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Exploring the relationship between thinking skills and school leaders' performance

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Abstract:

In today's world of education, the importance of teaching has increased, and it is considered that teachers and school leaders should think effectively to help students perform well. In this context, this research study focused on discussing the relationship between thinking skills and school leaders' performance. For this purpose, different kinds of literature were investigated to gather the appropriate data. Further, the questionnaire survey method was used to collect data from a sample size of 50 respondents. The research participants include principals, teachers, and assents principals from different schools. The questionnaire was structured to include predictors, such as prior experience, education level, age, job changes, and thinking skills development programs that may have a positive bearing on the overall thinking skills of leaders and may contribute to improve their performance. Through the use of statistical analysis, a strong relationship is thus proved between the thinking skills and school leaders' performance.

Keywords: Leadership, thinking skills, performance, school leaders

Introduction

The use of the concept of leadership, administration, and management varies across different countries. In countries such as Australia, New Zealand, Canada, and the US and UK, the school leaders help to raise the standard of the school and promote improvements in the school policies; however, this is not the case in all countries (Day and Sammons, 2013). Educational institutes function differently from that of their regional, national and historical policies, which influence their work and therefore impact the school leaders' role. In an educational policy, school leadership is prioritized among all other factors across the globe. School autonomy has increased due to which there is a greater emphasis on schooling, which has made it necessary to reconsider the role of the school leader. It is observed that school leaders always search for ways to improve their individual performance.

Critical thinking enables leaders at every level to understand the impact of their decisions on the business as a whole and ensures both alignment with organizational goals and accountability for results. That is why companies have relied on the Watson-Glaser Critical Thinking Appraisal, a widely used assessment tool for evaluating the cognitive ability of current and future leaders (Rizak, 2017).

Background:

An effective performance of school leaders is dependent on the key skills and qualities of the leaders in managing and dealing with the issues of the dynamic school environment. In this regard, it is important to explore the relevant academic literature related to the existing knowledge so as to derive the findings of the literature and retrieve the importance of thinking skills related to the school leaders' performance. Because of that, the problem of the study is to determine if the thinking skills programs are important to the leaders and can contribute to their performance or not.

Introduction of thinking skills

Thinking skills can be signified as such mental processes of the individuals that are utilized for solving critical issues, framing decisions, analyzing ideas, organizing data, and constructing plans. There are several types of thinking skills programs such as CoRT, 6 Hats, critical thinking, and creative thinking. The thinking skills can be divided into two categories: cognitive and reflective thinking skills. The cognitive thinking skills include

information gathering, productive thinking skills, and basic understanding of concepts. The reflective skills include planning, supervising, and analyzing the usage of the cognitive skills. Thinking skills can be beneficial for students and teachers. For students, these skills develop and promote their engagement whereas for teachers they make their teaching effective when they are inculcated their lessons (Fleetham, 2009).

Thinking skills program

CoRT

As per Assaf (2009), Cognitive Research Trust (CoRT) is one of the leading and biggest global programs developed by Edward De Bono for teaching thinking skills. This program comprises six units, where each portion includes ten lessons. The six portions focus on several aspects of thinking such as interaction, creativity, organization, action, information, and feeling. The existing literature indicates that the importance of CoRT thinking program is that it specifically directs focus on the motive behind several thinking aspects for crystallizing those aspects into distinct tools, which can be intentionally or artificially utilized (Assaf, 2009).

6 hats thinking:

The 6 hats thinking is a framework suggested by Edward de Bono and is a simplistic and useful process of parallel thinking that aids individuals to become highly focused, productive, and intellectually involved in classroom discussions. This thinking technique suggests 6 differing perspectives with regard to a situation's complexity and these perspectives are placed under 6 different hat colors such as white, red, black, yellow, green, and blue. White signifies facts, red signifies emotions, black signifies logical negative view, yellow signifies logical positive view, green signifies creativity, and blue signifies controller of processes. The findings reveal that 6 hats thinking model is beneficial as it is representative of an individual's emotional status and differing mind frames. The literature findings also reveal that 6 hats thinking helps in promoting focused thinking and enriched decision-making by giving due consideration to all perspectives of thinking (Value Based Management, 2016).

Critical thinking and creative thinking:

According to Coughlan (2008), critical thinking includes logical reasoning and rational thinking skills such as comparison, categorization, sorting, determining cause/effect relationship, inductive and deductive reasoning, and forecasting. The findings of the literature signify that critical

thinking is a significant technique as it helps in identifying a broad range of subjective evaluations of the objective data. It is also determined that critical thinking promotes an attitude of sensible reflective thinking for determining what should individuals believe or do (Coughlan, 2008).

According to Johnson and Lamb (2011), creative thinking consists of a new invention by new ideas, thereby encouraging divergence of thoughts in individuals. The main skills that support creative thinking are originality, brainstorming, associative thinking, and metaphorical relationships (Johnson and Lamb, 2011). The findings of the literature indicate that creative thinking is essential for encouraging self-expression, individualism, as well as the development of problem- solving and decision-making skills. It is also determined that creative thinking encourages innovative solution towards complex problems (Turner, 2013).

School leaders' performance:

According to Bendikson et al. (2012), the school leaders' performance is determined by the instructional leadership of the principal that is focused on the improvement and enhancement of the overall school's performance. The school leaders' performance is measured by the fulfillment of various direct and indirect leadership dimensions within the school. The indirect dimensions of performance assure a disciplined environment in school, strategic resourcing, and solving complex issues. The direct dimensions that influence the performance include goal setting, professional development, quality teaching, and development of collective responsibility. The literature indicates that the instructional leadership of principals positively influences the performance of school teachers (Bendikson et al., 2012).

According to Marks and Printy (2003), the performance of the school is influenced by the transformational leadership of the school leaders that aims at encouraging collective understanding, establishing quality pedagogy, and supporting the professional development of school teachers. The literature also reveals that the high performance of the school leaders is significant to the overall enrichment of the school value through curriculum development and school improvement (Marks and Printy, 2003).

Relationship of thinking skills to school leaders' performance:

According to Bolanle (2013), school effectiveness is influenced by the technical, conceptual, and transformative leadership skills of the school leaders that are representative of their performance. The literature highlights that the school effectiveness is connected with strategic thinking of the school leaders and the strategic thinking skills are an essential part of the conceptual skills of the school leaders. The strategic thinking of school leaders is focused on school improvement and attainment of the school objectives by effectively dealing with the complex challenges (Bolanle, 2013).

According to Brooks-Young (2002), there is a strong connection between the performances of school leaders and thinking skills. The literature focuses that critical thinking skills are essential for school leaders as they help the leaders in attaining top-level thinking, rational decision-making, as well as problem-solving skills for school's improvement and enhancement of instructional methods with the help of technological support (Brooks- Young, 2002).

In the opinion of Bellanca and Fogarty (2015), school leaders, who use critical thinking skills and creative thinking skills for determining multiple solutions for several, complex school problems by integrating communication and collaboration, are believed to be high performing leaders. Furthermore, the literature also reveals that the critical thinking skills help the school leaders for determining and deciding the best resources required for the school's development and improvement. With the usage of critical thinking skills, a school leader can think rigorously to determine innovative methods so as to improve the school's scenario and facilitate school development (Bellanca and Fogarty, 2015).

According to Campbell-Whatley et al. (2016), a school leaders' performance is affected by the high order thinking skills at all relevant instances of the document that require the leader to have a balanced mixture of rational thinking, reflective thinking, and cognitive thinking to deal with the complex problems that he/she faces at school. High order thinking is essential for school leaders so as to enable assessment and monitoring in the school in order to determine the disparities in students' achievements and teachers' instructions. Consequently, the high order thinking in school leaders enable them in establishing innovative objectives and goals for the school and in creating attainable criteria. The successful implementation of critical skills by school leaders for dealing with different school issues and formulating measures for school's improvement depicts the high performance of the school leaders (Campbell-Whatley et al., 2016).

MATERIALS AND METHODS

Subjects:

The sample consisted of 50 respondents comprising principals, teachers, and assistant principals from Medina school district at Saudi Arabia. The random sampling method was used. The sample population provided information on the teachers' performance and thinking skills. The number of subjects was 3 and included principals, teachers, and assistant principals because these groups could provide with the most relevant and appropriate information needed for deriving accurate results. The sample size was 50 out of 351 principals and assistant principals, 8000 teachers, and this was optimal as lesser than this size would indicate that the valid information cannot be retrieved and a greater sample size would make it difficult to gather the data thereby making data comprehension also difficult.

Moreover, the participants were selected for face to face interview on the basis of exclusion and inclusion criteria as it was essential to select participants from a sample of principals, teachers, and assistant principals having at least 20 years of experience. This sample size was chosen so as to optimize the external validity of the study.

Variables:

The variables that were taken in this research study included qualification of the principals, teachers and assistant principals. The other variables were working experience, number of job changes, critical situation faced, age, and gender.

Pilot studies:

The pilot study constitutes the fundamental stage of the research process, and it examines the feasibility of an approach and identifies the modifications needed in designing the larger study (Hassan et al., 2006). Through pilot testing, the researcher can analyze whether any questions make the participants feel uncomfortable, and such questions are required to be eliminated for improvement (Thabane et al., 2010). Pilot testing is done before the real or main test or large scale quantitative research to understand the time taken to complete the survey in real-time and avoid the wastage of time and money on a poorly designed project. The pilot experiment is conducted on the members of the relevant population and not on the

participants, who will be the part of the final sample. This is because, if the pilot test is done on the final sample, then the later behavior of the research subject may get influenced.

The pilot study gives a chance to judge the data for analytical and statistical procedures and evaluate their usefulness (Blessing and Chakrabarti, 2009). It measures the problems and unexpected difficulties beforehand, which provides an opportunity to reduce the number of unexpected problems in the main research. A pilot testing was performed so as to ensure that the questions were easily and clearly understood by everyone. In this research project, the pilot study was conducted to verify whether or not the questions were relevant to the objectives of the study (Hassan et al., 2006). A pilot study was performed using an evaluation sheet to evaluate the validity of the questionnaires, and assess its comprehensiveness and clarity. The sample used for the pilot study was taken from 2 schools including 2 principals, 1 assistant principal, and 3 teachers. Pilot study, in this research study, was performed to evaluate the time needed for responding to each statement in the questionnaire and observe the level for each statement to determine if the level was difficult, moderate, or easy. The main outcome of the pilot study was that some of the questions were not easy to understand, and therefore, the language of the questions was altered to enhance their understandability.

Validity and Reliability

Materials used in this research study included different instruments such as books, computers, and SPSS tool. Data analysis serves as the most important part of the research study as it is the part of the research study that deals with analyzing the results related to the data and information from a variety of data collection methods. In terms of this research study, data analysis was done through statistical tools such as SPSS, which helps to perform statistical analysis through which the data was summarized (Aarts and Nonne man, 2007). Excluding this, a closed-ended interview questionnaire was also prepared with dichotomous responses. Internal Consistency Reliability: The consistency of results across items, often measured with Cronbach's Alpha.

Procedures:

Under this research study, the data was gathered through both quantitative and qualitative data collection methods. Data collection was done using primary and secondary sources. The primary data was collected by conducting interviews with principals, teachers and assistant principals

in schools and secondary data was collected from books, journals and academic publications (Crowther and Lancaster, 2012).

Major ethical considerations:

In this research study, the limitations were associated with both qualitative and quantitative studies. The limitations of the qualitative study include validity and reliability. As qualitative research replicates the studies, it is possible that information might be perceived in a different manner, which might change the meaning of the statement (Warden and Chen, 2014). Therefore, the reliability of the content is lost, and the information is not valid. Similarly, in quantitative research, the information can be collected through different methods such as questionnaire or interview, which might be time-consuming if the respondents delay in providing their responses (Shipman, 2014). The research work is essential to be free from any biases by providing all the respondents with an equal chance to participate in the research work and provide with their opinions. No discrimination should be made on the basis of color, religion, caste, culture, and other factors (Iltis, 2006).

Data reduction/statistical analyses:

The study is based on analysis of qualitative data for which a closed-ended dichotomous response questionnaire was administered to the selected sample so as to record the responses of each respondent. We employed cross-tabulation and one sample chi square test through SPSS to summarize the qualitative data of the study. SPSS (Statistical Package for Social Sciences) was used to analyze data and draw inferences. Chi square test was used to compare the difference between observed and expected means. We have included respective tables in the study which report the observed significance (p-value) and compared it with the rejection rule respectively for one-tailed and two-tailed tests for each hypothesis.

RESULTS

Data analysis is the most significant phase for this research and helps in transforming raw data into meaningful information that provides empirical evidence for the research. It helps in presenting the data collected in an organized and sequential manner to make it easy to understand and interpret in terms of the research aims and objectives (Blaikie, 2003). This phase summarizes qualitative data through the use of SPSS. Inferences were drawn from the data collected through the dichotomous questions in the closed-

ended interview questionnaire. Contextual and relevant questions were included in the questionnaire and this established its validity.

This study aimed to investigate the relationship between thinking skills and school leaders' performance as also the impact of thinking skills programs such as CoRT, 6 hats, critical thinking, and creative thinking on the performance of leaders. This study employed two methods of qualitative data analysis, the first being cross-tabulation. Cross-tabulation is a cardinal tool to summarize qualitative data. Cross-tabulation is frequently used in analyzing categorical variables, which either follows a nominal or ordinal scale. The scale followed by the primary data observed in this study was nominal. The sample size taken was 50; and the sampling method administered was simple random sampling for this study.

Table 1 represents that the majority (39 out of 50) of the respondents were 25 years old and only 11 respondents belonged to an age group that was less than 25. Reported significance (p-value) of $(0.78 > 0.025)$ exceeds the rejection criteria and therefore, null hypothesis was not rejected. Thus, it is concluded that the age of person is insignificant to determine the performance of school leaders.

Table 2 apparently reveals that maximum (23 out of 31) graduates were good performers and only 7 graduates belonged to the "good performance" group. As reported by the chi-square test, significance of "0.009" was determined for the two-tailed test. Therefore, in order to test our hypothesis that whether or not the level of education was linked with the performance of school leaders, we ran the data through 2-tailed chi square test (significance = $(0.05/2) = 0.025$). The criteria of rejection for a two-tailed test was $p\text{-value} \leq 0.025$ and the reported significance is $0.009 < 0.025$. Therefore, H_0 (Null Hypothesis) was rejected. It is thus concluded that higher the education level higher is the performance of the school leader.

Table 3 shows that 34 people attended thinking skills programs like CoRT, 6 hats, critical thinking, and creative thinking and 16 did not attend. Two-tailed significance of "0.004" was reported by the chi-square test. Therefore, in order to test our hypothesis that whether or not thinking skills programs like CoRT, 6 hats, critical thinking, and creative thinking have an association with the performance of school leaders, we fed the data into 2-tailed chi square test (significance = $(0.05/2) = 0.025$). The criterion of rejection for a two-tailed test was $p\text{-value} \leq 0.025$ and the reported significance was $0.004 < 0.025$. Therefore, H_0 (Null Hypothesis) was rejected. It is therefore concluded that thinking skills programs like CoRT, 6 hats, critical thinking, and creative thinking positively influence the performance of school leaders.

Table 4 shows that the respondents who underwent more than two thinking skills programs have occupied their position in the “good performance” group. Out of the total 35 respondents who underwent more than two training skills programs, only 10 were found to be “bad performers.” Table 4b reports significance of “0.012” through two-tailed chi-square test. Therefore, in order to test our hypothesis that whether or not the number of training skills programs attended influence the performance of the school leader, data was subjected to two-tailed chi square test (significance = $(0.05/2) = 0.025$). The criterion of rejection for a two-tailed test is $p\text{-value} \leq$ and reported significance is $0.012 < 0.025$.

Table 5 shows that 32 of the respondents had an experience of 2 or more years as a leader at school level whereas 18 respondents had an experience of less than 2 years as a school level leader. Significance of “0.051” was derived as reported by the chi-square test is for two-tailed test. Therefore, in order to test our hypothesis that whether or not the number of years of experience as a school leader exerts any influence on the performance of school leader, we ran the data through 2-tailed chi square

Table 1.

Cross-tabulation.

*What is your age * How is the performance of school leader? Cross-tabulation*

Count	How is the performance of school leader?		Total
	Good performance	Bad performance	
What is your age?	Less than 25 years	4	11
	25 years or more	16	39
Total		20	50

Table 1b:*Chi-square test.*

Parameter	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	.078 ^a	1	0.78		
Continuity Correction ^b	0	1	1		
Likelihood ratio	0.078	1	0.78		
Fisher's exact test				1	0.533
Linear-by-linear association	0.076	1	0.783		
No. of valid cases	50		0.78		

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.40.

b. Computed only for a 2×2 table.

Table 2.*Cross-tabulation.**What is your education * How is the performance of school leader?*

Count	How is the performance of school leader?		Total
	Good performance	Bad performance	
	What is your education?		
Post graduate	23	8	31
Graduate	7	12	19
Total	30	20	50

Table 2b.*Chi-square test.*

Parameter	Value	df	Asymp. sig. (2-sided)	Exact Sig. (1-sided)
			Exact Sig. (2-sided)	
Pearson Chi-square	6.848 ^a	1	0.009	
Continuity correction ^b	5.38	1	0.02	
Likelihood ratio	6.89	1	0.009	
Fisher's exact test			0.016	0.01
Linear-by-linear	6.711	1	0.01	
No. of valid cases	50			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.60.

b. Computed only for a 2x2 table.

Therefore, H₀ (Null Hypothesis) is rejected. It is concluded that number of training programs bears a significant influence on the school leaders' performance

Table 3. Cross-tabulation.

*Do you have attended thinking skills programs like CoRT, 6 hats, Critical thinking, and Creative Thinking programs? * How is the performance of school leader?*

Count	How is the performance of school leader?		Total	
	Good performance	Bad performance		
Have you attended thinking skills programs like CoRT, 6 hats, critical thinking, and creative Thinking programs?	Yes	25	9	34
	No	5	11	16
Total		30	20	50

Table 3b.*Chi-square test.*

Parameter	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1- sided)
Pearson Chi-Square	8.104 ^a	1	0.004		
Continuity correction ^b	6.438	1	0.011		
Likelihood ratio	8.128	1	0.004		
Fisher's exact test				0.006	0.006
Linear-by-linear association	7.941	1	0.005		
No. of valid cases	50				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.40.

b. Computed only for a 2×2 table.

Table 4. Cross-tabulation.

*How many thinking skills programs attended for thinking skills development? *
How is the performance of school leader?*

Cross- tabulation

Count		How is the performance of school leader?		Total
		Good	Bad	
How many thinking skills programs have you attended for developing your thinking skills?	Less than 2 programs	5	10	15
	2 programs or more	25	10	35
Total		30	20	50

Table 4b.*Chi-square test.*

	Value	df	Asymp. Sig. (2 sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	6.349 ^a	1	0.012		
Continuity correction ^D	4.861	1	0.027		
Likelihood ratio	6.327	1	0.012		
Fisher's exact test				0.025	0.014
Linear-by-linear association	6.222	1	0.013		
No. of valid cases	50				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.00.

b. Computed only for a 2×2 table

test (significance = $(0.05/2) = 0.025$). The criterion of rejection for a two-tailed test is $p\text{-value} \leq 0.025$ and reported significance is $0.022 < 0.025$. Therefore, H_0 (Null Hypothesis) is rejected. It can be inferred that the number of years of experience is positively associated to the performance of school leaders. Cross-tabulation as depicted in Table 6 shows that 33 respondents had 3 or more job changes while 17 had less than 3 job changes. In addition, 26 of the total of 33 respondents who had 3 or more job changes were recorded for good leadership performance. Significance of "0.0001" as reported by the chi-square test was for two-tailed test. Inference was made that job changes which implies different jobs contributing to broad skill-set and experience of a person were found to be positively associated to the performance level of school leaders.

Table 5. Cross-tabulation

*How much is working experience as school leader? * How is the performance of school leader? Cross-tabulation*

Count	How is the performance of school leader?		Total	
	Good performance	Bad performance		
How many years of experience do you have as a school leader?	Less than 2 years	7	11	18
	2 years or more	23	9	32
Total		30	20	50

Table 5b

. *Chi-Square test.*

Parameter	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	5.223 ^a	1	0.022		
Continuity correction ^b	3.939	1	0.047		
Likelihood ratio	5.22	1	0.022		
Fisher's exact test				0.035	0.024
Linear-by-linear association	5.118	1	0.024		
No. of valid cases	50				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.20.

b. Computed only for a 2×2 tabl

Table 6.*Cross-tabulation.**Number of job changes as school leader? * How is the performance of school*

Count	How is the performance of school leader?		Total	
	Good performance	Bad performance		
How many jobs have you changed as a school leader?	Less than 3 jobs	4	13	17
	3 jobs or more	26	7	33
Total		30	20	50

Table 6b.*Chi-square test.*

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	14.275 ^a	1	0		
Continuity correction ^b	12.066	1	0.001		
Likelihood ratio	14.645	1	0		
Fisher's exact test				0	0
Linear-by-linear association	13.99	1	0		
No. of valid cases	50				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.80.

b. Computed only for a 2×2 table.

A clear observation from Table 7 can be made that 24 out of total 35 respondents were faced with critical situations in the past and were able to tackle them successfully. Significance of “0.059” as reported by the

Table 7. Cross-tabulation

Count		How is the performance of school leader?		Total
		Good performance	Bad performance	
How many critical situations have you tackled successfully?	Less than 5	6	9	15
	5 or more	24	11	35
Total		30	20	50

Table 7b.

Chi-Square test.

Parameter	Value	df	Asymp. Sig. (2-sided) Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-square	3.571 ^a	1	0.059	
Continuity correction ^b	2.48	1	0.115	
Likelihood ratio	3.537	1	0.06	
Fisher's exact test			0.114	0.058
Linear-by-linear association	3.5	1	0.061	
No. of valid cases	50			

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.00.

b. Computed only for a 2×2 table.

chi-square test is for two-tailed test. Therefore, in order to test our hypothesis that whether or not the critical situations tackled successfully in the past bear any influence on the performance of leaders, we ran the data through 2-tailed chi square test (significance = $(0.05/2) = 0.025$. The criterion of rejection for a two-tailed test was $p\text{-value} \leq 0.025$ and the reported significance was $0.059 > 0.025$. Therefore, H_0 (Null Hypothesis) is not rejected. It was concluded that whether or not a person was faced with critical situations in the past is not linked to the performance of leaders.

Summary

Using SPSS, the data was summarized using cross- tabulation and subsequently, respective hypothesis were tested using chi-square test. The questionnaire was structured to include predictors, such as prior experience, education level, age, job changes, and thinking skills development programs that may have a positive bearing on the overall thinking skills of leaders and may contribute to improve their performance. Through the use of statistical analysis, a strong relationship is thus proved between the thinking skills and school leaders' performance.

DISCUSSION

From the above analysis, it has been observed that the performance of school leaders is neither related to age. From the above analysis, it has also been determined that higher the education level, better is the performance of the school leader. It has been observed from the literature and data analysis that the thinking skills program such as CoRT, 6 hats, critical thinking, and creative thinking have a positive impact on the school leaders' performance. It has also been observed that training programs have a crucial impact on the performance of the school leaders. Further, it has also been found that the years of experience, job changes, and critical situations faced by the person have a significant impact on the performance of the school leaders. The limitation of the study is that it was a time- consuming process as it required analysing the performances of several school leaders and this took a lot of time for the data collection process. From the overall analysis, it has been observed that thinking skills program is essential for the school leaders' performance. Therefore, it is recommended that the school leaders should

attend the critical and creative thinking skill programs and workshops to enhance their performances.

Conclusion

The present environment requires people who have different abilities including critical thinking, creative thinking, and problem-solving skills. These skills help in the process of problem-solving and further improve the performance and results for success. In this context, it is observed that the quality of the leader and the role of the head teacher or principal are very crucial for the school's performance. It is observed that teachers and principals who have attended the thinking skill program and inculcated creative and critical thinking skills have demonstrated a high school performance. These skills help the school leaders to perform effectively and develop a school with effective thinking skills. Some school leaders were able to think clearly and thoroughly and were able to direct their attention in a single direction. The program includes a powerful tool, six thinking hats, which enable an individual to be collaborative and creative, as well as to think critically and communicate effectively. From the above results and findings, it is analyzed that school leaders who develop critical thinking abilities are able to effectively maintain the school performance. These skills play a significant role in enhancing the competencies of head teachers and principals.

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APPENDIX

Questionnaire

Dear Participants,

I am conducting a research to understand the relationship between school leaders' performance and thinking skills developed through thinking skills programs, including CoRT, 6 hats, critical thinking, and creative thinking. I am undertaking this research only for publishing purposes. I assure you that no data or any other relevant information will be revealed to any person or authority. I ensure that no personal information concerning the participants will be disclosed to any person or authority and will be kept confidential. I desire to thank all the participants for your enthusiastic support in providing the research data (primary data). Please begin with the questionnaire given below:

Questions:

Please select one option for each question:

1. What is your age?
 - a) Less than 25 years
 - b) 25 years or more

2. What is your education?
 - a) Post graduate
 - b) Graduate

3. Have attended thinking skills programs, such as CoRT, 6 hats, critical thinking, and creative thinking programs?
 - a) Yes
 - b) No

4. How many thinking skills programs have you attended for thinking skills development?
 - a) Less than 2 programs
 - b) 2 or more programs

5. How many years of experience do you have as a school leader?
 - a) Less than 2 years
 - b) 2 years or more

6. How many jobs have you changed as a school leader?
 - a) Less than 3 jobs
 - b) 3 or more jobs

7. How many critical situations have you faced and have tackled successfully?
 - a) Less than 5
 - b) 5 or more

8. How do you rate your performance of school leader?
 - a) Good performance
 - b) Bad performance