

A Learning Organization: Conditions for Success of the Excellent Schools in Hunan, China

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Abstract

This research aimed to study the conditions for the success of the three excellent schools and use the findings to design a model for the development of excellent schools in Hunan, China. The quantitative data were gathered from the sample group of 392 teachers of the three schools, who filled out the 45-item questionnaires, while the qualitative data were from in-depth interviews with the three school principals. Quantitative data were analyzed by factor analysis, and qualitative interview data were analyzed by Grounded Theory. The findings from the questionnaire data analysis identified eight aspects that shaped a learning organization: 1) School policies and goals 2) Supportive Environment 3) Professional development 4) Collaboration 5) Strategies to adapt to changes 6) Leadership 7) Sharing vision 8) Information Technology. From the three principals' interviews, six themes emerged: 1) Changes in all areas affecting education and Change-facing strategies 2) Choices of curricula and pedagogies 3) Successful ways to teacher development 4) Student preparation for the Future 5) Cooperation of all school stakeholders and 6) Focus on Innovations. Based on the findings, a recommended model for the schools which aim to become excellent schools has been proposed.

Keywords: A learning organization, Excellent schools, Conditions for success

Introduction

Argyris and Schön put forward the earliest concept involving learning organization in the 1970s. Since then, it has triggered many world-class companies to adopt the concept for the success of their enterprises (Gil et al., 2019). To face rapid changes, learning at the individual, team, and organizational levels is the focus (Garvin, 1993) The problems at the lowest level must be brought up to the highest level for a solution, termed single-loop learning and double-loop learning (Argyris, 1977). According to Reese (2020), "the concept of a learning organization is a process of innovative change, knowledge transfer, and cultivating the continuous learning ability of organization members, and continuous efforts to change or redesign itself to adapt to the continuously changing environment." With the development of

society, the updating of knowledge continues to accelerate. As a result, the theory of learning organization has spread to many parts including China (Watkins & Kim, 2018).

This concept is no longer limited to the application within the business circle. The field of education also picks up this concept because the field is currently facing many new challenges. Today's educational institutes are asked to adjust themselves with to improve curriculum, pedagogies, and practices (Ahmad et al., 2021). The construction of schools, the development of teachers, and the growth of students formulate schools as learning organizations (Li, 2021).

In the 21st century, science and technology are developing rapidly, quickly making knowledge obsolete. Arbesman (2012) says, "Facts change all around us, and knowledge decays over time. Today's schools aim to produce knowledgeable and skillful students for their future success (Masters et al., 2016). However, it has been found that teachers continue to use the same pedagogies and practices of the past that do not meet the needs of the 21st learners (Tan, 2019). The schools must keep up with the development of the times, and this is why learning organizations must be established within schools (Brix, 2017). Building a learning organization is an effective way to build a team of high-quality teachers (Henning, 2018). This can be done by promoting knowledge acquisition, knowledge sharing, and knowledge innovation to obtain ongoing competitiveness (Zhu et al., 2019). Schools are different from enterprises, and the establishment of learning organizations in schools has its unique features. According to Lau et al. (2019). Forming the school's shared vision, promoting flat, streamlined, and flexible organizational structures, overcoming learning barriers within the school, and achieving the overall goal of school development is part of the establishment.

Previous studies have been reviewed for the findings on the concept of schools as learning organizations and found that the focus was on how the learning was worked out and shared by the different stakeholder groups. In other words, these days, working alone is not a value. All members of an organization must contribute to the progress of the organization/school. They must learn to work in teams and share knowledge. All members must also develop their abilities and skills in ways that the organization can cope with the disruptive changes in the field of education (Watkins & Marsick, 1993; Marquardt et al., 1994; Senge, 2014; Zappa & Robins, 2016; Fullan et al., 2019; Angnoi & Kornpuang, 2021). William et al. (2012) found that culture, leadership, teaching, and professional growth were significant factors for 50 Brunswick schools. Altımay et al. (2016) studied three primary schools in North Cyprus and identified the significance of information technology to quality education. Stoll and Kools (2017) identified significant characteristics: a shared vision of student learning, learning opportunities to support staff development, team learning and collaboration, a culture of inquiry, innovation and exploration, a system of knowledge collection, sharing, and learning, learning from the environment and leadership.

Like schools in other countries, Chinese schools are also affected by the rapid changes in the environment. Generally, most Chinese Middle schools wish to emphasize moral education highlighting character rather than academic education and high scores in the exams. However, they are pressured by the needs of students to enter universities. This pressure forced

the teachers to prepare students for the exams (Lo & Hew, 2017). This may rob the teachers of their innovative spirit and practical ability (JianJun, 2012). Consequently, as schools are now forced to adapt to the new context demanding the improvement of student learning (Gomes & Wojahn, 2017), it is worth studying what the teachers and the principals of the three excellent schools think about the schools they did to improve them further. Besides, since they were nominated as Hunan's excellent schools, it is beneficial to determine whether they had some aspects of the learning organization. Finally, a model for developing excellent schools would be designed from the results. The study drew on the research results of many scholars and designed the questionnaire items to find out about the conditions for the success of these schools. The interviewed data from the three principals analyzed by Grounded Theory (GT) were also used to get another perspective of the administrators on school leaders.

Research objectives

The objectives of the study are:

- 1) To identify the conditions for the success of excellent schools in Hunan, China.
- 2) To design a model for developing excellent schools in Hunan, China.

Literature review

As the school's primary resource, teachers are the foundation for the survival and development of the school. The quality of the teaching staff affects the development of school teaching and research, talent training, social services other activities, the future development direction of the school and the development of the country's overall education. At present, how to improve the quality of primary education and promote teacher development is one of the focuses of the school's theoretical research and practical exploration. As one of the most cutting-edge management theories today, the "learning organization" theory is widely used to manage all walks of life. According to the actual situation and specific needs of teachers, applying the theory of "learning organization" to explore the development path of school teachers will help promote teachers to improve their professional abilities and professional qualities and ensure the quality of college education and teaching. Therefore, based on the theory of "learning organization", this research explored the conditions for the success of excellent schools from the perspective of teachers and principals.

The theories of "learning organization" abound and constantly enriched as scholars have discussed and developed learning organization theory from different perspectives. For Garvin (1993), learning organization is a process involving knowledge acquisition, understanding, and improving performance, while Argyris (1977) identified "learning organization" as single-loop and double-loop learning. Single-loop learning is discovering and correcting errors immediately, suitable for repetitive errors. Double-loop learning means the work system must be checked to indicate the causes of errors so that success is identified. At the same time the organization's ability would be enhanced for organizational change and innovation. Senge (1990)'s Fifth Discipline Theory (Shared Vision, Mental Models, Team Learning, Personal Mastery, and Systems Thinking) was adapted in many studies to study

learning organizations. Marsick and Watkins (2003) pointed out that close cooperative relationships among members are a firm foundation for members organization to work together. Members must learn and share in support of the growth of their organization. Watkins and Marsick (2019) pointed out that an organization must learn and transform for growth and innovation. Mak and Hong (2020) stated that the spirit of innovation and development could add creativity to the organization and improve efficiency.

Through a comprehensive analysis of existing relevant literature, it is concluded that the core characteristics of a learning organization include: 1) Learning organization is an organizational philosophy, focusing on adaptability and innovation, and achieving its goals through individual learning and organizational learning, learning activities and processes. 2) Team learning emphasizes the combination of the personal development aspirations of the members of the organization and the vision of the organization's development aspirations. 3) A learning organization refers to an organization that creates good learning, sharing, and reflection culture for its members. These cultures are embedded in the organizational process and structure to maintain the stability and development of the organization. 4) The learning organization work and study, encourages independent innovation, and closely integrates work and study. 5) The learning organization pays attention to the internal knowledge flow within the organization and pays attention to the acquisition, sharing, application, and conversion of organizational knowledge. 6) Lastly, the learning organization cannot standstill. It must continually find ways to face the changes in the rapidly changing world. Schools whose duty is to provide education are not an exemption that has to become learning organizations.

Research methodology

1) Research design

This research aimed to investigate the conditions for the excellent schools' success and design a model for the development of excellent schools. It adopted a mixed methods research approach to collect quantitative and qualitative data.

For this study, questionnaires were used to collect data from the teachers in their schools to study their actions and thoughts about necessary conditions for excellent school success. For qualitative data, three excellent schools' principals were invited to join individual interviews in order for the researcher to gain a more comprehensive understanding of the views of different groups of excellent school members on their schools. The data from the two instruments, and viewpoints of the two groups of research participants were then analyzed to identify the elements that made the schools successful.

2) Research site and participants

The school's management goals are evaluated every year: the management goals refer to the school's daily work management goals, the school's internal management goals, and the school reputation (opinion survey) goals. The comprehensive evaluation results of the school's objective management are divided into three levels: excellent, good, and qualified. These schools are popular among parents because they could produce high academic achievement

with moral and good behaviour. Fujiaqiao Town Middle School, Yongzhou No. 9 Middle School, and Shuikoushan Town Middle School were selected based on the results of the 2019 School Objective Management Comprehensive Evaluation by the Education Bureau, which nominated these schools as excellent schools. The quantitative data came from responses to the questionnaires distributed to 392 participating teachers. In terms of the background profile of the respondents, the ratio of male and female teachers is almost equal to that of male teachers (49.23%), and the rest are female teachers (50.77). Most of the respondents are 18-29 years old (34.43%) and 40-49 years old age group (28.32%), and the number of respondents whose education background belongs to undergraduates is the largest (91.33). However, most teachers are already in the 1-5 years of school service (43.36%), followed by more than 10 years (35.45%).

The qualitative data from semi-structured interviews was voiced by the principals of the three excellent schools. Principal One graduated from university in 1996, and he has been teaching chemistry in Fujiaqiao Town Middle School. Since September 2017, he has served as the principal of Fujiaqiao Town Middle School. In the past three years, he has been rated as “Outstanding Principal of Lingling District”, and has been awarded the title of Excellent Teacher of the District and Model of Teacher Ethics many times. Since serving as the principal, he has boldly made efforts to build the teaching team and explored the construction of “a warm education model”. Principal Two has been teaching and serving in the education system since he started working in 1989. In August 2014, he was transferred to the principal of Yongzhou Fifth Middle School. In 2019, he was appointed as the principal of Yongzhou Ninth Middle School. At the same time, he was also a representative of the Ninth and Tenth National People’s Congress. He has been named an outstanding principal for many years in a row. His educational philosophy is to teach every student well and run a good school that the people are satisfied with. Principal Three has been working since 1997 and is currently the principal of the middle school in Shuikoushan Town, which has been rated as an excellent school by the Education Bureau of Yongzhou for many years! He has always adhered to “caring for education with love and warmth, you will reap the spring of education”.

3) Research instruments

The two instruments were the teacher questionnaires and semi-structured interviews for use with principals were designed by the research. From the literature review on conditions or factors that make learning organizations successful, ten factors/conditions were found: school policies and goals, flexible and transparent management, different types of learning, cooperation, facing change, supportive environment, growth/ professional development, leadership, sharing vision, information technology. 45 questionnaire items were adopted from Marsick and Watkins (2003) based on the 10 emerging factors. Five experts were invited to validate the questionnaire and semi-interview questions. The total number of the items was 45 items with the total average IOC score is 0.81, and the validity score of interview questions was 0.8. The pilot study was done in June 2021. The reliability of the questionnaire was 0.81. Since the study was conducted in China, the original English questionnaire was translated into

Chinese by an accredited company to ensure that the Chinese version was equivalent to the English version.

A list of interview questions was prepared to elicit the answers from the participants, who function as the principals of schools so that the study's objectives would be achieved. The interview questions were designed as follows: 1) Can you tell me about your school's learning strategies to adapt to changes? 2) What is the culture of cooperation in your school? Please explain. 3) Does the school encourage innovation? In what ways? 4) Do you think, in your school, the teachers can work in teams? 5) In your opinion, does everyone share the same vision for school development?

The interview data were analyzed by Grounded Theory, mainly divided into four steps 1) Open coding (Categorizing data by thought units such as, single words, line by line, sentence by sentence and paragraph by paragraph); 2) Axial coding means data reduction (put similar thoughts together in themes or topics); 3) Selective coding which means further data reduction by conceptualizing (with The Constant Comparative Method); 4) The core concept means one central theme emerges as a result of selective coding.

4) Data collection

After permission was obtained from the Education Bureau; the three included excellent schools. The researcher went to the school to meet the teachers and invited them to participate in this study. The random sampling technique was adopted to select the sample the formula of Yamane (1967) was used to calculate the number of the sample size group as 380 people were required to participate, and a 5% more sample size was sent to ensure that sufficient sample size. A total of 400 teachers were invited to participate in this survey, and 392 questionnaires were completed. The questionnaire response rate is 98 percent, reaching the required sample size of 380 people in this study. In total, 392 teachers completed the consent forms and questionnaires. The appropriate consent forms and interviews were conducted with 3 principals.

The data were collected from the teachers before the in-depth interview of the principals were conducted. The principals granted permission for taking recording the interview data. Each principal was interviewed for 45 minutes in each principal's office.

When completing the data collection, the participant's identities are replaced with digital codes to maintain their confidentiality. The collected data is for research use only, is stored in a computer protected by a password, and can only be accessed by the researcher. The data will be archived on the computer for three years before being permanently deleted.

5) Data analysis

The quantitative data, which was questionnaire analyses used in this study, were exploratory factor analysis (EFA) to increase the scale's reliability by grouping items of the same factors together. In contrast, confirmatory factor analysis (CFA) verified the correspondence (Gallagher & Brown, 2013).

The researcher prepared four broad prompt questions to obtain the answers, which could be used for reference later. However, it was not necessary to use them all. If the interviewee could go on talking about specific topics in a natural flow, there was no need to use these questions. Interview data were analyzed by Grounded Theory (Glaser & Strauss, 2017). Grounded Theory (GT) is a qualitative research method used to reduce the data into categories and concepts to arrive at the theory (Scott & Medaugh, 2017).

6) Ethical considerations

The research proposal was approved by the Ethics Review Committee of Rangsit University for permission to conduct the study; the number of the approval certificate is COA. NO. RSUERB2021-028. The researcher explained the purpose and content of the research to the participants in order for the participants to better understand and support this study. All participants voluntarily signed an informed consent form to participate in the study. They knew they had the right to withdraw from the study without any blame or punishment. All the data collected from the participants were used by the researcher only and were stored correctly.

Findings

According to research objectives, through quantitative questionnaire surveys (392 teachers) and semi-structured interviews (3 principals), after obtaining data, questionnaire analysis using factor analysis, and interview data using grounded theory analysis, identified the conditions for the success of excellent schools include: 1) Policies and goals, 2) Supportive environment, 3) Professional development, 4) Collaboration, 5) Strategies to adapt to changes, 6) Leadership, 7) Sharing vision, and 8) Information technology. Among the eight conditions, the three top ones by the mean score are leadership, Strategies to adapt to changes, and sharing vision. From the three principals' interviews, six themes emerged: 1) Changes in all areas affecting education and Change-facing strategies, 2) Choices of curricula and pedagogies, 3) Successful ways to teacher development, 4) Student preparation for the Future, 5) Cooperation of all school stakeholders, and 6) Focus on innovations. Based on the findings, a recommended model consisting of five conditions for success are: 1) Major factors in the background, 2) Target groups of people for development, 3) The areas of training and development, 4) Stakeholders for collaboration, and 5) Innovation focus for the schools which aim to become excellent schools has been proposed.

1) The conditions for the success of the excellent schools

The first research question explored the conditions for the success of excellent schools through the questionnaire survey of teachers in excellent schools and semi- instructed interviews with principals.

1.1 Findings from the Teachers

1.1.1 Findings from exploratory factor analysis

The modified questionnaire for the conditions for the success of the excellent schools, a total of 45 measurement items, with the Likert five-point scale to calculate the recognition degree, was distributed to the teacher participants from the excellent schools. The scoring standard is as follows: The Mean scores of 4.50 -5.00 = Strongly Agree (SA); The Mean scores of 3.50-4.49 = Agree (A); The Mean scores of 2.50-3.49 = Neutrally Agree (NA); The Mean scores of 1.50-2.49 = Disagree (D); The Mean scores of 1.00-1.49 = Strongly Disagree (SD).

In this study, through further analysis of the survey data, there are a total of ten variables for the success conditions of excellent schools: Policies and goals; Flexible and transparent management; Different types of learning; Cooperation; Facing changes; Growth/ professional development; Supportive environment; Leadership; Shared vision; Information technology, given of the continuity of variables, this article makes the following statistical description of the selected variables. It can be seen from the result that the value of the variable is in a reasonable range, and the data is close to a normal distribution. Since the normality of the distribution is confirmed, indicating suitable for exploratory factor analysis (Kim, 2011). SPSS was used to perform exploratory factor analysis.

Table 1 The initial measurement of the central tendency of the latent variable structure was developed for research and used in confirmatory factor analysis (n = 392)

The conditions for success of the excellent schools	Mean	S.D.	SK	KU	Interpretation
Policies and goals	4.140	0.483	-0.471	-0.197	Agree
Flexible and transparent management	4.090	0.671	-0.487	-0.517	Agree
Different types of learning	4.236	0.557	-0.602	-0.229	Agree
Cooperation	4.360	0.614	-0.698	0.141	Agree
Facing changes	4.395	0.514	-0.671	-0.153	Agree
Growth /professional development	3.845	0.495	-0.573	0.272	Agree
Supportive environment	3.938	0.594	-0.645	0.210	Agree
Leadership	4.488	0.501	-0.692	-0.670	Agree
Sharing vision	4.365	0.577	-0.642	-0.393	Agree
Information technology	4.180	0.571	-0.603	-0.527	Agree

Note: SD = Standard Deviation; SK = Skewness; UK = Kurtosis

KMO and Bartlett tests were performed to determine the suitability of the samples for exploratory factor analysis. The results are shown in Table 2 below:

Table 2 KMO and Bartlett's test tables

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.878
Bartlett's Test of Sphericity	Approx. Chi-Square	4056.091
	Df	990
	Sig.	0.000

Bartlett's spherical test value is large enough, and the Sig value is 0.000, less than 0.05, which has correlation and is suitable for factor analysis. The KMO value is 0.878, which is more than 0.6. It is suitable for factor analysis (Orçan, 2018).

The Principal Axis Factoring method extracts the common factors, and uses the Promax with Kaiser Normalization Rotation method to rotate the factors. The initial eigenvalues greater than 1 were needed as the interception standard to intercept the common factors (Bandalos & Finney, 2018).

In order to further improve the quality of the questionnaire, this study re-analyzed the items in the formal questionnaire, deleting items with a low degree of commonality and factor loadings below 0.5. After multiple exploratory factor analyses of the remaining items, the "A questionnaire of the conditions of excellent school success" retains 37 valid items, and 8 items are deleted from the formal questionnaire, and the items are deleted as follows:

Q1. School goals and mission are clear; Q6. My school has clear rules and regulations for all to follow; Q10. In my school, teachers openly discuss mistakes to learn from them; Q13. In my school, teachers view problems in their work as an opportunity to learn; Q25. In my school, teachers give open and honest feedback to each other; Q27. In my school, teachers respect the opinions of other members; Q28. My school emphasizes the professional development of the teachers; Q31. My schools welcome new ideals for their professional development for all members.

Further analysis of the 37 items of "The questionnaire of the conditions for the success of the excellent schools" reveals a more apparent eight-dimensional structure with a variance explanation rate of 84.736%, as shown in Table 3. The initial eigenvalues less than 1 will not be displayed in Table 4, making the components of the standard factor clearer.

Table 3 Eigenvalues, total variances explained for a preliminary eight-factor structure

Factor	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	5.664	12.872	12.872	5.664	12.872	12.872	2.546	5.787	50.787
2	2.005	4.558	37.429	2.005	4.558	37.429	2.283	5.188	50.975
3	1.798	4.087	51.516	1.798	4.087	51.516	2.250	5.114	66.089
4	1.583	3.598	65.114	1.583	3.598	65.114	1.980	4.501	70.589
5	1.466	3.332	68.446	1.466	3.332	68.446	1.618	3.678	74.267
6	1.452	3.299	71.745	1.452	3.299	71.745	1.593	3.620	77.887
7	1.369	3.111	74.856	1.369	3.111	74.856	1.514	3.440	81.327
8	1.308	2.974	77.830	1.308	2.974	77.830	1.500	3.409	84.736
9	0.864	2.873	80.703	-	-	-	-	-	-

Table 4 shows the factor loading matrix after rotation. Through factor rotation, each factor will have a more precise meaning. The absolute value of the option is set to the minimum standard 0.4, and the value less than 0.4 will not be displayed in the table, making the components of the standard factor clearer.

Table 4 The items and final eight-factor structure of the conditions for the success of the excellent schools' instrument after factor reduction procedures

The conditions for success of the excellent schools	Rotated Factor Matrix							
	1	2	3	4	5	6	7	8
2. I am involved in developing the school's goals.	0.794							
3. Teachers at my school regularly participate in activities to review and revise our school's development goals.	0.656							
4. Administrators and teachers often meet to discuss school policies and goals.	0.539							
5. My school's policies and goals result in school achievements.	0.656							
7. My school makes its lessons learned available to all employees.		0.446						
8. Teacher can design their own teaching methods.		0.545						
9. My school treats all teachers equally.		0.595						
24. In my school, teams/groups are rewarded for their achievements as a team/group.		0.530						
26. In my school, teachers treat each other with respect.		0.670						
11. My school encourages teachers to participate in continuing education.			0.484					
12. My school encourages teachers to participate on-the-job training.			0.516					
14. My school encourages group and team learning in various ways.			0.502					
15. In my school, teachers help one another learn.			0.513					
29. My school can provide teachers with the latest teacher professional development information.			0.716					
30. My school regularly invite outside expert to training teachers.			0.573					
16. In my school teachers often discuss teaching issues and share teaching data.				0.633				
17. In my school, I often have the opportunity to exchange experiences with other members.				0.681				
18. In my school, I often have the opportunity to learn about others best practices.				0.615				
19. Teachers can openly discuss school issues with school administrators.				0.597				
20. The school's goal of cultivating students will be adjusted regularly to meet the needs of the times.					0.634			

The conditions for success of the excellent schools	Rotated Factor Matrix							
	1	2	3	4	5	6	7	8
21.The school will carry out systematic reforms in response to the goal of modernization of China's education.					0.550			
22.The school will regularly update teachers' teaching concepts to keep their teaching methods up to date.					0.530			
23.The school encourages teachers to enhance the ability of teaching and research.					0.691			
32.In my school, leaders share up-to-date information with employees about teaching and learning.						0.705		
33.In my school, leaders generally accommodate requests for learning opportunities and training.						0.423		
34.In my school, the leader has always cultivated and improved the teacher's problem-solving ability.						0.521		
35.In my school, leaders of our school have been preparing for greater responsibilities.						0.757		
36.In my school, leaders ensure that the organization's actions are consistent with its values.							0.554	
37.In my school, teachers are welcome to propose ideas for school development.							0.596	
38.My school invites teachers to contribute to the organization's vision.							0.565	
39.My school builds alignment of visions across different levels and work groups.							0.601	
40.Teachers are involved in proposing ways to the goals and mission of the school.							0.554	
41.My school builds a new education and teaching model based on information technology.								0.455
42.My school promotes the deep integration of information technology and education and teaching.								0.695
43.My school makes full use of information technology to develop a talent training model.								0.463
44.My school makes full use of information technology to carry out the reform of human teaching methods.								0.689
45.Achieve full coverage of teachers and students in the application of information teaching and learning.								0.592

Note: Extraction method: Principal Axis Factoring. Rotation Method: Promax with Kaiser Normalization. a. Rotation converged in 5 iterations.

Through exploratory factor analysis of the sample of N = 392, eight factors emerged with similar items grouped together. They are 1) Policies and goals (Items 2, 3, 4 and 5), 2) Supportive environment (Items 7, 8, 9, 24 and 26), 3) Professional development (Items 11,12, 14, 15, 29 and 30), 4) Strategies to adapt to changes (Items 16,17,18 and19), 5) Collaboration (Items 20,21,22 and 23), 6) Leadership (Items 32, 33, 34 and 35) 7) Shared vision (Items 36,37,38,39 and 40), as well as 8) Information technology (Items 41,42,43, 44 and 45).

1.1.2 Findings from confirmatory factor analysis

Through exploratory factor analysis of the sample of N = 392, this study has initially obtained an eight-factor model of the conditions for the success of the excellent schools, including: Policies and goals, supportive environment, professional development, strategies to adapt to change, collaboration, leadership, sharing vision, information technology. To further test the rationality of the structure of the eight-factor model for the success conditions of excellent schools, this research will continue to carry out confirmatory factor analysis to test the theoretical relationship between the observed items and common factors.

The confirmatory factor analysis adopts the questionnaire of the conditions for success of the excellent schools after exploratory factor analysis, after deleting the items and a total of 37 items. According to the Likert five-point scale, the scoring standards are 1-strongly disagree, 2-disagree, 3-Fair, 4-Agree, 5-Strongly agree. Considering the small sample size, this study uses AMOS, which is more suitable for small samples, for confirmatory factor analysis.

Use the confirmatory factor test group to fit the eight-factor ideal model obtained by exploratory factor analysis. Finally, obtain a fully standardized solution of the eight-factor model of the conditions for the success of the excellent schools. The analysis result is shown in Figure 1.

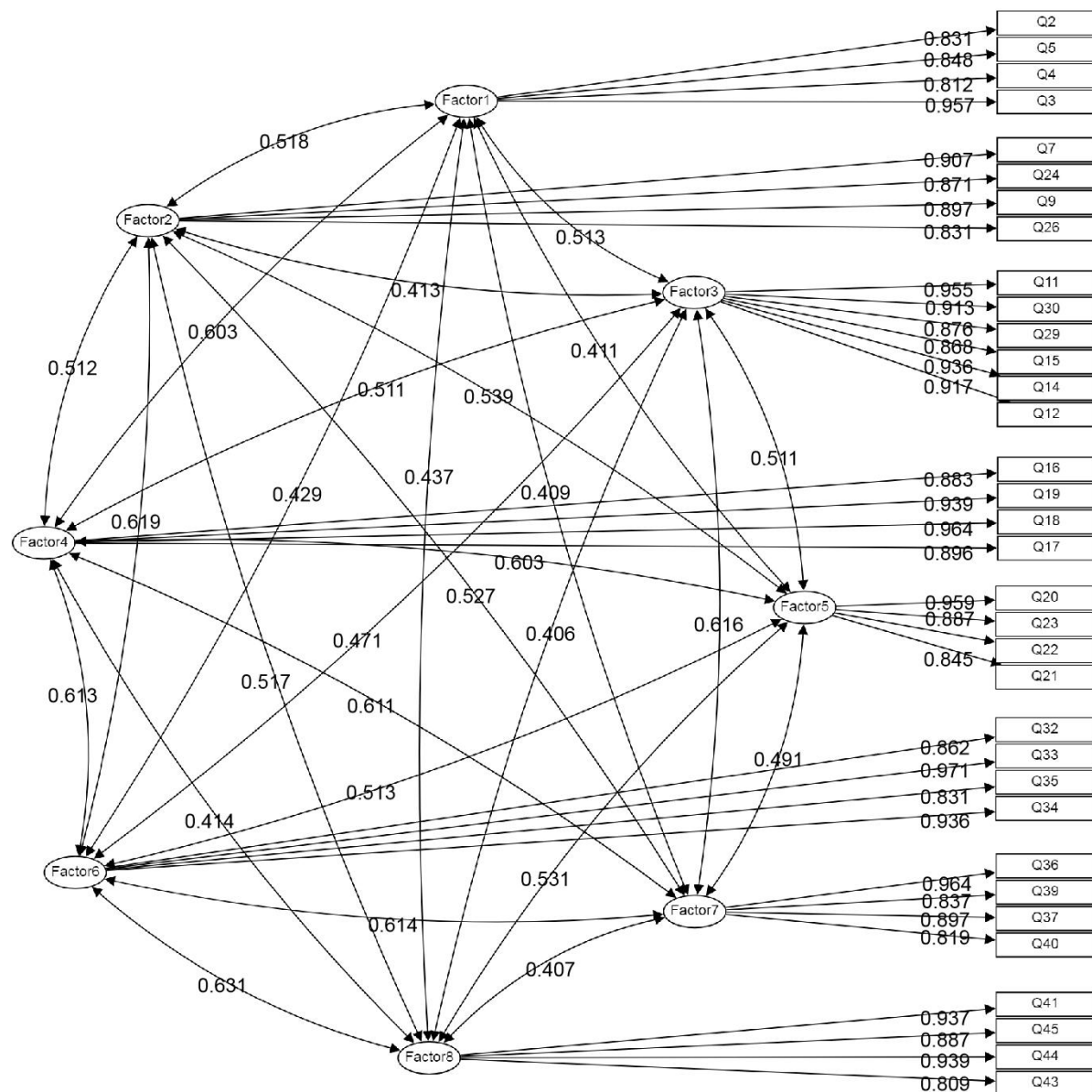


Figure 1 Eight-factor model of the conditions for the success of the excellent schools

The fit of confirmatory factor analysis indicators about the questionnaire of the conditions for the success of the excellent school is shown in Table 5. In the chi-square test of goodness of fit, the structural model fit index CMIN/DF is 2.57, and the fit index is between 1- 3, indicating a high degree of fit. In addition, RMSEF= 0.092<0.1, GFI= 0.918>0.9, TLI= 0.937>0.9, confirmatory factor analysis indicators are all within a reasonable range (Orçan, 2018). Thus, the eight-factor model of the conditions for the success of excellent schools has been confirmed.

Table 5 Model fit indices

Fit Indexes	Acceptable level	Result
Chi-square	Values with non significant p-value	
Normed Chi-square	< 3.000	2.570
Goodness-of-fit Index (GFI)	≥ 0.900	0.931
Adjusted Goodness-of-fit Index (AGFI)	≥ 0.900	0.914
Tucker-Lewis Index (TLI)	≥ 0.900	0.937
Comparative Fit Index (CFI)	≥ 0.900	0.918
Root Mean Square of Error of Estimation (RMSEA)	≤ 0.100	0.092

1.2 Findings from the Principals' Interviews

Participants gave the interviews, framed by the four prompt questions: 1) Can you tell me about the learning strategies your school uses to adapt to changes? 2) What is the culture of cooperation in your school? Please explain. 3) Does the school encourage innovation? In what ways? 4) Do you think, in your school, the teachers can work in teams? The interview data were collected from three principals of the excellent schools in the study. Each principal was interviewed for 45 minutes so that his thoughts and ideas for the development of his school could be investigated in depth. Table 6 shows the number of thought units present in each research participant's interview from the Open Coding Step to the Axial Coding Step with categories resulting from data reduction techniques to fewer categories in the Selective Coding Step.

Table 6 Examples of Interview Data Analysis from Open Coding to Axial Coding to Selective Coding Leading to the Core Concept

	Open Coding	Axial Coding	Selective Coding	Core The Concept
Principal One	Units of 51) (Thoughts (Changes (6 (1 World changes-- Changes in politics-- Changes in the -- economy Changes in people-- Changes in the -- future Change of -- knowledge (Facing changes (9 (2 Plan how to keep up -- with times how to lead the Plan-- trend Use the collective -- wisdom Renewal of -- knowledge Old teachers and -- young teachers working together Update education -- concepts Networking with -- others Emphasize learning-- New attitude-- Teacher (3 Development (11) -Encourage self-- -study and self directed learning More sponsored -- training	Changes in all (1 areas Ways to (2 successfully face changes Appropriate ways (3 to Teacher Development Preparation for (4 students	Changes in all (1 areas affecting education and facing-Change Strategies Choices of (2 curricula and pedagogies for modern education Successful Ways (3 for teacher development Student (4 preparation for the Future Cooperation and (5 Networking with all school stakeholders Focus on (6 Innovations	Conditions or Factors for Success of Three Excellent Schools

According to the above steps, 134 thought units were obtained. The interview data were reduced from 134 thought units to 14 categories or topics that covered the essence of all the thought units present in the three Principals' interviews. 14 categories that pointed out the same themes were then grouped again in the selective coding, where patterns among the categories

were found. After that, the six themes from selective coding would go through the attempt of the researcher to merge them until the core concept emerges. In this way, the researcher could explain what these principals thought of their schools and what they believed should be done for the school's success. The final result is shown in Figure 2.

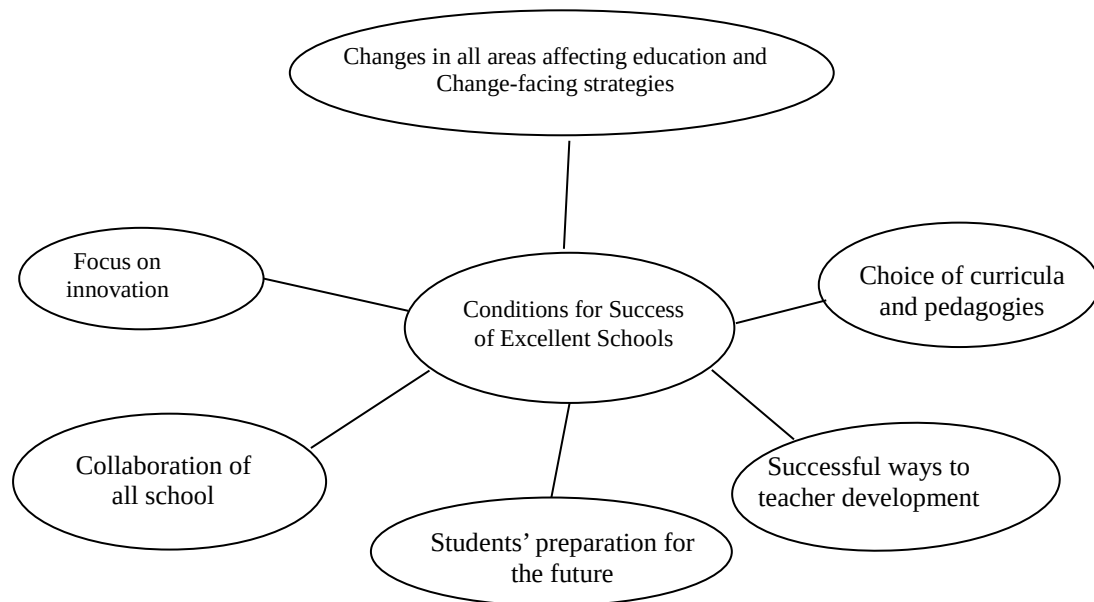


Figure 2 A map showing the six conditions for the success of the excellent schools

Based on the analysis of the interviewed data, it can be concluded that the principal's conditions for the success of an excellent school can be classified into six conditions: 1) Changes in all areas affecting education and change-facing strategies 2) Choices of curricula and pedagogies 3) Successful ways to teacher development 4) Student preparation for the Future and 5) Cooperation of all school stakeholders and 6) Focus on Innovation.

2) The Model for the Development of Excellent Schools

Although the analysis of the questionnaire data and the interview data provided slightly different responses, similar findings can be combined and concluded. The following figure 3 shows the factors or conditions derived from both instruments.

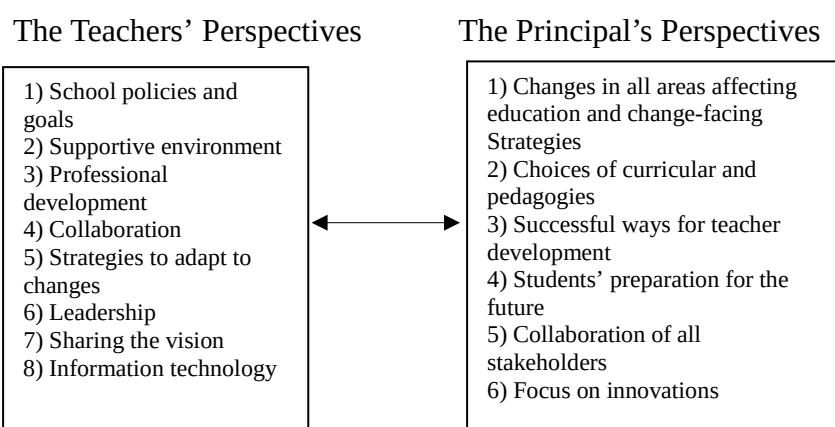


Figure 3 Conditions for success of the excellent schools based on the teachers' and the principals' perspectives

It may be expected that the Principals did not mention the school policies and goals, leadership, and vision sharing because the leaders believed that these factors already existed. The responses from the questionnaires on eight topics/themes were found to be close to what the principals thought. It could be summarized that although different terms were used in the questionnaires and the categories from the interview analysis, both the teachers and the principals thought of the same conditions. They knew that they were affected by changes, not within the schools but from the forceful contexts outside, the changing world in all areas that also affected education.

Thus, they realized the need to find ways to cope with the changes. For the schools, teachers needed to be trained for high quality teaching. In contrast, students needed to get the best teachers the schools could afford in terms of the mastery of curriculum design and pedagogical approaches. That is why both sides mentioned teacher development or professional development. Good teachers would produce good students. Choices of curricula and pedagogies were necessary for the teachers in the eyes of the Principals and these could be the topics for training. New teaching methods for the Principals cover digital teaching, which teachers were required to bring into upgrading their teaching. In addition, schools could not be successful without support from the stakeholders. All parties had to work together closely for the benefit of the schools. Teachers needed to learn to work in teams but the Principals covered more parties in the interviews. Teachers had to work well together, while they had to work in support of their students and vice versa. Then, the schools had to work with parents or the communities by listening to the feedback of the parents more and parents fully cooperating with the schools. Finally, focus on innovations had to be promoted as the schools' goal catch up with the changing world by being in the lead.

In responding to the second research question, "What is an appropriate model for the development of excellent schools in Hunan, China?", If the conditions for success found in the questionnaire responses and the Principals' interviews were synthesized further, the study would propose the following model for the development of excellent schools that wish to be

successful as learning organization schools so that they will be able to catch up with the world changes and become leaders in the field. The five-star model consists of five conditions for success: significant factors in the background, target groups of people for development, the areas of training and development, collaboration from the stakeholders, and innovation focus. Figure 4 shows below the five-star model.

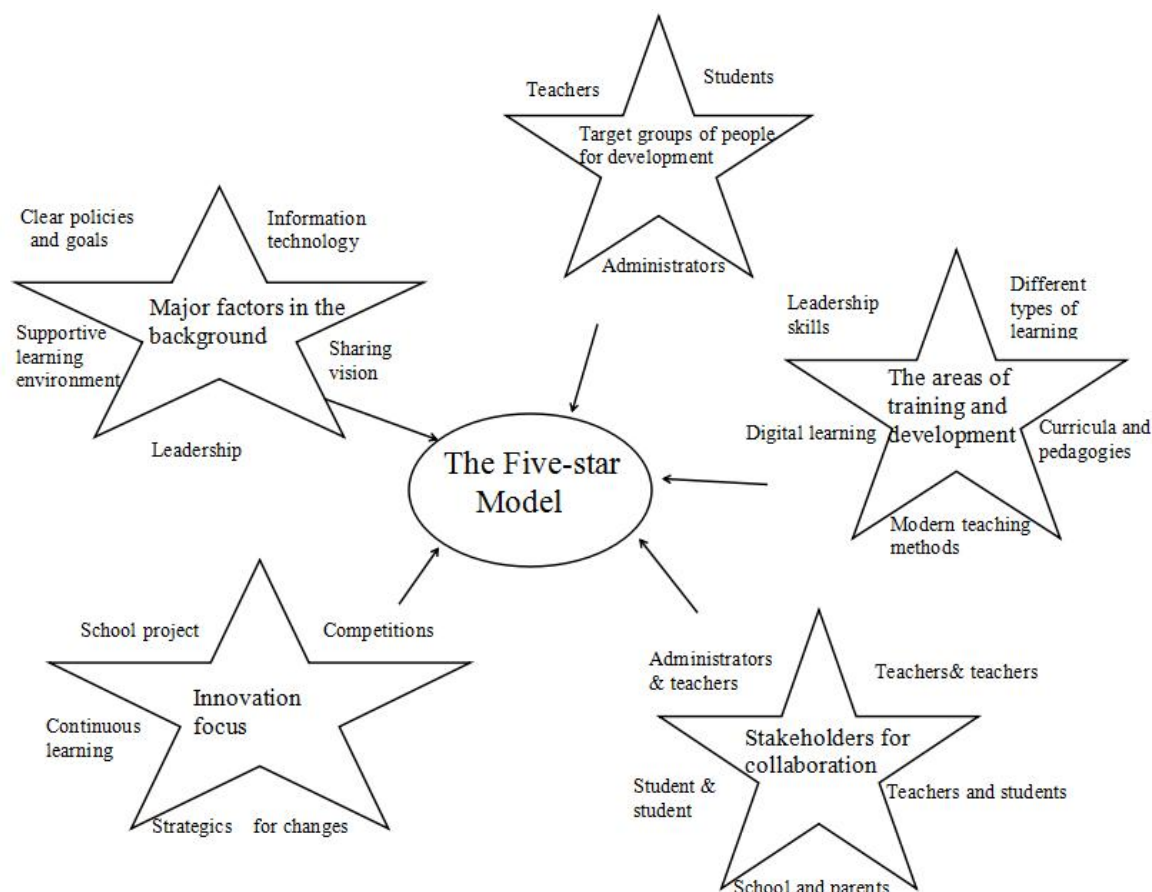


Figure 4 A proposed model for excellent schools

The findings for Research Question 1 and those of Research Question 2 point out that the excellent schools need to have significant infrastructure that would move the school fast. That is major factors in the background. The supportive foundation must be firmly placed there: clear policies and goals (for all stakeholders to follow without making any errors, a supportive environment (for all to work happily together under an atmosphere of trust and friendship), information technology (which means the system that will enable fast and convenient communication as well as systematic, efficient, and practical). Equally important, people in leadership positions must make others feel they want to work and contribute to the organization by allowing every member to shape the same vision. The teachers see the significance of professional development, which corresponds with the principals' wish to find successful teacher development methods. One urgent area for them is appropriate curricula and

pedagogies which is true in today's context. Society faces continual changes that include economic, political, and social. Children born today become a different generation, adding to others before this group, such as Gen X, Gen Y, and Gen Z, and the net generation schools cannot remain unchanged (Levickaite, 2010). As leaders of the schools, the three principals believe that the most important responsibility of the school is to prepare students for the future. This can be done by enhancing the students and the teachers to innovate.

The 5-star model presents the five conditions for success, starting with major factors in the background as the first success condition. Then, all parties in the school are the target groups of people for development. They must be trained to sharpen their knowledge and skills. This is the second condition for success. The groups of people must be identified and their needs analyzed to design the areas of training and development. This third condition for success will enable the school to improve the quality of all the people in the school. For the school to become excellent in terms of more expansion by welcoming all the support, it needs to combine all the stakeholders' efforts in their wishes to contribute to the school in several different ways and different combination groups. The school should not only look inside the school; it should also look at the world around it. Thus, the fifth condition for success requires that the school encourage innovations in various formats, some scientific inventions by the students, or some products which result from the efforts of the school personnel and people in the community. The conclusion is to create an atmosphere of lifelong learning, promote professional development through learning, establish a school-based teacher professional development mechanism, lead teachers to form a shared vision, enrich management connotation, and strengthen management's leading function. Principals must design a learning organization from a management perspective and participate in the implementation of the design; it is necessary to organize specific learning activities coordinate work between different organizations.

Discussion

Adapting to changes and meeting challenges are natural and common phenomena since the world rapidly changes. The field of education will need to accept and respond to change. Individual learning, once considered beneficial and sufficient is no longer enough. Organizations need to learn from all members. Each member must take his or her responsibility for learning seriously. As a result, teachers should pay attention to their continuous learning and need to promote the professional development of teachers collectively (Marsick & Watkins, 2003). A well-regulated system environment produces people with the system characteristics (Harris & Jones, 2018). The systematic changes people by influencing behaviors and prompting them to perform certain expected behaviors (Palujanskiene & Svagzdiene, 2020). Leaders of excellent schools have a clear view of the future development of their schools. They are the motivators of behavior: they constantly describe the school's developmental vision to school teachers, are committed to collaboration between teachers, and encourage teachers to adopt a series of strategies for collaboration (Iqbal & Ahmad, 2021). According to Northouse (2021); Snell and Swanson (2000), educational leaders can influence change towards a shared vision through

empowerment and building relationships. At the same time, it should be noted that to improve the quality of education, the focus must be shifted from the classroom level to the organizational level, and efforts should be made to improve the school system and school management (Darwin, 2017).

In the analysis process of this research, the scale is based on the learning organization to explore the conditions for the success of excellent schools. In the research of most domestic scholars, there are few in-depth discussions on the “Chinese-style” leadership and working culture. Organization and culture are at the forefront of school leaders’ implementation of structures that allow for parental involvement and strong partnership (Dillion, 2020, p.6). Thus, the principal plays a vital role in a strong learning school.

Conclusion

The questionnaire data analysis revealed eight aspects that shaped a learning organization: 1) Policies and goals 2) Supportive environment 3) Professional development 4) Collaboration 5) Strategies to adapt to changes 6) Leadership 7) Sharing vision and 8) Information technology. From the three principals’ interviews, six themes emerged: 1) Changes in all areas affecting education and Change-facing Strategies, 2) Choices of curricula and pedagogies 3) Successful ways to teacher development 4) Student preparation for the Future 5) Cooperation of all school stakeholders, and 6) Focus on innovations. These two perspectives from the teachers and the principals were similar in addressing policies and goals and information technology’s supportive environment. The teachers asked for leadership, sharing vision, and collaboration to work effectively. Based on the findings, a recommended model consisting of five conditions for success are 1) Major factors in the background 2) Target groups of people for development 3) The areas of training and development 4) Stakeholders for collaboration, and 5) Innovation focus for the schools which aim to become excellent schools has been proposed.

Implications that emerged from the study can be seen in how the Chinese leadership style can be maximized for the benefit of schools as learning organizations. Literature from the West may not be fully addressed. This area is worth exploring further. Equally important is how Chinese teachers can work effectively as a team since culture is a dominating factor determining whether a school can learn.

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