inspire employees. Practically, this showcases leaders' capability to energize employees which denotes the ability to motivating and creating dynamism in the organization or institution members.

Also, Consoy and Parlar (2017) study found a positive and significant relationship between all sub-dimensions of school culture and those of teacher leadership. In addition, Demir (2014) found that school environments whereby teacher leadership is encouraged, ensuring collaboration practices among colleagues, and school administrators' supportive work setting are significant levels for school culture (Demir, 2014).

### **SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION**

This chapter presents the summary of the study findings, conclusions, and recommendations, theoretical and practical implications derived from the overall study findings.

#### **SUMMARY OF FINDINGS**

##### **1. Respondents Mean Ratings on Leadership Competencies**

###### **1.1 On team-building and collaboration**

On the overall, the respondents rated team building and collaboration very high with a mean score of ( $m=4.20, SD = .750$ ). This implies that leaders had a high level of team building and collaboration competency.

###### **1.2 On Communication**

On communication leadership competency, the respondents reported a very high mean score on the indicator with an overall mean score of ( $m=4.16, SD = .673$ ).



### 1.3 On Adaptability

The findings on adaptability leadership competency, the respondents rated it very high with a mean score of ( $m=4.02$ ,  $SD. = .673$ ). This indicated that the respondents strongly agreed that their higher education institution leaders possessed a very high level of adaptability competency.

### 1.4 On Motivation

In terms of motivation leadership competency, the respondents reported a very high overall mean score of ( $m=4.12$ ,  $SD. = .684$ ). This result affirms that the respondents strongly agreed the leaders have a very high-level motivation leadership competency.

## CONCLUSIONS

Based on the study findings, the following conclusions were made.

1. The results showed that there was a very high level of higher education institutions' leadership competencies of the participating schools on the team-building and collaboration, communication, adaptability, and motivation as perceived by the respondents. Consequently, it was concluded that the leaders keep up with the very high level of leadership competency acumen.

## RECOMMENDATIONS

Based on the study findings, the following recommendations were proposed.

1. The respondents' mean rating on the leadership competency indicators showed a very high level of leaders' competencies on the indices (team-building, communication, adaptability, and motivation). Hence, it's suggested that the leaders keep up with the trends and persevere by operationalizing the competencies through modeling team-building among different institutional departments in order to cross-breed ideologies and skills that may position them work effectively and efficiently in the midst of VUCA challenges that are sure to occur not only today but, in the future, as well.

## REFERENCES

1. Akinfolarin, A. V. (2017). Analysis of principals' managerial competencies for effective management of school resources in secondary schools in Anambra State, Nigeria. *IJSSHE-International Journal of Social Sciences, Humanities and Education*. Volume 1, Number 4.
2. Alegado, P. J. E. (2018). Unraveling social epidemia through the lens of public education in the Philippines. *World Council of Comparative Education Societies (WCCES) Chronicle*, 2(1).
3. Ansell, C. (2017). Turbulence, adaptation, and change. In C. K. Ansell, J. Trondal & M. Ogard (Eds.), *Governance in turbulent times* (pp. 77-104). London, UK: Oxford University Press.
4. Arena, M., Uhl-Bein, M. (2016). Complexity leadership theory. Shifting from human capital to social capital. *People + Strategy*, 39(2), 22-27.
5. Arman, S. B. T., & Darman, M. (2016). The effect of school supervisors competence and school principals competence on work motivation and performance of Junior High School teachers in Maros Regency, Indonesia. *International Journal of Environmental & Science Education*. Vol. 11, No.15, 7309-7317.
6. Baltaci, A., & Balci, A. (2017). Complexity leadership: A theoretical perspective. *International Journal of Educational Leadership and Management*, 5(1), 30-58.
7. Blaskova, M., Majchrzak-Lepczyk, J., Hriníková, D., & Blasko, R. (2019). Sustainable Academic Motivation. *Sustainability*, 11, 5934; doi: 10.3390/su11215934.
8. Breen, J. M. (2017). Leadership resilience in a VUCA world. In *Visionary leadership in a turbulent world: Thriving in the new VUCA context* (pp. 39-58). Bingley, UK: Emerald Publishing Limited.
9. Brodnick, R., & Gyskiewicz, S. (2018). Using positive turbulence for planning and change. *Planning for Higher Education Journal* V46, N4.
10. Calderon, M. T. (2014). A critique of K-12 Philippine education system. *International Journal of Education and Research*.
11. Carrillo, F. J. (2016). Knowledge markets: a typology and an overview. *International Journal of Knowledge-Based Development*, 7(3), 264-289.
12. Chawla, S., & Lenka, U. (2018). Leadership in VUCA environment. In *Flexible strategies in VUCA markets* (pp. 213-224). Singapore: Springer.
13. Carvan, M. T. (2015). Leadership education for the volatile, uncertain, complex, and ambiguous now: a challenge to the field. *Journal of Leadership Education* DOI: 10.12806/V14/I4/C2.
14. Center for Research Quality (CRQ) (2015a). Overview of quantitative research methods [video file]. Center for Research Quality. Retrieved from <https://www.youtube.com/watch?v=cwU8as9ZNIa>
15. Chelimo, S. J. (2017). Effect of human resource policies on employees' performance: a case study of co-operative bank. Project Report Submitted to the School of Business United States International University-Africa Retrieved from <https://pdfs.semanticscholar.org/f1c2/11058249cca48227e072906eb5d47bdcc172.pdf>.
16. Collie, R. J., & Martin, A. J. (2017). Teachers' sense of adaptability: Examining links with perceived autonomy support, teachers' psychological functioning, and students' numeracy achievement. *Learning and Individual Differences*, 55, 29-39. doi.org/10.1016/j.lindif.2017.03.003.

17. Combalicer, L. F. (2016). Best practices and problems in the initial implementation of the K+12 curriculum among teachers in Infanta, Quezon: Implications to an effective implementation of senior high school. *Journal of Education and Social Sciences*.
18. Cook, P. (2015). *Leading in a VUCA world*. London, UK: TTM Associates.
19. Dias-Lacy, S. L., & Guirguis, R. V. (2017). Challenges for new teachers and ways of coping with them. *Journal of Education and Learning*; Vol. 6, No. 3. doi:10.5539/jel.v6n3p265.
20. Diefenbach, S., & Deelmann, T. (2016). Organizational approaches to answer a VUCA world. In *Managing in a VUCA world* (pp. 197-208). Cham, Switzerland: Springer.
21. Elkington, R., Steege, M. V. D., Glick-Smith, J., & Breen, J. M. (Eds.). (2017). *Visionary leadership in a turbulent world: Thriving in the new VUCA context*. Bingley, UK: Emerald Publishing Limited.
22. Emaliana, I. (2017). Teacher-centered or Student-centered Learning Approach to Promote Learning? *Jurnal Sosial Humaniora*, Volume 10, Ed 2.
23. Fashiku, C. O. (2016). Leaders' communication pattern: a predictor of lecturers' job performance in Nigeria. *International Journal of Educational Leadership and Management*, 4(2), 103-126. doi: 10.17583/ijelm.2016.1848.
24. Forsythe, G., Kuhla, K., & Rice, D. (2018). Can you do VUCA? 5 Key strategies for success. *Chief Executive*, 294, 41-50.
25. Garibay, J. C. (2014). Diversity in the classroom. Retrieved from <https://equity.ucla.edu/wpcontent/uploads/2016/06/DiversityintheClassroom2014Web.pdf>.
26. Gorodnichenko, Y., Roland, G. (2015a). Understanding the Individualism-Collectivism Cleavage and its Effects, Lessons from Cultural Psychology. Mimeo.
27. Gorodnichenko, Y., Roland, G. (2015b). Culture, Institutions, and Democratization. NBER Working Paper 21117.
28. Grigoryan, A.E. (2015). In search of eco-friendly strategies for the development of information and communication environment. *Bulletin of the Oryol State University. Series: New Humane Studies*, 1 (42), 297-300.
29. Hackett, P. T., Lemoine, P. A., & Richardson, M. D. (2017). Impact of technology ambiguity on leadership in global higher education. In *Encyclopedia of strategic leadership and management* (pp. 270-281). Hershey, PA: IGI Global.
30. Henley Business School (2015). *Corporate learning priorities survey 2015: using learning and development to achieve strategic business aims*. Reading, England: Author.
31. Howell, A., Kirk-Brown, A., & Cooper, B. K. (2012). Does congruence between espoused and enacted organizational values predict affective commitment in Australian organizations? *The International Journal of Human Resource Management* 23(4):731-747. DOI:10.1080/09585192.2011.561251.
32. Jhunthai, P. (2015). *The Development of Program of Team Development in Municipality School* (Doctor of Education thesis in Educational Administration, Faculty of Education, Mahasarakham University).
33. Kaplan, M., Dollar, B., Melian, V., Van Durme, Y., & Wong, J. (2016). *Human capital trends survey*. Oakland, CA: Deloitte University Press. Retrieved from [deloitte.com/us/en/pages/human-capital/articles/introduction-human-capital-trends.html](http://deloitte.com/us/en/pages/human-capital/articles/introduction-human-capital-trends.html)
34. Kezar, A. J., & Holcombe, E. M. (2017). *Shared leadership in higher education: important lessons from research and practice*. Washington, DC: American Council on Education.
35. Kiral, E. (2016). Challenges faced by prospective teachers in universities and solution proposals. *International Journal of Environmental & Science Education*, 11(5), 839-850.
36. Kornelsen J. (2019). The quest to lead (with) millennials in a VUCA-world: bridging the gap between generations. In: Kok J., van den Heuvel S. (eds) *Leading in a VUCA World. Contributions to Management Science*. Springer, Cham. doi.org/10.1007/978-3-319-98884-9\_2.
37. Kowalczyk, D. (2016). Research methodologies: Quantitative, qualitative, and mixed methods [video file]. Retrieved from <http://study.com/academy/lesson/research-methodologies-quantitative-qualitative-mixed-method.html>.
38. Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*.
39. Kruss, G., McGrath, S., Petersen, I. H., & Gastrow, M. (2015). Higher education and economic development: The importance of building technological capabilities. *International Journal of Educational Development*, 43, 22-31.
40. Kumso, S. (2015). *Developing a Team Empowerment Program in the Primary Schools Under the Office of Basic Educational Services* (Doctor of Education thesis in Educational Administration, Faculty of Education, Mahasarakham University).
41. Lemoine, P. A., & Richardson, M. D. (2019). Creative disruption in higher education: Society, technology, and globalization. In *Educational and social dimensions of digital transformation in organizations* (pp. 275-293). Hershey, PA: IGI Global.
42. Lemoine, P. A., Hackett, P. T., & Richardson, M. D. (2017). Global higher education and VUCA–volatility, uncertainty, complexity, ambiguity. In *Handbook of research on administration, policy, and leadership in higher*

- education (pp. 549-568). Hershey, PA: IGI Global.
43. Lilian, S. C. (2014). Opportunities and challenges for e-leaders. *Procedia - Social and Behavioral Sciences*, 110, 1251 - 1261. doi.org/10.1016/j.sbspro.2013.12.972.
  44. Mack, O., Khare, A., Krämer, A., & Burgartz, T. (2016). *Managing in a VUCA world*. Cham, Switzerland: Springer.
  45. Millar, C. C. J. M., Groth, O., & Mahon, J. F. (2018). Management innovation in a VUCA world: Challenges and recommendations. *California Management Review*, Vol. 61(1) 5–14. doi.org/10.1177/0008125618805111.
  46. Moodie, G. (2016). Universities, disruptive technologies, and continuity in higher education: The impact of information revolutions. New York, NY: Springer.
  47. Momani, M., Asiri, M.A., & Alatawi, S. M. (2016). The impact of implementing active learning strategies in teaching English from the perspective of Tabuk Region Educational Intermediate School Teachers. *Asian Journal of Educational Research*, 4(1), 19-35.
  48. Mpho, O. M. (2018). Teacher centered dominated approaches: Their implications for today's inclusive classrooms. *International Journal of Psychology and Counselling*. Vol. 10(2), pp. 11-21, DOI: 10.5897/IJPC2016.0393.
  49. Mwanza, D. S. (2017). Teachers' understanding and attitudes towards the Eclectic Method to language teaching in Zambia. *Journal of Educational and Management Studies*, 7(1):01–16.
  50. Nguyen, K., DeMonbrun, R.M., Borrego, M., Prince, M., Husman, J., Finelli, C. J., Waters, C. (2017a). The variation of nontraditional teaching methods across 17 undergraduate engineering. classrooms. Paper presented at the American Society of Engineering Education Annual Meeting, Columbus, OH.
  51. Nguyen, K., Husman, J., Borrego, M., Shekhar, P., Prince, M., Finelli, C. J., Waters, C. (2017b). Students' expectations, types of instruction, and instructor strategies predicting student response to active learning. *International Journal of Engineering Education*, 33(1).
  52. Nguyen, K. A., DeMonbrun, M., Borrego, M., Husman, J., Prince, M., Finelli, C., Waters, C. (2017c). The tensions measuring instructional practices. In 2017 Research in Engineering Education Symposium, REES 2017 Research in Engineering Education Network.
  53. Pezaro C 2016. Teacher decision-making: What information is needed. Retrieved from <https://npjsclearncommunity.nature.com/users/19567-charlotte-pezaro/posts/13876-teacher-decisionmaking-what-information-is-needed>.
  54. Petrie, N. (2015). Vertical leadership development–Part 1 Developing leaders for a complex world. Center for Creative Leadership. Retrieved from <https://www.ccl.org/wpcontent/uploads/2015/04/VerticalLeadersPart1.pdf>.
  55. Pitlik, H., Kouba, L. (2015). Does social distrust always lead to a stronger support for government intervention? *Public Choice* 163, 355–377.
  56. Plessis, E. (2020). Student teachers' perceptions, experiences, and challenges regarding learner-centred teaching. *South African Journal of Education*, Volume 40, Number 1. Doi.org/10.15700/saje.v40n1a1631.
  57. Possi, M. K., Milinga, J. R. (2017). Learner diversity in inclusive classrooms: The interplay of language of instruction, gender and disability. *Malaysian Online Journal of Educational Sciences*. Volume5 - Issue 3.
  58. Qureshi, T. M. (2019). Employee's learning commitment and self-efficacy. *Academy of Strategic Management Journal*/Volume 18, Issue 3.
  59. Ramsey, James R. and Wesley, Madison (2015). Leadership Challenges for the University of the 21st Century. *International Journal of Leadership and Change*: Vol. 3: Iss. 1, Article 1.
  60. Rantesalu, A., Abdul Rahman Mus, A. R., Mapparenta, Z. A (2016). The effect of competence, motivation and organizational culture on employee performance: the mediating role of organizational commitment.
  61. Reevy, G., Chamberlain, C., & Stein, J. (2014). Identifying collaboration, teamwork, and leadership practices on campus. *Currents in Teaching and Learning*. 6. 4-17.
  62. Saglam, A. C. & Aydogmus, M (2017). Secondary school directors' communication competence on the basis of teacher opinions. *Unibulletin* Volume 6 Issue 1pp. 20-32 DOI: 10.22521/unibulletin.2017.61.2.
  63. Shaaruddin, J., & Mohamad, M. (2017). Identifying the Effectiveness of Active Learning Strategies and Benefits in Curriculum and Pedagogy Course for Undergraduate TESL Students. *Creative Education*, 8, 2312-2324. doi.org/10.4236/ce.2017.814158.
  64. Siu, K. W. M., & García, G. J. C. (2017). Disruptive technologies and education: Is there any disruption after all?. In *Educational leadership and administration: Concepts, methodologies, tools, and applications* (pp. 757-778). Hershey, PA: IGI Global.
  65. Stafford, S., & Taylor, J. (2016). Transnational education as an internationalization strategy: Meeting the institutional management challenges. *Journal of Higher Education Policy and Management*, 38(6), 625-636.
  66. Stensaker, B., Frølich, N., Huisman, J., Waagene, E., Scordato, L., & Pimentel Bótas, P. (2014). Factors affecting strategic change in higher education. *Journal of Strategy and Management*, 7(2), 193-207.
  67. Stewart, B., Khare, A., & Schatz, R. (2016). Volatility, uncertainty, complexity and ambiguity in higher education. In *Managing in a VUCA world* (pp. 241-250). Cham, Switzerland: Springer.
  68. Sundari, A., Lengkanawati, N., & Moecharam, N. (2018). Teacher's strategies in building the students' knowledge of the field (bkof) in teaching writing narrative text. *Journal of English and Education*, 5(2), 154-

162.

69. Tharayil, S., Borrego, M., Prince, M. et al. (2018). Strategies to mitigate student resistance to active learning. *International Journal of STEM Education* 5: 7. doi.org/10.1186/s40594-018-0102-y.
70. Thomas, L. C., (2016). The impact of diversity on student engagement and academic success. Graduate Theses and Dissertations. Retrieved from <http://scholarcommons.usf.edu/etd/6414>.
71. Vasyakin, B. S., Ivleva, M. I., Pozharskaya, Y. L., & Shcherbakova, O. I. (2016). A study of the organizational culture at a higher education institution (Case Study: Plekhanov Russian University of Economics (PRUE)). *International Journal of Environmental & Science Education*, Vol.11, No.10, 11515-11528.
72. Wilkins, A., & Burke, P. J. (2015). Widening participation in higher education: the role of professional and social class identities and commitments. *British Journal of Sociology of Education* 36(3), 434-452.
73. Williams, A. M. (2017). *Emotional and social competencies of a principal school leader. Graduate College of the University of Illinois at Chicago*. Retrieved from <https://indigo.uic.edu/bitstream/handle/10027/21856/Williams-Dissertation-2017.pdf?sequence=1&isAllowed=y>.
74. Yılmaz T., & Kaya Ç. (2015). Özelleştirmeye kurban edilen eğitim. Verbal presentation, VI. Educational Administration Forum, 5-7 November, KKTC.