

The Influence of Teaching Incentive System on Teaching Performance in Taiyuan City, China

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Abstract

The objectives of this research were: (1) To determine the components and indicators of principal leadership skills for primary school in Fuyang under Anhui Province. (2) To propose the principal leadership skill model for primary schools in Fuyang, Anhui Province.

The population of this study included 953 principals, and teachers of primary schools in Fuyang, the People's Republic of China. A stratified random sampling was used to sample, totaling 412 persons. The instrument for collecting data was a questionnaire. Descriptive statistics, percentage, arithmetic mean standard deviation, and the Confirmatory Factor Analysis were used to perform data analysis through the statistical computer software.

Research results revealed that (1) the components and indicators was screened from theoretical framework, it consisted of 4 factors and 13 indicators namely: creative skills, communication skills, collaboration skills and vision skills; (2) leadership skills model that developed for primary schools' principals was fit with the empirical data, the value of Chi-square (χ^2)= 95.24, Relative Chi-square (χ^2/df) = 1.98, Degree of Freedom (df)= 48, Goodness of Fit Index (GFI)= 0.97, Adjusted Goodness of Fit Index (AGFI)= 0.94, and Root Mean Square Error of Approximation (RMSEA)= 0.05, all in line with specified criteria. And the key factors had the weight between 0.84 - 0.97, higher than 0.70; indicators between 0.89 - 0.95, higher than the criterion as 0.30.

Keywords: Leadership skill model, Primary schools principals in Fuyang, Anhui Province.



Introduction

The current world situation is changing rapidly as a result of advances in science and technology which have affected China in many ways, be it politics, economy, education, society and culture. Both public and private agencies have to adjust their management or organizational structure in accordance with the changing conditions in order to stand and compete with countries around the world in conjunction with globalization. The industrial sector of China has stepped into a high-tech system with a restructuring of the economy. to increase production potential to be able to compete with the international from this intense competition. Many countries have turned their attention to improving the quality of workers in government, business and industry. Therefore, the need for knowledgeable personnel, the ability and skill to properly and effectively use the control of production technology is therefore at a high level in such situations.

Excellent leadership in educational administration are regarded as the heart of education management. Administrators need to possess certain leadership which is a key factor in school administration. One of the most important is excellent leadership. it is one that drive the school towards success. Based on the concepts in the new era, a great number of scholars both in China and abroad agree that success or failure in educational administration dependent on school administrators who take a role as strategic leaders. In accordance with Kiral (2020), education policy makers in the 21st century are executives with excellent leadership. This leadership behaviors will help teachers become good teachers and enable successful classroom instruction and leads to positive change. It is a practice guideline for school administrators. From theoretical concepts, this leadership is considered a continuous practice that benefits teachers and students, resulting in good efficiency in education. Williams and Denney (2016) add that there are seven aspects of excellent leadership in the 21st century; 1) vision, 2) communication, 3) skills, 4) personality, 5) executive ability, 6) courage, and 7) service mind.

In the similar context, primary schools in Yingshang of Fuyang City, Anhui Province is an educational establishment with a mission to develop and promote including to support education with an emphasis on student development in order to provide learners with knowledge and ethics knowledgeable and competent in accordance with international quality standards. There is development of all students as well as expanding access to services to developed the quality of teachers and educational personnel to have a body of knowledge that meets the needs. School principal can manage all aspects of work effectively. and effectiveness Teachers and staff have morale at work. and has empirical performance Developing a management system to keep up



with current changes To be like that, the principals of the school therefore, must be developed to have leadership of change. Is a visionary and can be transmitted to teachers in the work. for the benefit of the public have intelligence, believe in their-self. ideology showing enthusiasm for work. Teachers are encouraged to be creative in their work. including assigning all teachers to work according to their knowledge and abilities and can enable teachers to participate in creating a vision to be in line with the current educational changes . The school principal have realized and given great importance to this matter.

Researcher is a teacher in this area, and with such importance of this leadership skills, and lack of research involved directly in Fuyang city therefore, the researcher is interested in studying the excellent leadership skills in the context of 21st century for primary school administrators, which is a study from theory to structural relationship modeling and to examine the coherence of the structural relational models developed, if the model is found to be consistent with the empirical data according to the specified criteria. This research results could be used as information for planning and prioritizing in enhancing the quality of school principals to have skills in management in the new era, or create criteria for assessing the principals. In addition, educational institutions or related agencies can be used for monitoring, and evaluating the operation to see how effective and efficient as well.

Research questions

1. What were the components and indicators of the leadership skills for the primary school principals in Fuyang under Anhui Province?
2. How does the leadership skills model for the primary school principals in Fuyang under Anhui Province?

Research objectives

1. To determine the components and indicators of the leadership skills for school principals in Fuyang under Anhui Province.
2. To propose the leadership skills model for the primary school principals in Fuyang under Anhui Province.

Research Hypothesis

Leadership skills model for the primary school principals of Fuyang fit with the empirical data.



Research Methodology

1. Research Design

This study focus on quantitative method was employed to collected the empirical data from the respondent through survey questionnaire.

2. Population and Sample

The population of the research were 1,070 of principals and teachers of primary schools in Fuyang, under Anhui Province. The sample group will select by using proportional stratified random sampling from G*Power program at: $Df = 60$, α err prob = .05, effect size $w = 0.3$, power = 0.8), totally at least 412 persons,

3. Research Instruments

Use the Chinese website “WJX.cn” to create a five-point rating scale questionnaire and manage it on a professional platform for online data collection. It consists of the following two parts.

Part I: Demographic variables or general information of the respondents, such as gender, age, education level, position, working years, etc.

Part II: Five-point rating scale questionnaire of principals’ leadership skills for primary schools in Fuyang. The 5-points rating scale questionnaire in each item were:

- 1 = Strongly Disagree,
- 2 = Disagree,
- 3 = Neutral,
- 4 = Agree,
- 5 = Strongly Agree.

Validity and Reliability of the instrument

All of these develop are to use the IOC and Cronbach's alpha coefficient to find the validity and reliability. It was found that t overall items that IOC. were greater than 0.80 and Cronbach’s alpha coefficient above 0.80, indicating that the reliability of this questionnaire is very high.

4. Data Collection

The steps for data collection will be as follow:

Step 1: Request permission to collect data for research to the Faculty of Education, Bangkokthonburi University.

Step 2: Request a letter of recommendation for the researcher from Educational Faculty. Bangkokthonburi University

Step 3: Selection the coordinating teachers to help assist in coordinating data collection in each institution. Those will be oriented to understand the details of the questionnaire administration and data collection.



Step 4: Carry out data collection with the selected samples by sending questionnaires to the coordinator teacher who will help for collect data with the selected samples in each school.

5. Data Analysis

1) Descriptive statistic for describe the variables namely frequency, percentage, arithmetic mean, standard deviation, skewness, and kurtosis, and the criteria was used to interpret the mean score were: (Best and Kahn James,1993)

1.00 – 1.49	Very low
1.50 – 2.49	Low
2.50 – 3.49	Moderate
3.50 – 4.49	High
4.50 – 5.00	Very high

2) Composite Reliability (CR), and Average Variance Extraction (AVE) used to check the convergent validity of Confirmatory Factor Analysis measurement model. In this context the CR. Must be have 0.7 and more, and AVE must be 0.5 and more (Fornell and Larcker, 1981; Hair, et.al.,2010)

3) Inferential statistics, in order to development the model of the principal's leadership skills for primary schools in Fuyang. Confirmatory factor analysis (CFA) would be employed for finding and estimate the parameter in this situation as follows:

- Confirmatory Factor Analysis by testing the conformity of the structural correlation model and weighting the sub variables used to generate the empirical data indicators obtained from the weighted analysis of the data from the questionnaire. The sub variables used to generate the indicators and to verify the coherence of the research model are the theoretical models created by the researcher by analyzing second-order confirmation elements with the empirical data. Thereafter, the coherence of the research model with the empirical data was examined. If the results of the first data analysis do not meet the specified criteria, the researcher must adjust the model to meet the specified criteria. According to the viewpoint of Fornell and Larcker (1981), Hair, et.al. (2010), and Rex, B. K., (2011). the statistical values to be used as the audit criteria are as follows:

(1) Chi-square Statistics is a statistical value used to test the statistical hypothesis that the function Harmony is zero. The lower the Chi-square Statistics, the closer to zero the model is consistent with the empirical data.

(2) Harmony Level Index (Goodness-of- Fit Index: GFI), which is the ratio of the difference between the harmonious functions from the model before and after the model was adjusted to the harmonization functions before the model was adjusted GFI values from 0.90-1.00 indicate that the model was consistent with the empirical data.



(3) Adjusted Goodness-of-Fit Index (AGFI), in which the GFI is adjusted taking into account the size of freedom (df), which includes the number of variables and the sample size if the AGFI values from 0.90-1.00 indicate that the model is consistent with the empirical data.

(4) Root Mean Square Error of Approximation (RMSEA) error indicates the dissonance of the model generated with the population covariance matrix which is A value of RMSEA less than 0.05 indicates that the model is consistent with the empirical data.

(5) Apply the results of the analysis to verify the consistency of the model. The following criteria were selected for indicators showing Factor Loading: 1) equal to or greater than 0.7 for parent component (Farrell & Rudd, 2011), and 2) equal to or greater than 0.30 for sub-element and identifier (Tacq, Jaequs,1997).

Research finding

Data analysis results, according 412 respondents in this studied, about 57% were female and 43% were males. Majority of them had over the age of 25 - 45 years old, most of 62.38% had a bachelor's degree, master degree only about 24 percent, For the position of work in the school, the majority of 72.57% were full time teachers, and had working experience between 6-15 years

1. Answering the research objective 1, found that the appropriateness of leadership skills for primary school principals in Fuyang, in order to select a structural correlation model by comparing it with an average threshold equal to or greater than 3.00 and a distribution coefficient equal to or less than 20%, the findings were 4 components and 13 indicators as follows:

(1) The component of communication skills consists of 3 indicators namely media literacy, technology, and presentation. the average value of this component was at high level.

(2) The component of creative skills consists of 4 indicators: originality, challenge, flexibility, and imagination, the average value was at high level .

(3) The component of vision skill, consists of 3 indicators: formulating, communicating, and inspiration, the average value was at high level .

(4) The component of collaboration skill, consists of 3 indicators: participation, trust, and conflicts resolution, the average value was at high level .

2. The leadership skills model for primary school principals in Fuyang as show in this Figure below



Chi-square=95.244, Relative Chi-square =1.984, df=48, p=.000, GFI= .966, AGFI=.935, CFI= .994, TLI=.990, RMR=.010, RMSEA=.049

The model that proposed is very consistent with empirical data to a very good extent. The Chi-square value (χ^2) of the model is equal to 95.244, df equals 25, p-value equals 0.00, however Relative chi-square = 1.984, GFI = 0.966, AGFI = 0.935, CFI = 0.994, TLI = 0.990, RMR = 0.010 and RMSEA = 0.049 that based in line the criteria of conformity assessment. The investigation revealed that the weight of 4 component is positive the value of 0.915 – 0.985 and is statistically significant at the level of .001.

The results of this analysis show the leadership skills model, all indicators of the Second-Order Confirmatory Factor Analysis that consisted of 4 components and 13 indicators, the detail of statistics result as shows in Table below



Table Show the important statistical value of First Order CFA model of leadership skills for primary school principals in Fuyang

Path of variable in the model			Maximum Likelihood Estimates Regression Weights:		
			Unstandardized	Standardized	R ²
1. Vision	<---	Leadership skills	.869	.915	.837
Vis1	<---	Vision	.805	.888	.789
Vis2	<---	Vision	1.000	.947	.897
Vis3	<---	Vision	.965	.920	.847
2. Creative	<---	Leadership skills	1.000	.985	.970
Cre4	<---	Creative	.947	.935	.847
Cre3	<---	Creative	1.000	.934	.873
Cre2	<---	Creative	.947	.921	.848
Cre1	<---	Creative	.923	.891	.794
3. Communication	<---	Leadership skills	.833	.971	.943
Com1	<---	Communication	.968	.949	.900
Com2	<---	Communication	1.000	.915	.837
Com3	<---	Communication	.982	.920	.847
4. Collaboration	<---	Leadership skills	.867	.963	.927
Col1	<---	Collaboration	.953	.893	.798
Col2	<---	Collaboration	.982	.933	.870
Col3	<---	Collaboration	1.000	.946	.894

The detail of these statistics was shown in Table above indicated that this “Second-Order Confirmatory Factor Analysis of principles’ leadership skills in primary schools of Yingshang in Fuyang under Anhui province, there were actually 4 components and 13 indicators as rank order from the high predictive power (Estimate standardized R² value) to low were conclusion shows in Figure below

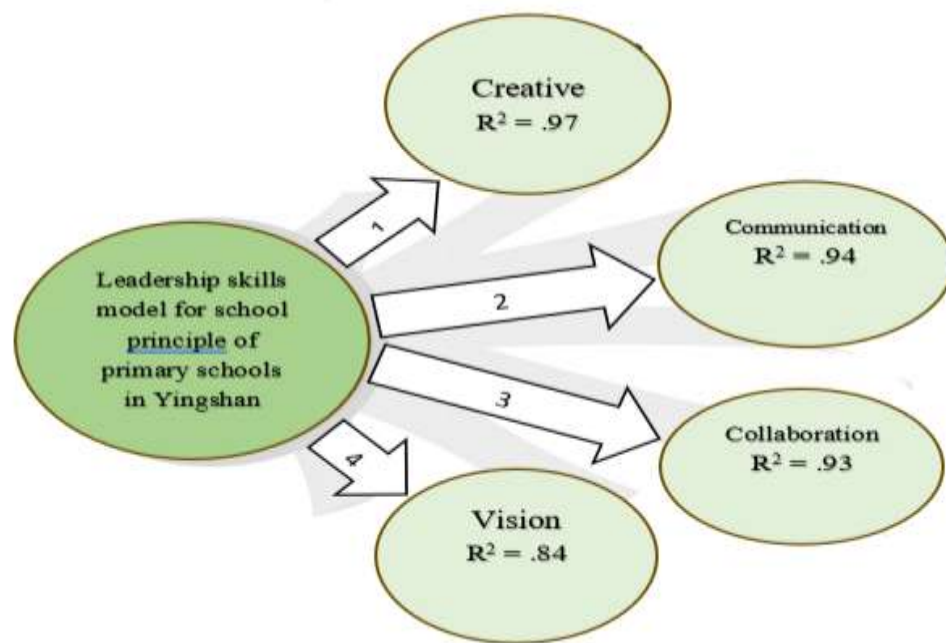


Table and Figure has shown above the results of the second order CFA with the AMOS statistical software program, based on the results of the analysis, it can be concluded that the leadership skills for principal of primary schools in Fuyang have four key components, there were:

Rank order 1 was creative skills, there were four indicators namely flexible, challenge, imagining, and originality.

Rank order 2 was communication skills, there were three indicators namely media literacy, technology skills and presentation.

Rank order 3 was collaboration skills, there were three indicators namely conflict resolution, trust, and participation.

Rank order 4 was vision skills, there were three indicators namely communicating the vision, inspirational motivation, and creating a vision

Discussion

1. Suitability of the leadership skills and indicators for management to select and define in structural relationship models prior to Confirmatory Factor Analysis.

That's based on the findings. It was found that all were averaged during the period. 4.07 - 4.64 and the distribution coefficient between 11.19-16.92, thus showing that all of them are appropriate. It can be selected in a structural correlation model, since everyone has an average value equal to or greater, and the C.V. not more than 20%. Therefore, this finding is consistent with the results of statistical analysis, and each model is statistically significantly correlated at the level of .01 ($p < 0.1$) for all the variables.



In addition, Bartlett statistical analyses and Kaiser-Meyer-Olkin Measures of Sampling Adequacy (MSA) also found that the correlation matrix between variables differed statistically significantly from the identity matrix at .01 by the Bartlett test of Sphericity. The Kaiser-Meyer-Olkin Measures of Sampling Adequacy (MSA) values are the same as equal 0.932, 0.927, 0.954, and 0.955, respectively, with all values being very high. (because of > 0.80). It shows that all indicators are very correlated and appropriately can be used to analyze the CFA. This may be due to the research methods used to create and develop indicators using empirical definitions. According to Kim & Mueller (1978); Pett, Lackey & Sullivan (2003); Hair et al (2010); Alan Agresti (2015), and Poonpong Suksawang. (2020), that with structural correlation models, indicators. the theory and research are fundamental to it. This results in the researchers having to study the theory and research referenced with awareness. Including research results systematically and logically a variety of sources and results through analytical, synthetic methods to obtain key components, sub-components, operational definitions, and indicators or main strands, so that the measurements in each component are accurate in accordance with the principal and theory. According to the scholars cited, is considered to be of great importance. Regardless of how good statistical techniques are used, the results of development are either bad or poor quality. Also, as suggested by scholars, particularly Hair et, al, (2010), Poonpong Suksawang (2020), all mentioned that the study of theories and research results to define them is the main component. subcomponents operational definitions and indications or main strands. The validity of the content must be taken into account. The researchers also took into account the principles of Max-Min-Con strictly. This includes determining sample size, randomization methods, and creating and developing the quality of research instruments that are academically correct.

2. Consistent of structural relationship models of the leadership skills for primary school principals in Fuyang that developed from theory and research fit with the empirical data.

According to the findings, 1) the measurement CFA model that developed from the theory driven, research results, there is a very good consistency with the empirical data. It shows that all components and indicators studied were suitable and important of the leadership skills for the management of primary school principal in Fuyang and 2) A Second-Order CFA of the leadership skills model was fit with the empirical data to a very good extent, it is based on the chi-square value (χ^2) equal to 95.244, P-value equal 0.00 but Relative chi-square equal 1.984. This may be due to past and present circumstances. university administrators are developed to develop attributes or behaviors that are consistent with the theory or the research results as defined are the main components and indicators used in the research. This demonstrates the expressive



behavior of the brigands, which is consistent with the agency's policies related to the development of educational personnel to have core competency. It consists of 1) Achievement Motivation, 2) Service Mind, 3) Expertise, 4) Teamwork, and Functional Competency consisting of 1) Analytical Thinking Conceptual Thinking, 2) Communication Influencing, 3) Caring Development Others, 4) Visioning, which the University supports and promotes through various channels, including from departments affiliated with the university.

In conclusion the findings showed that: the leadership skills of structural relationship model for the primary school principals consists of 4 main components and 13 indicators developed from the theory and research, which is useful for creating a model for measuring and evaluating of leadership skills in the new era or 21st century, therefore it can be used as a guideline for creating training programs to develop all executives to have leadership skills, which can be used as a tool for self-development and increase the efficiency of educational institutions, which will further contribute to the overall improvement of the quality of education.

3. According to the results of the research, the factor loading value of the main component.

The factor weight value of the 13 indicators meets a certain threshold, i.e., the composition value of the main component is the same as the higher one 0.70 and the factor loading value of the main component and indicators, equal to or higher than 0.30, suggests that the 21st century leadership skills indicator structural relationship model for school administrators consists of 4 key components, 13 indicators that can be used to measure leadership skills in the new era. This may be due to the main components and indications used in research, which have been studied by a variety of theories and research sources. There is a synthesis for selection in the model. It takes into account the validity of the content or of the variables studied at all stages, both in the process of defining the elements and indicators, and the operational definition. Show me. This developed structural relationship model to achieve a measure of leadership skills for the administrators of primary schools in Fuyang, it can be used as a tool for self-development and development of other people in the same context. To further enhance the efficiency of the educational institution.

The findings were very good. It is noted for the benefit of applying the findings. To develop leadership skills in the 21st century for school administrators to be a priority as follow

1. In the key component case should focus on creative skill first follow with the vision, cooperation, and communication skills, respectively.

2. In the key component case of communication skills should focus on the indicators of presentation media literacy and technology, respectively.



3. In the key component case of creative skills should focus on the indicators of flexibility, imagination. challenges and origination, respectively.
4. In the case of key elements, vision skills should focus on indicators, motivation. Creating vision and communicating vision, respectively.
5. In the case of key elements, cooperation skills should focus on indicators, conflict resolution, trust, and participation, respectively.
6. In the case of indicators, media literacy should give priority to the item. Ability to choose the right medium Because there's a high weight value to other items.
7. In the case of technology indicators, the importance should be given to the list of technological application capabilities. The development of tools and appliances to make the work efficient because it has a higher element weight than other items.
8. Indicator case Presentation should focus on the item. Be able to plan and determine the purpose of the presentation. Because there's a high weight value to other items.
9. Indicator case initiatives should focus on the list. Having self-confidence Ready to face different situations and dare to make decisions in creating new works. Because there's a high weight value to other items.
10. In case of indicators, challenges should be given priority to the list. Daring to make decisions in high-risk conditions Because there's a high weight to the list.
11. Indicator case Stretching Should focus on the list, the ability to adjust the performance plan as appropriate, because it has a high weight value that other items.
12. Indicator case Imagination should give priority to the list, be thoughtful, discreet, and prudent in its performance, because it has the high weight of other items.
13. In the case of indicators, creating a vision should give priority to the item. It's a challenge to find solutions to problems in new ways because of the heavy water costs. The composition is higher than the others.
14. In the case of indicators, vision communication should give priority to the program. Incentive stakeholders to be willing to work to achieve their vision and involve everyone. Targets and activities that are in line with the vision because they have a higher water value than other items.
15. In the case of indicators, motivation should focus on the list of support. Promote creative initiatives to aim for the ultimate goal because of the heavy water value. The composition is higher than the others.
16. In the case of indicators, participation should be given priority to the item. Using the results of the assessment to improve the work and develop the work because it has a higher weight value than other items.



17. In the case of indicators, trust should give priority to each other, be sincere, and help each other. Dhoni is not hoping for a return. Because it has a higher water value than other items.

18. In case of indicators, conflict resolution should give priority to the promotion list. Participation in the purpose of organizing and creating popularity of co-operation because it has a higher water value than other items.

Recommendations

Based on the findings, there are three main recommendations: recommendations based on research findings and policy recommendations. Suggestions for utilization and suggestions on issues that should be studied in the next place.

1. Recommendations based on research findings and policy formulation

1) The Fuyang primary school district and provincial offices can use the leadership skills and these indicators for school administrators, as a result of this research, to be used in planning develop the leadership skills of school administrators. To allow school administrators to be developed into professional executives in line with leadership skills in the new era or in the 21st century.

2) Ministry of Education and Office of the Education Commission can take the leadership skills for primary school's principals as a result of this research, as a result of this research, to be a policy to develop school administrators to have knowledge and understanding of the value of leadership in themselves. Especially the leadership skills for executives, which are skills that need to be strengthened in the leadership. at various levels.

3) Office of the Board of Education can take this leadership skills model for primary school administrators/principals as a result of this research, it is a guideline for determining standard indicators. For the development of teachers and educational personnel. Prior to the establishment, he was promoted to the position of school administrator. Deputy Director and Director, as well as the implementation of standard indicators of entry into positions of the administrator or principal

2. Suggestions for utilization

Suggestions on the utilization of research findings, as a whole, should encourage the adoption of this developed model. It was used as a guideline for developing leadership skills in the 21st century for primary school administrators at Fuyang focus on the key components, sub-components, and indicator levels, as the findings showed, because of the developed models were consistent with empirical data. By adopting the model as a development guide, the importance of the main component should be



taken into account. The research found that there are descending components weight values as follows:

The key components should be given priority by promoting and developing the key components of creative skills first, followed by communication skills, collaboration skills, and vision skills, respectively. The key components of creative skills should be focused on the following sub-components: stretching imagine challenges and origination or ideas begin, respectively. Key components: vision skills should focus on the following sub-components. Creating vision and communicating vision, respectively. The key component of collaboration skills should be given priority to the sub-component.: conflict resolve, trust and participation, respectively. And the key components of communication skills should be focused on the following sub-components: presentation, media literacy, and technology, respectively.

3. Suggestions for further research

1) Research should be conducted to create new knowledge using qualitative research methods, since this research is a hypothetical model based on theory and research, so if there is qualitative research, knowledge may be obtained that may be different from this, and it will be useful to explain leadership skills for more school administrators.

2) Research should be done to be treated in a way that puts the findings into practice, such as: Participatory Action Research may guide these findings, such as the development of indicators that show high averages, as well as the development of components with high component weight values.

3) Research and Development should be conducted using the models tested by this research. It is a guideline for obtaining a program to develop leadership skills in the 21st century for primary school principals, which will contribute to their personal development and the quality of education.

4) Research should be conducted to create models, measure and evaluate indicators of leadership skills. For school administrators, to provide tools to measure leadership skills in the new era or 21st century, for primary school administrators and for others school administrators. It is used as a tool for further self-development.

5) Research should be conducted on the development of leadership skills including indicators for other schools, such as private primary schools' administrators. Administrators affiliated with the Office of Vocational Education, education administrators in school district offices. or executives in other companies in the same context to obtain a variety of the leadership skills that are appropriate to the context of the organization.



6) There should be research in the evaluation and follow-up. Bringing leadership skills for primary school administrators/ principals. To apply the results for development in various educational contexts.

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