International Journal of Education and Practice
2021 Vol. 9, No. 2, pp. 340-353.
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/journal.61.2021.92.340.353

CREATIVE LEADERSHIP AND ITS RELATIONSHIP TO THINKING STYLES AMONG SAUDI UNIVERSITY LEADERS

Fozyah S. Alshammri[1+]
Abdullah K. Alenezi[2]

[1]*Associate Professor of Educational Administration and Planning, Princess Nourah bint Abdulrahman University, Saudi Arabia.*
Email: fsalshammari@pnu.edu.sa Tel: 00966555572691
[2]*Assistant Professor of Psychology, Imam Muhammad Ibn Saud Islamic University, Saudi Arabia.*
Email: akenezi@imamu.edu.sa Tel: 00966503380339

(+ Corresponding author)

Article History
Received: 27 October 2020
Revised: 25 February 2021
Accepted: 29 March 2021
Published: 16 April 2021

Keywords
Analyst thinking style
Creative leadership
Idealistic thinking style
Pragmatist thinking style
Realist thinking style
Synthesis thinking style
University leaderships.

ABSTRACT

The present research paper aims to identify the level of creative leadership among university leaders in Riyadh, Saudi Arabia and its relationship to their thinking styles. It also reveals the differences between the level of creative leadership and thinking styles according to university type (public or private) and gender. Moreover, it adopted the analytical descriptive method. The sample comprised (60) university leaders. The field data was collected using the creative leadership scale and thinking styles scale. The results indicated a high level of creative leadership among educational university leaders in Riyadh. In terms of the thinking styles, the realist, pragmatist, idealistic, analyst, and synthesis were ranked first, second, third, fourth, and fifth, respectively. Moreover, there were statistically significant differences between the mean ranks of the participants on the flexibility domain according to university type (public or private) favoring educational leaders in public universities. There were no statistically significant differences among the other domains and total score of the creative leadership scale, as well as among the total score and domains of thinking styles scale according to university type (public or private) and gender.

Contribution/Originality: Creative leadership is the basis of creativity. No creative environment can be found under a leadership that does not believe in development. Moreover, thinking styles build personality and develop confronting life situations. Therefore, the present study can promote higher education institutions as creative leadership among university leaders enhances thinking styles.

1. INTRODUCTION

The success of a leader lies in thinking styles and applied practices. Creative leadership is always changing to continue in dynamic environments and to demonstrate the ability to compete and excel (Imran, 2014). According to Qaraeen (2000) having ambitious, creative, and effective leaders is important to improve education in universities. Authors have various opinions concerning the characteristics of creative leadership. For example, Al-Serafy (2003) reported that a creative leader should demonstrate

- Problem sensitivity: The sensitivity of receiving and monitoring problems.
- Fluency: The liberation of mind and ability to trigger thinking to generate several alternatives and creative ideas.
- Originality: The ability to produce new solutions, as well as uncommon and unconventional ideas.
- Flexibility: The quick adaptation, transformation, and transition of thinking to multiple and varied directions and the ability to change the state of mind according to changing situations.

It is a common belief that leadership may meet challenges, problems, or circumstances. However, the leader's good management and commitment help overcome these obstacles. When creativity becomes a new factor, institutions will change their organizational structure (Eid, 2015). Several studies have examined creative leadership, such as Al-salami (2012) that identified the relationship between creative leadership and organizational climate in public intermediate schools in Jeddah from the perspective of principals and teachers. The results indicated that the characteristics of creative leadership are moderately practiced. Al-Ghamdi (2012) examined the degrees of practice and training needs of creative leadership from the perspective of academic leaders at Albaha University. The results illustrated the low degree of practicing creative leadership's domains. The highest practicing domains were fluency, flexibility, originality, and problem sensitivity. There were statistically significant differences between the mean responses of the participants in the degree of the practice of creative leadership favoring heads of departments. However, there were no statistically significant differences according to gender and college type.

Eid (2015) reported a high level of challenges that prevent achieving creative leadership in Saudi universities, the very high degree of the characteristics of the appropriate work environment for creative leadership, and the high need for creative leadership skills. The study demonstrated statistically significant differences in the mean scores of the participants according to gender, favoring men. Moreover, women needed higher creative leadership skills. Yossef and Rakha (2017) identified the level of personal and administrative skills among university leaders at Najran University. The results highlighted a high level of interpersonal and administrative skills and a moderate level of leadership creativity among university leaders. Moreover, they revealed a positive correlation between the personal and administrative variables and the level of leadership creativity.

Al Hussein (2018) identified the degree of practicing creative leadership in four domains (i.e., originality, flexibility, problem sensitivity, and fluency) among the principals of primary schools and the obstacles that prevent practicing creative leadership from the teachers' point of view in Hawtat Bani Tamim, Saudi Arabia. The findings reported a high practice of creative leadership concerning originality, flexibility, and fluency and a moderate degree of sensitivity to problems, as well as personal and administrative obstacles. Al-Owain (2019) examined the reality of practicing creative leadership among leaders of the general administration of education in Qassim from the perspective of educational supervisors in the (problems, thinking, and decision) domains. All domains were moderate.

Thinking styles have received the attention of psychologists and authors to study and develop theories, and prepare appropriate measures (Al-Shammari, 2010). Sternberg (2002) assumed the relationship between thinking styles and leadership behavior, indicating that understanding leaders' thinking styles contributes to understanding their administrative style and thus are developed the theory of thinking styles. Several perceptions and theories have tried to understand the preferred thinking styles, such as the theory of mental self-government (Sternberg, 1988) that was later known as thinking styles and the theory of Harrison and Bramson (1982) indicating five styles of thinking (Epstein, Pacini, Denes-Raj, & Heier, 1996). Harrison and Bramson (2002) categorized the styles of thinking as synthesist, idealistic, pragmatist, analyst, and realist. Each person has a certain degree of these styles of thinking (Jones, 2006). Sternberg (2002) argues that several factors affect the favorite thinking styles, such as heredity, social gains, feedback, training, parental treatment styles, age, and educational environment. An important variable in the development of thinking styles is gender. When we raise children, we prepare them socially based on our perception of masculinity and femininity, not reality (Altaeb, 2006).

- The synthesist thinking style: The individuals have conflicting ideas; they generate ideas, and provide innovative and new solutions by synthesizing. They are not particularly interested in compromises, consensus, or agreement on the best solution. They believe in the personal point of view because no two people perceive reality the same. They are always looking for conflict, disagreement, change, and novelty (Harrison. & Bramson, 2002).

- The idealistic thinking style: The individuals prefer an overall view of issues, being future-oriented, as well as thinking about goals, methods, and plans. They are interested in values and social standards and have a valuable attitude toward issues and people. They believe in a great plan for the world and its subjects (Harrison & Bramson, 2002; Jones, 2006).
- The pragmatist thinking style: The individuals believe that they need to focus on tactics and strategies that lead to the result. Thus, they often look for shortcuts that have immediate and quick results (Jones, 2006). Whatever work they do, they consider what is right and what is wrong in terms of direct personal experience (Harrison & Bramson, 1982). They are not those with long-term and large programs, but they tend to be short-term and practical thinkers and to have a systematic tendency toward life. They believe in efficiency and effectiveness as a sign of being useful. They see that the world is a highly variable phenomenon that is unpredictable, non-understandable, and hardly managed. Because the approach of pragmatisms is flexibility and adaptability (Harrison & Bramson, 2002) they have more innovativeness than other styles (Jones, 2006).
- The analyst thinking style: It is defined with an emphasis on formal logic and analysis. Those who enjoy this style stress on theory as a basis for decision-making (Jones, 2006). They face problems in an exact, logical, and systematic way. Moreover, they pay attention to details and planning carefully (Harrison & Bramson, 2002). They collect data before making a decision and they often are very successful in complex planning and modeling (Jones, 2006).
- The realist thinking style: Those who enjoy this style believe to look for solutions and make their decisions based on the facts and opinions of experts. They are inductive and have mental models derived from personal observation and experience. They want to have a clear picture of the goal they want to achieve (Jones, 2006). They focus on facts, data, as well as practical and effective solutions. They are empiricists, tend to achieve real and objective results, and have a desire to make things perfect, appropriate, and tight to make sure that they always do things in the best way (Harrison & Bramson, 2002).

Creative leadership requires intellectual skills demonstrated by the leader's ability to think logically, judge things properly, predict, and make the right decisions (AlSalem & Saleh, 2000). Borlandoe (2005) indicated that there are various preferences of thinking styles according to senior positions, heads of department, and administrative staff. The idealistic and realist thinking styles were ranked the highest. Sofo (2005) aimed to identify the preferred thinking styles among contemporary Chinese leaders and compared the thinking styles of educational and non-educational leaders. The findings showed the strong preferences of Chinese leaders for executive (realist) thinking styles, independent thinking style, and the style of exploration and analysis. Al-Atoum (2007) examined the prevailing thinking styles among school principals in Irbid, Jordan using the modified Sternberg and Wagner thinking styles scale for the Jordanian environment. The results indicated that the most common thinking styles were the executive, the liberal, and the hierarchically ranked ones respectively. No gender-based differences were found.

Subuh (2015) identified thinking styles and their relationship to decision-making among primary school teachers using the modified scale of thinking styles (Harrison & Bramson, 1982) for the Egyptian environment and the decision-making scale. The results indicated a statistically significant positive correlation between the scores of the participants on the scales of thinking styles and decision-making. There was a statistically significant impact of the pragmatist, analyst, and idealistic thinking styles on decision-making among teachers. Azeez (2015) highlighted that the preferable thinking styles among secondary school counselors are the synthesist, idealistic, pragmatist, analyst, and realist, respectively. There were no statistically significant differences according to gender. Moreover, Margret and Lavanya (2017) examined the relationship between hemispheric dominance, thinking style preferences, and emotional intelligence among college students using three scales: the alert scale of cognitive style (Crane, 1989) the thinking styles scale (Harrison & Bramson, 1977) and the emotional intelligence scale (Schutte et al., 1998). The

results indicated a significant positive relationship between hemispheric dominance and emotional intelligence, as well as emotional intelligence preferences and the (synthesist, idealistic, and analyst) thinking styles.

Chen (2018) identified the relationship between thinking styles and academic achievement based on the internet. The findings indicated that thinking styles showed remarkably positive effects on learning acquisition on academic achievement. Paik, Lee, and Pak (2019) examined the relationship between moral philosophy, thinking style, and administrative ethical decision-making. The results revealed that Korean managers become more dependent on utilitarianism in making ethical decisions. Al-Shammari (2010) examined the relationship between thinking styles and leadership skills among high and moderate secondary school achievers in Kuwait using the Sternberg model of thinking styles (Sternberg, 2002). The results indicated that there were statistically significant differences in the correlation coefficient between thinking styles and leadership skills, favoring high achievers. Although several studies tackled thinking styles, few of them addressed leadership (Minbashian, Birney, & Bowman, 2019).

2. STATEMENT OF THE PROBLEM

Providing ambitious, effective, and creative leaders who are able to use appropriate thinking styles is important for improving education (Twiqat, 2007).Leadership is thus important for universities as it leads managers and members of the educational system to enhance creativity with excellence (Makahleh, 2014). The influence of scientific and technological development on contemporary management thinking allows management thinking to identify new creative trends and developments (Abdul-Maksoud, 2006). Moreover, creative leadership directs the enormous and various energies of university management towards excellence, creativity, quality, and the global competition because creative administration, thinking level, and advanced planning are the basis for excellence (Khairallah, 2009). Donald (2000) found that higher education departments need creative administration. Feither (2002) suggests that universities to set priorities and should innovate and keep pace with developments and changes.

2.1. Objectives

The present research paper aims to identify the relationship between the level of creative leadership and the prevailing thinking styles among educational leaders. Hence, it sets forth following objectives:

- To identify the level of creative leadership among educational university leaders in Riyadh.
- To define the prevailing thinking styles among educational university leaders in Riyadh.
- To identify the relationship between thinking styles and creative leadership among educational university leaders in Riyadh.
- To define the differences in the level of creative leadership and thinking styles according to university type and gender among educational university leaders in Riyadh.

2.2. Questions

- What is the level of creative leadership among educational university leaders in Riyadh?
- What are the prevailing thinking styles among educational university leaders in Riyadh according to Harrison and Bramson's theory?
- What is the relationship between creative leadership and thinking styles among educational university leaders in Riyadh?
- Are there statistically significant differences in the level of creative leadership and thinking styles among educational university leaders in Riyadh according to university type (public or private) and gender?

2.3. Significance

2.3.1. Theoretical Significance

- The study addresses significant variables, i.e., creative leadership and thinking styles.
- It identifies the thinking styles of decision-makers and managers and helps them find the best solutions.
- This research will offer a good theoretical contribution to the domain of creative leadership and thinking styles.

2.4. Practical Significance

- The findings will motivate decision-makers in the Ministry of Education to adopt creativity and thinking in recruitment.
- The study responds to the Saudi vision 2030 that seeks to have Saudi universities at the top 200 universities in the world through creative and conscious leadership and effective thinking styles.

2.5. Definition of Terms

Creative Leadership: Al-Fayoumi (2007) defines creative leadership as the potential of uncovering new facts or laws and producing a huge number of ideas. The authors define university educational leadership as "the leadership style that is possessed by educational leaders e.g., deans, vice-deans, heads of departments, and their deputies and who are characterized by problem sensitivity, fluency, originality, and flexibility. *Thinking Styles*: Sternberg (2002) indicates that it is the preferred individual style in handling situations. The authors adopted the concept of Harrison and Bramson (1982) as "the preferred individual style in processing information while solving problems".

3. LIMITATIONS

3.1. Subject Limitations

- The study was limited to four main domains, namely problem sensitivity, fluency, originality, and flexibility.
- Thinking styles scale was utilized only to identify the prevailing thinking styles among educational university leaders in Riyadh.

Spatial limitations: The study was applicable only in public and private universities in Riyadh.

Temporal limitations: Data collection tools were applied only at the end of the first semester of 2019-2020.

4. METHODOLOGY AND PROCEDURES

4.1. Method

The research paper utilized the analytical descriptive approach that focused on a phenomenon to diagnose, reveal its aspects, and identify the relationship between its elements (Al-Azzawi, 2008).

4.2. Population and Sampling

The population consisted of all the educational leaders at the public and private universities in Riyadh. A pilot study was carried on (35) leaders outside the main sample from Saudi universities to calculate the psychometric characteristics of the scales and verify their applicability. The sample was randomly selected based on a link created for this study and circulated to various Saudi universities including King Saud University, Imam Muhammad Ibn Saud Islamic University, Princess Nourah bint Abdulrahman University, Dar Al Uloom University, Arab East University, and Prince Sultan University. The link was repeatedly circulated via social media. After (75) days, the responses were limited, and hence the sample size comprised (60) leaders (Table 1). It is worth mentioning that one of the difficulties encountered by the authors was the low response of the population to the scales probably because of their busy schedule.

Table-1. The distribution of the sample according to gender.

Gender	No.	Percentage
Male	20	33.3%
Female	40	67.7%
Total	60	100%

Table 1 shows that two-thirds of the sample (67.7%) represent females, whereas one-third (33.3%) represent the males.

Table-2. The distribution of the sample according to university type (public-private).

University type	No.	Percentage
Public	49	81.7%
Private	11	18.3%
Total	60	100%

Table 2 indicates that (49) participants (81.7%) work at public universities, whereas (11) participants (18.3%) belong to private universities.

4.3. Tools

4.3.1. First: The creative leadership scale

The authors developed the creative leadership scale that comprised (51) items distributed to four main domains: Problem sensitivity (11 items), fluency (9 items), originality (16 items), and flexibility (15 items).

- *Face validity of the creative leadership scale:*

  The scale was presented to (7) faculty members who approved most of the items. The items they did not approve were modified in accordance with their comments.

- *Internal consistency of the creative leadership scale:*

  The authors estimated the validity of the scale after applying it to 35 educational leaders in Riyadh universities from the pilot sample by calculating the Pearson correlation coefficient between the score of each item and the total score of the domain, as presented in Table 3.

Table-3. The correlation coefficient between the score of each item and the total score of the domain of the creative leadership scale (N = 35).

Problem sensitivity		Fluency		Originality		Flexibility	
No. of items	Correlation coefficient	No. of items	Correlation coefficient	No. of items	Correlation coefficient	No. of items	Correlation coefficient
1	0.705**	1	0.371*	1	0.709**	1	0.652**
2	0.595**	2	0.780**	2	0.738**	2	0.758**
3	0.573**	3	0.817**	3	0.740**	3	0.514**
4	0.741**	4	0.600**	4	0.553**	4	0.726**
5	0.728**	5	0.667**	5	0.778**	5	0.748**
6	0.617**	6	0.425*	6	0.708**	6	0.823**
7	0.650**	7	0.533**	7	0.711**	7	0.720**
8	0.682**	8	0.336*	8	0.801**	8	0.711**
9	0.657**	9	0.770**	9	0.861**	9	0.781**
10	0.648**	10	0.594**	10	0.713**	10	0.797**
11	0.694**			11	0.659**	11	0.701**
				12	0.545**	12	0.567**
				13	0.670**	13	0.787**
				14	0.584**	14	0.798**
				15	0.390*		
				16	0.778**		

Note: *Significant at the level of (0.05) **Significant at the level of (0.01).

Table 3 illustrates that the correlation coefficient is statistically significant at the level of (0.05). The authors calculated the correlation coefficient between the score of each domain and the total score of the scale, as shown in Table 4.

Table-4. The correlation coefficient between the score of each domain and the total score of the scale (N= 35).

Domain	Total
Problem sensitivity	0.883**
Fluency	0.703**
Originality	0.929**
Flexibility	0.864**

Table 4 indicates that the correlation coefficient is statistically significant at the level of (0.01). Thus, the scale has a high degree of validity.

- *Reliability of the creative leadership scale*

The reliability was estimated by calculating Cronbach's alpha for each domain of the scale and the split-half methods (Spearman-Brown and Guttman), as shown in Table 5.

Table-5. The reliability of the creative leadership scale (N=35).

Domain	No. of items	Reliability		
		Cronbach's Alpha	Split-half	
			Spearman-Brown	Guttman
Problem sensitivity	11	0.866	0.789	0.782
Fluency	10	0.796	0.705	0.693
Originality	16	0.920	0.871	0.869
Flexibility	14	0.925	0.876	0.876
Total	51	0.957	0.903	0.902

Table 5 shows that the values of the reliability coefficient using Cronbach's alpha ranged from (0.796) to (0.957), whereas the split-half methods (Spearman-Brown and Guttman) ranged from (0.693) to (0.903), indicating the high degree of reliability of the scale.

4.3.2 Second: The thinking styles scale (Harrison & Bramson, 1982)

The thinking styles scale was developed by Harrison and Bramson (1982) including the (synthesist, idealistic, pragmatist, analyst, and realist) thinking styles. It comprised (90) items distributed to (18) daily situations with five possible responses for each situation. Thus, (5) represents the most applicable behavior, and (1) is the least applicable.

- *Validity of the Thinking Styles Scale*

The validity was estimated by calculating the correlation coefficient between the scores on each of the five thinking styles. The results concluded a negative correlation between the synthesist style and both the idealistic and pragmatist styles (Habib, 1995). Moreover, a low correlation was found between thinking styles limited to (0.04-0.45). Elsayed (2003) had concluded a relative independence between these five styles. The correlation coefficient is significant at the level of (0.001) (ElSokkary & Elhageen, 2006). Habib (1995) found that the reliability coefficient for synthesist thinking, idealistic thinking, pragmatist thinking, analyst thinking, and realist thinking is 0.83, 0.78, 0.81, 0.86, 0.80, respectively. Elsayed (2003) utilized Cronbach's alpha to calculate the reliability that scored 0.79 for synthesist thinking, 0.77 for idealistic thinking, 0.76 for pragmatist thinking, 0.74 for analyst thinking, and 0.65 for realist thinking. ElSokkary and Elhageen (2006) found the reliability score 0.81 for synthesist thinking, 0.83 for idealistic thinking, 0.80 for pragmatist thinking, 0.78 for analyst thinking, and 0.84 for realist thinking.

- *The Validity of the Thinking Styles Scale*

The validity was estimated after applying it to 35 educational university leaders in Riyadh using internal consistency, by calculating the Pearson correlation coefficient between the score of each item and the total score of the domain.

Table-6. The correlation coefficient between the score of each item and the total score of the domain (N = 35).

Synthesist thinking style		Idealistic thinking style		Pragmatist thinking style		Analyst thinking style		Realist thinking style	
No. of items	Correlation coefficient	No. of items	Correlation coefficient	No. of items	Correlation coefficient	No. of items	Correlation coefficient	No. of items	Correlation coefficient
1A	0.512**	2A	0.399*	3A	0.339*	4A	0.440**	5A	0.500**
2B	0.486**	1B	0.444**	4B	0.451**	3B	0.502**	5B	0.389*
5C	0.454**	4C	0.457**	1C	0.462**	3C	0.464**	2C	0.494**
4D	0.395*	3D	0.387*	5D	0.483**	1D	0.391*	2D	0.395*
3E	0.476**	1E	0.391*	2E	0.499**	5E	0.399*	4E	0.382*
2F	0.487**	3F	0.484**	4F	0.372*	5F	0.461**	1F	0.455**
1G	0.462**	2G	0.492**	3G	0.389*	4G	0.375*	5G	0.460**
2H	0.404*	1H	0.490**	4H	0.524**	3H	0.364*	5H	0.449**
5I	0.388*	4I	0.372*	1I	0.455**	3I	0.449**	2I	0.493**
4J	0.538**	3J	0.446**	5J	0.398*	1J	0.385*	2J	0.366*
3K	0.345*	1K	0.471**	2K	0.376*	5K	0.454**	4K	0.487**
2L	0.467**	3L	0.462**	4L	0.489**	5L	0.467**	1L	0.488**
1M	0.402*	2M	0.398*	3M	0.495**	4M	0.356*	5M	0.364*
2N	0.607**	1N	0.385*	4N	0.369*	3N	0.441**	5N	0.471**
5O	0.531**	4O	0.449**	1O	0.356*	3O	0.360*	2O	0.492**
4P	0.479**	3P	0.489**	5P	0.467**	1P	0.489**	2P	0.495**
3Q	0.486**	1Q	0.468**	2Q	0.382*	5Q	0.395*	4Q	0.512**
2R	0.395*	3R	0.385*	4R	0.361*	5R	0.442**	1R	0.517**

Note: *Significant at the level of (0.05) **Significant at the level of (0.01).

Table 6 indicates that the correlation coefficient between the score of each item and the total score of the domain is statistically significant at the level of (0.05).

- *Reliability of the Thinking Style Scale*

The reliability was estimated by calculating the reliability coefficient of Cronbach's alpha for each domain of the scale and split-half methods (Spearman-Brown and Guttman), as shown in Table 7.

Table-7. The reliability of the thinking styles scale (N = 35).

Domain	No. of items	Reliability		
		Cronbach's Alpha	Split-half	
			Spearman-Brown	Guttman
Synthesist thinking style	18	0.617	0.628	0.625
Idealistic thinking style	18	0.625	0.648	0.647
Pragmatist thinking style	18	0.572	0.584	0.582
Analyst thinking style	18	0.615	0.621	0.620
Realist thinking style	18	0.612	0.625	0.622

Table 7 shows that the values of the reliability coefficient using Cronbach's alpha ranged from (0.572) to (0.625), whereas the reliability values using split-half methods (Spearman-Brown and Guttman) ranged from (0.582) to (0.648). These values are accepted, suggesting the scale's reliability.

5. RESULTS

5.1. Results of the First Question

To answer this question, the authors calculated the differences in the mean scores of the participants on the creative leadership scale and the hypothetical means of the domains and the total score using One sample t-test, as shown in Table 8.

Table-8. The differences in the mean scores of the participants.

Domains	No.	Hypothetical means	Mean	Standard deviation	"T" value	Significance
Problem sensitivity	60	33	45.80	4.82	20.564	0.000
Fluency	60	30	40.67	4.67	17.702	0.000
Originality	60	48	65.55	8.27	16.447	0.000
Flexibility	60	42	59.88	7.24	19.122	0.000
Total	60	153	211.90	22.15	20.597	0.000

Table 8 shows statistically significant differences at the level of (0.01) in the mean scores of the participants on the creative leadership scale and the hypothetical means of the domains and the total score favoring the participants, suggesting the high level of creative leadership among educational university leaders in Riyadh. This result is consistent with Al Hussein (2018). In contrast, it differs from Al-Ghamdi (2012); Al-Owain (2019) and Yossef and Rakha (2017).

5.2. Results of the Second Question

To answer this question, the authors calculated the mean scores of the participants on each of the five styles measured by the scale and the standard deviation and then arranged them according to the higher mean and if the means are equal, then according to the standard deviation. Table 9 shows the results.

Table-9. Means and standard deviations of thinking styles.

Thinking style	No.	Mean	Standard deviation	Rank
Synthesist	60	50.97	11.56	5
Idealistic	60	53.75	10.36	3
Pragmatist	60	56.17	13.18	2
Analyst	60	52.78	12.70	4
Realist	60	56.33	13.33	1

Table 9 shows that the realist thinking style was ranked first, the pragmatist thinking style ranked second, the idealistic thinking style ranked third, the analyst thinking style ranked fourth, and the synthesist thinking style ranked fifth. This result indicates that the educational university leaders in Riyadh use all five thinking styles with close arithmetic means. While this result agreed with Sofo (2005) it differed from Borlandoe (2005).

5.3. Results of the Third Question

To answer this question, the authors calculated the Pearson correlation coefficient between the domains, the total score of the creative leadership scale, and the five thinking styles, as shown inTable 10.

Table-10. The Pearson correlation coefficient between the domains, the total score of the creative leadership scale, and the five thinking styles.

Creative leadership / Thinking style	Problem sensitivity	Fluency	Originality	Flexibility	Total
Synthesist	0.460**	0.385**	0.539**	0.415**	0.518**
Idealistic	-0.073-	-0.061-	0.083	0.196	0.066
Pragmatist	-0.401-**	-0.322-*	-0.557-**	-0.477-**	-0.519-**
Analyst	0.506**	0.431**	0.634**	0.560**	0.621**
Realist	-0.428-**	-0.378-**	-0.585-**	-0.574-**	-0.579-**

Table 10 illustrates a statistically significant positive relationship at the level of (0.01) or less between the domains of the creative leadership scale, its total score, and the (synthesist-analyst) thinking styles. Moreover, a statistically significant negative relationship at the level of (0.05) or less was found between the domains of the creative leadership scale, its total score, and the (pragmatist-realist) thinking styles. No statistically significant relationship was found between the domains of the creative leadership scale, its total score, and the idealistic

thinking style. After reviewing the literature, no study linked creative leadership and thinking styles except for Al-Shammari (2010).

5.4. Results of the Fourth Question

To answer this question, the authors revealed the moderation of the subgroup's distribution. The results of the Smirnov-Kolmogorov Test and the Shapiro-Wilk Test showed non-moderation in the distribution. Accordingly, the authors utilize the Mann-Whitney Test that gave the results shown in Table 11.

5.5. University Type

Table-11. The results of the Mann-Whitney Test for differences in the level of creative leadership.

Creative leadership	University type	No.	Means of ranks	Sum of ranks	"Z" value	Significance
Problem sensitivity	Public	49	32.14	1575.00	-1.544-	0.123
	Private	11	23.18	255.00		
	Total	60				
Fluency	Public	49	30.98	1518.00	-0.451-	0.652
	Private	11	28.36	312.00		
	Total	60				
Originality	Public	49	31.38	1537.50	-0.823-	0.411
	Private	11	26.59	292.50		
	Total	60				
Flexibility	Public	49	32.59	1597.00	-1.968-	0.049
	Private	11	21.18	233.00		
	Total	60				
Total	Public	49	31.99	1567.50	-1.395-	0.163
	Private	11	23.86	262.50		
	Total	60				

Table-12. The results of the Mann-Whitney Test for differences in the level of thinking styles.

Thinking style	University type	No.	Means of ranks	Sum of ranks	"Z" value	Significance
Synthesist	Public	49	30.87	1512.50	-0.360-	0.719
	Private	11	28.86	317.50		
	Total	60				
Idealistic	Public	49	30.65	1502.00	-0.152-	0.879
	Private	11	29.82	328.00		
	Total	60				
Pragmatist	Public	49	29.70	1455.50	-0.760-	0.447
	Private	11	34.05	374.50		
	Total	60				
Analyst	Public	49	31.57	1547.00	-1.031-	0.302
	Private	11	25.73	283.00		
	Total	60				
Realist	Public	49	29.64	1452.50	-0.818-	0.413
	Private	11	34.32	377.50		
	Total	60				

Table 11 indicates statistically significant differences at the level of (0.05) in the means of ranks of participants' scores on the flexibility domain according to university type (public-private), favoring educational leaders at public

universities. There were no statistically significant differences between the means of ranks of participants' scores in the remaining domains of the creative leadership scale and its total score according to university type (public-private).

Table 12 indicates no statistically significant differences between the means of ranks of participants' scores in all domains of the thinking styles scale according to university type (public-private).

5.6. Gender

Table-13. The results of the Mann-Whitney Test in creative leadership according to gender.

Creative leadership	Gender	No.	Means of ranks	Sum of ranks	"Z" value	Significance
Problem sensitivity	Male	20	29.78	595.50	-0.228-	0.819
	Female	40	30.86	1234.50		
	Total	60				
Fluency	Male	20	31.33	626.50	-0.260-	0.795
	Female	40	30.09	1203.50		
	Total	60				
Originality	Male	20	30.13	602.50	-0.118-	0.906
	Female	40	30.69	1227.50		
	Total	60				
Flexibility	Male	20	28.78	575.50	-0.544-	0.587
	Female	40	31.36	1254.50		
	Total	60				
Total	Male	20	28.98	579.50	-0.478-	0.632
	Female	40	31.26	1250.50		
	Total	60				

Table 13 illustrates no statistically significant differences between the means of ranks of the participants' scores in all domains and the total score of the creative leadership scale according to gender. This finding agrees with the results of Al-Ghamdi (2012) and differs from the results of Eid (2015).

Table-14. The results of the Mann-Whitney test in thinking styles according to gender.

Thinking style	Gender	No.	Means of ranks	Sum of ranks	"Z" value	Significance
Synthesist	Male	20	27.13	542.50	-1.107-	0.268
	Female	40	32.19	1287.50		
	Total	60				
Idealistic	Male	20	24.78	495.50	-1.905-	0.057
	Female	40	33.36	1334.50		
	Total	60				
Pragmatist	Male	20	34.88	697.50	-1.400-	0.162
	Female	40	28.31	1132.50		
	Total	60				
Analyst	Male	20	27.10	542.00	-1.096-	0.273
	Female	40	32.20	1288.00		
	Total	60				
Realist	Male	20	35.15	703.00	-1.488-	0.137
	Female	40	28.18	1127.00		
	Total	60				

Table 14 indicates no statistically significant differences between the means of ranks of participant's scores in the domains of the thinking styles scale according to gender. The differences in the idealistic thinking style almost reached the level of significance (0.05), favoring females.

This result is consistent with Al-Atoum (2007) that revealed no statistically significant differences in thinking styles according to gender and Borlandoe (2005) that showed that the idealistic thinking style is the most preferred among female leaders.

6. LIMITATIONS

The study suffers some difficulties, such as the weak response of the participants to the scales, making it difficult to generalize the results because of the relatively small sample size.

The study did not cover some variables that may affect in one way or another creative leadership and thinking styles, such as experience, personality, and institutional needs.

7. RECOMMENDATIONS

It is important to include creativity features for the criteria of screening and nominating educational leaders and to develop creative leadership and its characteristics in the preparation and qualification programs for educational leaders.

Further studies should include some variables that may affect creative leadership and thinking styles, such as experience, personality, and institutional needs. Moreover, leaders should be selected based on their thinking styles. Private universities should empower their leaders to practice flexibility to achieve creative leadership.

Funding: This research paper was funded by the Deanship of Scientific Research at Princess Nourah bint Abdulrahman University, through the Research Funding Program (Grant No#RFP-1440-1).
Competing Interests: The authors declare that they have no competing interests.
Acknowledgement: Both authors contributed equally to the conception and design of the study.

REFERENCES

Abdul-Maksoud, M. (2006). *Management leadership.* Amman: Al-Mujtamaa Al-Arabi for Publishing and Distribution.

Al-Atoum, B. (2007). *Prevailing styles of thinking among school principals in Irbid.* M.A. Thesis. Yarmouk University, Jordan.

Al-Azzawi, R. (2008). *Introduction to methods of research.* Jordan: Dar Dejlah.

Al-Fayoumi, I. (2007). Leadership in libraries and information centers. Retrieved from http://alyaseer.net/vb/showthread.php?t=9739.

Al-Ghamdi, F. (2012). *Degree of practice and training needs among creative leadership as conceived by academic leaders at Albaha University* M.A. Thesis. Umm Al-Qura University, Saudi Arabia.

Al-Owain, A. (2019). The reality of practicing creative leadership among the leaders of the general administration of education in Qassim from the perspective of the educational supervisors. *Journal of Scientific Research in Education, 9*(20), 125-161.

Al-salami, F. (2012). *Creative leadership and its relationship with the organizational climate at public intermediate schools in Jeddah.* M.A. Thesis. Umm Al-Qura University, Saudi Arabia.

Al-Serafy, M. (2003). *Leading management.* Amman: Dar Al-Safa for Publishing and Distribution.

Al-Shammari, F. (2010). *Thinking styles and relationship to leadership skills among high and moderate achievers in Kuwait.* M.A. Thesis. Arabian Gulf University, Bahrain.

Al Hussein, S. (2018). Creative leadership among elementary school principals. *International Journal of Educational and Psychological Sciences, 15*(1), 213-256.

AlSalem, M., & Saleh, A. (2000). Human resources management. Baghdad, Iraq: University of Baghdad Press.

Altaeb, E. (2006). *Thinking styles: Contemporary theoreies, studies, and research.* Cairo, Egypt: Alam Alkotob.

Azeez, I. (2015). Thinking styles among secondary school counselors. *College of Education Journal for Educational and Humanities Sciences, 1*(19), 657-680.

Borlandoe, J. (2005). *An examination of thinking styles of community college women administrators in three mid-Atlantic states.* Delaware: Wilmington University.

Chen, J. (2018). A study on the correlations between thinking styles and academic achievement in web-based environmental education. *Ekoloji, 27*(106), 2045-2051.

Crane, D. (1989). *The alert scale of cognitive style.* USA: Western Michigan University.

Donald, P. (2000). *The future universities from an African perspective.* Paper presented at the Symposium on the Future of Universities, Santiago, Chile.

Eid, H. (2015). A paradigm to achieve creative leadership among university leaders in Saudi Arabia. *Journal of Arab studies in Education and Psychology, 61*, 387-426. Available at: https://doi.org/10.12816/0022451.

Elsayed, A. (2003). Modeling the relationship between thinking styles and the efficiency of the cognitive representation of information among university students. *The Egyptian Journal of Psychological Studies, 13*(39), 9-139.

ElSokkary, I., & Elhageen, A. (2006). The trait of emotional intelligence and its relationship to thinking styles among university students. *Journal of the Faculty of Education in Kafrelsheikh, 4*(6), 1-64.

Epstein, S., Pacini, R., Denes-Raj, V., & Heier, H. (1996). Individual differences in intuitive–experiential and analytical–rational thinking styles. *Journal of Personality and Social Psychology, 71*(2), 390-405.

Feither, F. (2002). Internationalization of higher education in Thailand. Melbourne: Monash University.

Habib, M. (1995). *Studies in thinking styles* (1st ed.). Egypt: The Egyptian Renaissance Library.

Harrison, A., & Bramson, R. (1982). *Styles of thinking.* New York: Doubleday.

Harrison, A., & Bramson, R. (2002). *The art of thinking.* New York: Berkley Publishing Group Culture.

Harrison, A., & Bramson, R. (1977). *InQ administration and interpretation manual.* Berkeley: Branson, Parlette, Harrison and Associates.

Imran, M. (2014). *Creative leadership for the development of university education from the perspective of faculty members.* Libya: Dar-Alzawia.

Jones, M. (2006). *Thinking styles differences of female college and university presidents: A national study.* Ph.D. Dssertation, Marshall University, Huntington, USA.

Khairallah, G. (2009). *Administrative creativity.* Amman: Dar Osama for Publishing and Distribution.

Makahleh, H. (2014). *The degree of practicing creative leadership and relationship to their supporting level for academic productivity of faculty members among the deans of colleges of pharmacy at Jordanian universities.* M.A. Thesis, The Hashemite University, Jordan.

Margret, F. M., & Lavanya, T. (2017). Hemispheric dominance, thinking style preferences and emotional intelligence among College students. *Journal of Psychosocial Research, 12*(1), 21-31.

Minbashian, A., Birney, D. P., & Bowman, D. B. (2019). The thinking styles of managers: Dimensionality, profiles and motivational antecedents. *Australian Journal of Management, 44*(1), 70-90. Available at: https://doi.org/10.1177/0312896218775150.

Paik, Y., Lee, J., & Pak, Y. (2019). Convergence in international business ethics? *Journal of Business Ethics, 156*(3), 839-855.

Qaraeen, K. (2000). Academic and administrative problems facing faculty members at the Hashemite University and relationship to some variables. *Dirasat Journal, 27*(2), 261-274.

Schutte, N. S., Malouff, J. M., Hall, L. E., Haggerty, D. J., Cooper, J. T., Golden, C. J., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences, 25*(2), 167-177.

Sofo, F. (2005). Thinking styles of modern Chinese leaders: Independence and exploration in an historically conditional China. *Australian Journal of Adult Learning, 45*(3), 304-330.

Sternberg, R. (2002). *Thinking styles.* UK: Cambridge University Press.

Sternberg, R. J. (1988). Mental self-government: A theory of intellectual styles and their development. *Human Development, 31*(4), 197-224.

Subuh, M. (2015). Thinking styles and relationship to decision-making among elementary school teachers. *Journal of the Faculty of Education in Port Said, 18*(2), 844-871.

Twiqat, M. (2007). *Developing a training program in creative leadership for deans and heads of academic departments at Jordanian universities in the light of contemporary administrative trends.* Ph.D. Dissertation, Amman Arab University, Jordan.

Yossef, S. A. M., & Rakha, A. H. H. (2017). The efficiency of personal and administrative skills for managerial leadership on administrative creativity at Najran University. *Journal of Education and Practice, 8*(6), 113-122.