Factors Influencing Crisis Leadership on Managing the Unexpected of Vocational Education Institutes: Southwest of the People's Republic of China

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Abstract

The purpose of this research is to study the crisis leadership factors that affect the emergency management of vocational education colleges in the southwest of the People's Republic of China. By sampling the quotas of eight vocational colleges in Kunming, Yunnan Province, 400 faculty members were selected. The questionnaire is used as a research tool for data collection to confirm the reliability and validity of the questionnaire. The data is analysed statistically using mean, standard deviation, and exploratory factor analysis methods to develop a conceptual model. The technique for exploratory factor analysis using principal component analysis (PCA) and the orthogonal rotation with varimax rotation method were used to conduct the exploratory factor analysis. The finding showed that all elements had eigenvalues ranging from 1.258 to 9.075, with a cumulative variance of 66.934 percent. When considering the appropriateness of the element weight, its value is greater than 0.60, which is higher than the acceptable standard.

Keywords: Crisis Leadership, Vocational College, New Normal, Exploratory Factor Analysis (EFA).

1. Introduction

The unexpected of Coronavirus pandemic has brought the world population a worldwide impact. In order to encounter the epidemic, each government has adopted defensive measures such as postponing school's semester starts, home isolation, and postponement of resumption of work. Educational authorities in many countries encouraged their schools to try online and webcast teaching instead of traditional classes prevention and control period. Regardless stopping school, the school actively responds to the call for online teaching and launches non-profit online teaching attempts. The consequences have a significant change on online and offline education. With respect to the characteristics of the epidemic crisis and the leadership Shortcomings that may be exposed by current principals, it is urgent to improve the Crisis leadership of principals (Ali, 2020). The so-called Crisis leadership means that the principal can face the emergency directly. In addition, the comprehensive and in-depth identification of the crisis, all teachers, students and relevant staffs effectively respond to and overcome the crisis, in order to promote the sustainable educational development for members and the school through this situation. Confronting the increasingly complicated and unpredictable social situation in educational ecology, the principals of primary and secondary schools should take the account of their own crisis leadership as an important part of their professionalism, and continue to learn and strengthen them (Bao, 2020).

The researcher investigated on more than 20 vocational high schools in Kunming, Yunnan Province, China. Firstly, vocational high schools are not only the highest and final stages of basic education in China, but also provide students with a solid cultural foundation and thinking foundation. Secondly, the recognition of vocational high schools in China is highly respect. In the pneumonia epidemic situation, the Ministry of Education puts forward the requirement of suspending classes without suspension for the majority of these schools. The teachers of vocational high schools in Kunming, Yunnan Province learn from each other the lesson of preparation that unified and improved teaching strategies. In class management, parents and class leaders managed the learning mechanism, and used smart work platforms to promote solid and effective online learning. In the situation of high school graduation grades, the school mode is active. As the result of this, the school campus prevention and control measures are carried out vigorously and orderly. For instance, the school campus routes were set up, the small class teaching was implemented, the isolation room was temporarily arranged, and the students can enter the campus only after they had undergone temperature testing. the prevention and control of campus epidemics is considered as the top priority, as well as carrying out detailed and precising investigations, making good preparations of epidemic prevention materials, strengthening campus health construction, and improving emergency response plans.

Threats and impacts of the impact on leadership under the epidemic: many people can encounter in crisis at any time as the crisis can become a more serious disaster, however people can begin a new life when the world has been clarified and purified again. (Brammer & Clark, 2020). At the beginning of 2020, when the sudden New crown pneumonia epidemic (hereinafter referred to as the epidemic) comprehensively and rapidly affects the world, for the principal of a high school, it is more likely being in a crisis leadership test. In the process, will the principals lose his/her educational stance because he/she is busy responding to sudden crises? Will he/she become a setter who is lacking self-judgment and independent creation because of the emergency of work? Will he/she be tiring arranging specific tasks?, And there are point-like thinking and working methods that affect the overall situation? (Burgess &

Sievertsen, 2020). *Educational approach with a new normal*: during the expansion of the epidemic, the school can receive many emergency work requirements. Although these requirements are based on the common goal of overcoming the epidemic, their positions and behaviors are different. (Liu et al., 2020). This poses the primary challenge to the principal's crisis leadership, namely, the ability to transform jobs based on an educational standpoint (Mulenga & Marbán, 2020). It asked principals to consider about the following aspects: Can the school integrate educational awareness into crisis response? Can the school effectively carry out work in an educational way? Can the school make a unique contribution to society as educators in crisis response? To respond to the question above, firstly, the principal needs to identify the crisis itself and the actual situation of the crisis. Secondly, discover the potential educational elements and value in the crisis response process, and thirdly, construct the school educational emergency action. It can be seen that after the outbreak of the epidemic, schools in many countries have used the epidemic time of crisis to conduct a new teaching material, plan, creativity solution, and educating students' professional vision and actions (Ali, 2020).

Speed up the construction of educational symbiosis, move from single-soldier combat to multi-force drive: in the epidemic prevention and control period, the principal's direct allies are not only the management team, teachers, students, and parents within the school, but also the leadership and officers of government departments, higher education administrative departments, epidemic prevention and control headquarters, communities and other institutions. In this process, how do principals deal with complex interpersonal relationships? How to fully mobilize internal and external forces to help their leadership and make them a profound participant in breaking the school's dilemma? This puts a new perspective on the principal's crisis leadership. The challenge is to face the ability of different groups to build educational symbiosis. To establish an educational symbiosis, the principal needs to deal with three levels of problems: Firstly, it is necessary to emphasize the main participation of everyone, especially each student, as well as to ensure the common growth of people in the organization. This is to build an educational symbiosis and carry out education; secondly, it is necessary to promote the establishment or development of different organizations according to the time, place and situation, and encourage them to move forward in groups; finally, according to the characteristics of the tasks, form a rich relationship between responsible persons and partners among various groups to build a new development ecology driven by multiple forces and mutual promotion and common progress.

Lead the long-term design of school management, from overcoming the crisis to winning the future: if the epidemic crisis is gone, and school management will return to normal. To promote this transition of school management from crisis to daily basis, it is necessary for the principal to have long-term planning awareness during the crisis period and be prepared in a practical manner. This long-term design ability is also an important part of the principal's crisis leadership. To do a decent job means that the principal must have three customs of awareness. The first is to have a forward-looking and follow-up mode of thinking. While dealing with the immediate work, it is also necessary to consider how to deal with the normal development of different education and teaching work in schools in the post crisis. The second is to have the awareness of forming a structured mode of action, by starting from the organization. The work team should determine the work process and clarify the operation procedures to ensure that the work paradigm is clear, transferable, extendable, and optimizable. the third is to have a sustainable development awareness of reflection and reconstruction in order to be able to

discover new ideas in the process of overcoming the crisis. Resourcing, refining new experience, and reflecting on how to make it through precipitation to ultimately nourish the school ecology and enrich the school brand.

2. The Objective of Research

To study the crisis leadership factors that affect the emergency management of vocational education colleges in the southwest of the People's Republic of China.

3. Research Methodology

In this study, data were collected by questionnaire survey. The methodology is including as the follow; Document analysis: collect domestic and foreign literature on leadership design goals and SMART model research to lay a theoretical foundation for the development of this article. Interview method: face-to-face exchanges with leaders of first-line higher vocational colleges and discussions about the content of teaching goal design, paving the way for a full understanding of the current situation of work goal design in vocational colleges. By questionnaire survey method: use the questionnaire to clarify the current situation of higher vocational college leaders in the task target design, find the problem and attribution analysis. Finally, analyze the problems existing in the design of the work target, and optimize the design of the work target based on the creation of a new model.

The main content of the questionnaire survey is as follows: The first part is personal information, including five aspects such as gender, teaching age, age, education and professional title. The second part, based on the conception of literature analysis, is aimed at leaders' understanding of task goals (questions 1, 2, 3), awareness (questions 4, 5, 6, 7), design (questions 8, 9, 10, 11), Implementation (12, 13, 14, 15 questions) four dimensions were prepared corresponding questions, the design of work task objectives and implementation status investigation and research. In addition, according to the Likert scale for scoring, the options are divided into five levels, and each level corresponds to 1, 2, 3, 4, and 5 points. If the favorable items from strongly agree to strongly disagree are 5, 4, 3, 2, and 1 point respectively, the scores for unfavorable items are 1, 2, 3, 4, and 5 points. Case analysis method: check the teaching and epidemic prevention task arrangements of higher vocational colleges in Kunming, Yunnan Province, China under the new crown epidemic, analyze the "work target design", find out existing problems, and establish models for design, modification and evaluation.
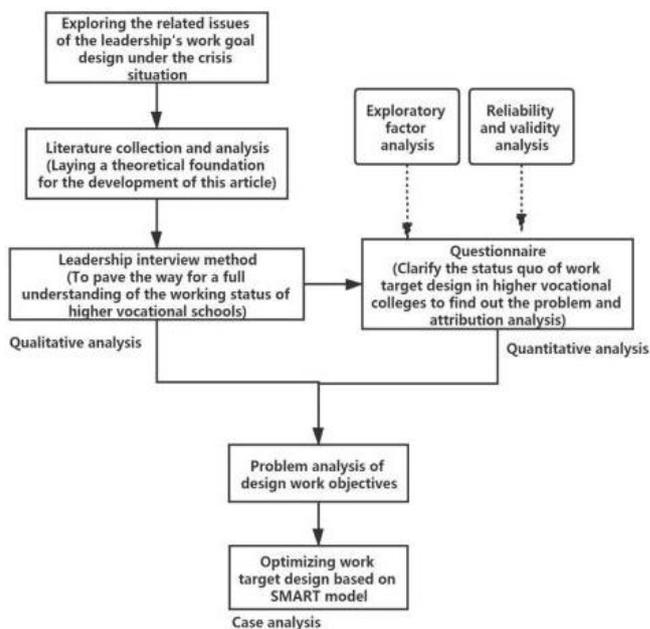
3.1 Research Process

Figure 1: *Research process*

3.2 How to Choose Research Fields and Data Providers
The research population is composed of teachers from 8 higher vocational colleges and leaders of the Academic Affairs Office in Kunming, Yunnan Province. The specific situation is 190 from Kunming Metallurgical College, 160 from Yunnan Transportation Vocational and Technical College, 180 from Yunnan Energy Vocational and Technical College, 210 from Yunnan Mechanical and Electrical Vocational and Technical College, 154 from Yunnan National Defense Industry Vocational and Technical College, and 130 from Land and Resources Vocational College of Yunnan Technical Institute. There are 170 people from Yunnan Forestry Vocational and Technical College and 120 from Kunming Health Vocational College. After collection, cooperative sampling will be taken, totaling 400 people.

3.3 How to Perform Reliability Analysis
According to George and Malex (2010), the value of the coefficient of Kronbach's alpha as follows: ≥0.9=excellent, ≥0.8=good, ≥0.7=acceptable, ≥0.6=suspicious, ≥0.5=Poor, ≤0.5=not possible accept. Therefore, in order to make the research questionnaire more reliable, its coefficient Kronbach's alpha value must be at least 0.7. According to the reliability analysis of Cronbach (2003), the results show that the overall Cronbach alpha coefficient of the sample is 0.949. Indicates that the reliability of the questionnaire measurement is acceptable.

3.4 How to Collect Data
The 1,300 data collected from the official questionnaire are all sampled for quotas through the above indicators. Then, the researcher confirmed that all the returned questionnaires were filled in correctly. In this study, the data was obtained after the online questionnaire was distributed. In order to ensure that the interviewees can understand all the questionnaire items, the English questionnaire is translated into Chinese. To complete this research, obtain secondary data from

relevant literature or research papers, such as textbooks, papers, independent research, and academic papers.

3.5 How to Analyse the Data

After collecting and sorting, all data is checked, filtered and coded for further research. First, the data analysis will use the reliability analysis method Cronbach's method to prove the consistency of the project. Second, data analysis will use the statistical analysis technology of social science statistical computer software to analyze the frequency distribution, percentage, mean and standard deviation of the data. Finally, the exploratory factor analysis (EFA) method is used to group the initial items in the data analysis, and at the same time to compile variables with high correlation. Mainly by extracting principal components, exploratory factor analysis of detailed answers to observable variables is carried out.

4. Research Results

Demographic information of the respondents: regarding the basic information of the respondents, it was found that most of them were female (27.8%), Unmarried (57.3%), 30 years old or under (50.7%), Bachelor's degree or under (31.8%), 3 years or under (21.3%) in working years.

Analysis of the element factors: Factor analysis is to assess the variability among observed, correlated variables, to analyze whether or not there were clear dimensions could be used to predict the covariates in regression. Orthogonal rotation was used to the principal component analysis. KMO values range from 0.00 to 1.00 and can be computed for the total correlation matrix as well as for each measured variable, values less than 0.50 are generally considered unacceptable (Hair et al., 2010). In determining the analysis results of the research variables, the Bartlett's spherical test was used to test the overall significance of the correlation between the variables (p <0.05), and the Kaiser-Meyer-Olkin was used to examine the relationship between 37 variables. The results obtained by Bartlett's sphericity test for all variables are Chi-Square=6542.725, df=276, P-Value= .000 (p<0.05), which shows that the variables in the data are significantly correlated. The result obtained by Kaiser-Meyer-Olkin (KMO) test for all variables is KMO=0.930, According to Vanichbuncha (2011) and Kaiser & Rice (1974), it is known that the data is suitable for factor analysis.

Table 1. *Total Variance Explained*

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.075	45.376	45.376	9.075	45.376	45.376	6.91	34.55	34.55
2	1.537	7.684	53.061	1.537	7.684	53.061	3.131	15.655	50.204
3	1.517	7.583	60.643	1.517	7.583	60.643	1.696	8.48	58.685
4	1.258	6.291	66.934	1.258	6.291	66.934	1.65	8.25	66.934
5	0.075	45.376	45.376	9.075	45.376	45.376	6.91	34.55	34.55
6	…	…	…	…	…	…	…	…	…
7	…	…	…	…	…	…	…	…	…
20	0.166	0.83	100						

From table 1 elucidates that using factor reduction on these 20 variables, there are Eigenvalues of 9.075，1.537，1.517 and 1.258. So, the result cannot be rejected. The factor extraction is 4 elements and it account for 34.55%,50.204%,58.685% and 66.934% of the variance, using principal component analysis (PCA) and varimax orthogonal rotation technique to analyze the variables. The results show that there are 4 components with eigenvalues greater than 1, the eigenvalues of all elements range from 1.258 to 9.075, and the cumulative variance is 66.934%. Use the maximum factor load of each variable to determine whether it belongs to which component. In order to confirm the practical significance of the variable classification, the factor load must be greater than 0.60 (Hair et al., 2010). Following this standard, 13 variables were deleted. Only 4 variables remain. The result is shown as follow: Factors analysis found that the element 1 (F1), Specific factor is composed of 8 variables, and the factor load is between 0.712-0.826, and the variance explains 34.55% in the data. Element 2 (F2), Relevant factor is composed of 4 variables, and the component weight is between 0.705- 0.861, and the variance explains 15.655% in the data. Element 3 (F3), Attainable factor is composed of 2 variables, and the component weight is between 0.779- 0.885, and the variance explains 8.48% in the data. Element 4 (F4), Measurable factor is composed of 2 variables, and the component weight is between 0.779- 0.853, and the variance explains 8.25% in the data.

5. Discussion and Conclusion

The analysis result of this part is the crisis leadership factor that affects the emergency management of vocational education colleges. According to the research results, crisis leadership factors are of great significance to the management of emergencies in vocational education colleges. In crisis situations, crisis leadership factors can greatly improve their work efficiency. Through the analysis of the research results, the crisis leadership factors in the southwestern region of the People's Republic of China are discussed. Through exploratory factor analysis, the following 4 components were found: (i) Specific, (ii) Relevant, (iii) Attainable, (iv) Measurable. The factor information is as follows:

(i) Specific: it refers to the need to clearly state the behavior standard to be achieved in specific language. Taking improving the informatization ability of school teachers and staff as an example, if the work goal is defined as teachers who will use informatization online education tools and methods, generally. Usually work goals are not easy to evaluate and measure. Specifically, the education to improve the informatization ability of school teachers and employees involves a lot of knowledge. This also included: the informatization education concept of school teachers and employees; the school informatization education and teaching system; the investment and development of school informatization software and hardware; and the construction characteristics of informatization development process. Personnel training mechanism and other aspects can be defined the work goal of improving school teachers' informatization ability as follows 1) Master the theoretical knowledge of educational technology reform, and be able to deal with different emergencies in the process of computer online teaching and 2) Understand some new methods of modern educational technology development, such as interactive classroom, micro-class teaching, live classroom, etc.

(ii) Relevant: it refers to the relationship between achieving a set goal and other goals. If this goal is achieved, but it is completely irrelevant to other goals or has a low degree of relevance, then even achieving this goal is not very meaningful. Consistent with increasing investment in and development of informatization software and hardware as an example, based on the

relevance in the work, faculty and staffs with a computer-based learning background can serve as the school's information platform construction and support other non-computer class faculty and staffs who relatively conduct online teaching, research and training. Different disciplines have different emphasis on education and teaching, which should be reflected in the goals of education and teaching.

(iii) Attainable: it refers to the goal of achievement. If the goal is set too high, the practitioners will not be able to keep up with the progress, they will not be able to complete the assigned tasks, and they will feel frustrated. On the other hand, If the goal is set too low, time will be wasted. In the system of working goal, it is necessary to understand the situation of the faculty and staffs, evaluate the difficulty, and design the goal reasonably. For example, regrading to the actual situation of 80 per cent of the faculty and staffs, formulate corresponding education and teaching goals and tasks. Taking into account the differences in the completion and needs of the faculty and staffs, when the educational and teaching goals are set, they can interact with the teachers and students, so that they can fully express their opinions and suggestions. The teachers, students and staffs can jointly complete the teaching goal setting so that the working goal is reached an agreement.

(iv) Measurable: it means that the goal should be clear and quantifiable. Use a set of clear data as the basis for measuring whether the work goal is achieved. If there is no way to measure the set goal, it is impossible to judge whether the work goal is achieved. According to Improving the effect of online teaching for high school students during the epidemic as an example, how to measure the goal of the effect of online teaching for high school students? It can define work goals regarding to the follow as 1) Ensure that students enter the online classroom on time, require students to actively answer questions in the online classroom, and each student must not be less than three times. 2) Reasonably plan the time of the online learning material package, and require students to read the online learning material package at least 15 minutes. However, if more than 80% of teachers, staffs and classmates can complete it well, it can be considered that the goal of improving the effectiveness of online teaching for high school students during the epidemic. If there are many students in the class, sampling can be adopted. Not all teaching goals can be quantified. The measurement standards of the goals follow quantification of energy, qualitative that cannot be quantified.

Factors Influencing crisis leadership on managing the unexpected of vocational education institutes: Southwest of the People's Republic of China：which was called "Riangular pyramid of S-RAM", was presented in a mind-map form as shown in Figure 5.1

F1: Specific
具体性

F2: Relevant
相关性

F3: Attainable
可实现性

F4: Measurable
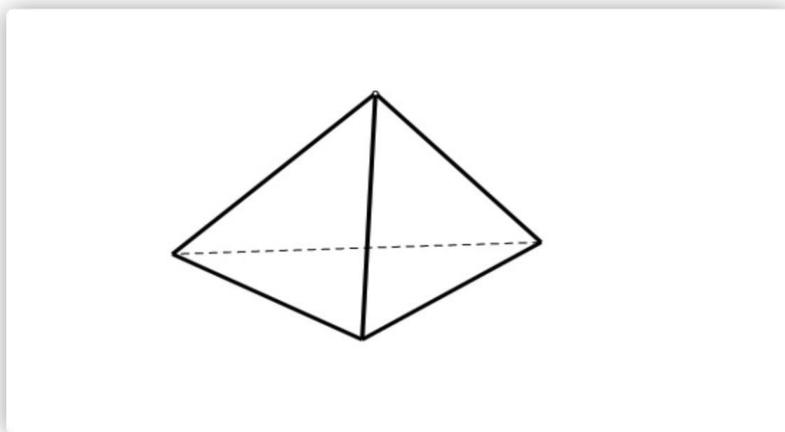可衡量性

Figure 2 Riangular pyramid of S-RAM

Figure 2 Riangular pyramid of S-RAM

The specific meaning is as follows: 1) The goal must be specific, not general. 2) The goal must be measurable, the indicators are quantitative or behavioral, and the data or information to verify these indicators is available. 3) The target must be Attainable, the target can be achieved with effort, and avoid setting goals that are too high or too low. 4) The goal must be relevant to other goals, and the index must be related to the job and position, and should not be off-topic.

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