A STUDY ON CURRICULUM LEADERSHIP INDICATORS REGARDING ELEMENTARY SCHOOL DEAN OF ACADEMIC AFFAIRS

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ABSTRACT

This research aims to construct local curriculum leadership indicators, and understands current operations takes elementary school dean of academic affairs as its main research object. At first, via documentary analysis, it summarizes curriculum leadership dimensions, perspectives, items, and indicators. Then, hiring scholars and professionals as members for Delphi Technique assigned with major missions to judge based on curriculum leadership indicators. Continued with three-round questionnaires of Delphi Technique, it points appropriate standards for curriculum leadership indicators. Finally, with above development, it obtains local indicators, and dictates local curriculum leadership operational effects, or problems in order to complete this conclusion and provides advice.

Keywords: Dean of Academic Affairs, Curriculum Leadership Indicators, Delphi Technique.

RESEARCH MOTIVATIONS

Curriculum reform is one of the most important core work in the present educational reform (Eisner, 1995), among which curriculum leadership is an issue concerned considerably in this wave of reform. In addition, curriculum leadership is regarded as the main point work to implement Grade 1-9 Curriculum Reform; especially, the principal and dean of academic affairs' role of leadership as well as their leading tasks are valued considerably. Currently, regarding investigations and development of the internal and external curriculum leadership range from understanding the current condition, role, function, task, and strategy, to construction and promotion of theoretical models for curriculum leadership (Chen Ching-i, 2005; Huang Hsu-chin, 2003). Nevertheless, owing that curriculum leadership is actually a kind of comprehensive work covering leadership, curriculum, and teaching with extremely high degree of complexity, the interaction and inter-correlation between the individual and the group is not only difficult to investigate by merely scientific methods (Ou Yung-sheng, 2004), but also tough to deal with through technologies like administration, bureaucracy, order, control, or formulations. Particularly, in Taiwan region, sincegrade 2001, Grade 1-9 Curriculum Reform was implemented all-dimensionally in Grade 1 in the elementary school to proceed school-based curriculum development (Huang Cheng-jieh, 1999; Huang Chia-hsiung, 2001; Kao Hsin-chien, 1999; Lin Ming-dih, 2000; Fang De-lomg, 2001; Chen Po-chang, 2001). From then on, the traditional stereotypical impression on school curriculum under centralization of the government in the past was broken down, the schools were authorized to assign the educational personnel to take part in curriculum development (Tsai Ching-tien, 2002). Among the reform actions, curriculum leadership played the role of key element in school-based curriculum development (Tsai Ching-tien, 2004); without curriculum leadership, the goals and value could not be clarified, and the plan of reform could not be developed nor put into practice (Wiles & Bondi, 1993). Furthermore, in order to proceed

school-based curriculum development, the principals and teachers in Taiwan region started to care the issues and methods of curriculum leaderships, and the educational academic personnel also began to increase considerably amount of studies related to curriculum leadership. In this wave of surveys relative to curriculum leadership, the primary focus is concentrated on principal's curriculum leadership. However, curriculum leadership is not confined to principal leadership, for the principal may share the responsibility of curriculum leadership with the second promoter (Tsai Ching-tien,, Wang Hsiao-yen, 2002)--regardless of the principal, the administrative personnel, or the teachers, the role of curriculum leadership can be assigned to (Kao Hsin-chien, 2002). Therefore, for curriculum leadership assigned to dean of academic affairs, we should especially value, since dean of academic affairs in reality has extremely close relationship with the school curriculum. As such, this paper will further explore this issue.

According to Enforcement Rules of Compulsory Education Law, Article 17 lists the job responsibility of each section and office. The job responsibilities of Office of Academic Affairs include: editing and arrangement of each subject's courses, teaching implementation, school roll management, score assessment, teaching equipment, information and Internet equipment, teaching tool picture book data supply and teaching research, coordination with consultancy unit to implement educational consultancy, and so on (Department of Education, Ministry of Education, 2000). From the above listed job responsibilities, it is found that the job responsibility of Office of Academic Affairs in the elementary correlates with the school most tightly. Therefore, as the leader, the Dean of Office of Academic Affairs seemingly has to take the responsibility of curriculum leadership in curriculum reform. Presently, it is the school teacher to hold the Dean of Office of Academic Affairs concurrently in elementary schools in Taiwan. That is to say, in addition to bearing the school's administrative affairs, the Dean of Office of Academic Affairs has to take charge of teaching tasks in the school. As a result, in face of the principal, the Dean of Office of Academic Affairs is in the subordinate position, while in face of the general teachers, the Dean is likely to situate in the same level of position, or in the higher level due to his/her special administrative authority. Under the bureaucratic system of the school organization, the role of the Dean of Office of Academic Affairs is somewhat vague and hard to grasp, which further influences the administrative measures. Especially, in regard of the process of promoting the school-based curriculum development, he/she may face the influence of various factors because of such vagueness of role definition. Therefore, the Dean of Office of Academic Affairs plays a role of leader different from the principal's role of the curriculum leader, and adopts the curriculum leadership strategies different from what the principal adopts (Chen Ching-i, 2005; Huang Chi-lung, 2000; Yiu Chia-cheng, Hsu T'eng-lung, 2003).

To conclude, if we can follow the relative literature, and consult the foreign experiences to develop the aspects, items, and indicators of the leadership role of the Dean of Office of Academic Affairs, and to organize, generalize, compare, analyze, and synthesize the viewpoints of the experts, scholars, and practical workers in order to construct a set of indicator system of curriculum leadership of the Dean of Office of Academic Affairs, it is believed to be helpful for effectively applying the philosophy of curriculum leadership to the school-based curriculum development, and further depict the practical strategies for operation in reality practically. In this way, the conduct of school curriculum leadership will connect with the Dean of Office of Academic Affairs' efforts and cooperation even more sufficiently, and link the curriculum teaching and learning activities even more tightly. Since there is already certain research foundation of exploration of the curriculum leadership indicators, and the internal relative studies are mostly subject to foreign theories or concepts for analysis

or discussion, it is thus indeed necessary to further probe into the theoretical content and argument foundation of the Dean of Office of Academic Affairs' curriculum leadership, as well as the important dimensions of the curriculum leadership's role and the indicator's system.

Research Purposes

1. Discuss Dean of Office of Academic Affairs' curriculum leadership's theoretical content and foundation.
2. Understand the important aspects of Dean of Office of Academic Affairs' implementing role of curriculum leadership
3. Construct the indicator system of Dean of Office of Academic Affairs' curriculum leadership
4. According to the research findings and results, propose relative suggestions to serve as reference for Dean of Office of Academic Affairs' curriculum leadership' practical work and the subsequent research

According to the research purposes above, further develop relative questions to be answered as follows:

1. What is the theoretical content and foundation of Dean of Office of Academic Affairs' curriculum leadership?
2. What are the important aspects in Dean of Office of Academic Affairs' role of curriculum leadership?
3. What is the proper indicator system of Dean of Office of Academic Affairs' role of curriculum leadership? (1). What are the aspects? (2). What are the items? (3). What are the indicators? (4). What is the fit of the indicators?

LITERATURE DISCUSSION

This research aims to discuss the theoretical content and the argument foundation of Dean of Office of Academic Affairs' curriculum leadership, the important aspects of role of leadership, and the indicator system of curriculum leadership. Therefore, before proceeding the research, the relative theories and the empirical literature were discussed first to serve as reference for the theoretical base and research tools' development, and build up the framework of this research. Literature discussion in this research includes the aspects of role of Dean of Office of Academic Affairs' curriculum leadership, and the influences of curriculum leadership on the school-based curriculum development to function as the reference for the subsequent studies.

The important aspects of role of Dean of Office of Academic Affairs' curriculum leadership

No matter it is the principal, administrative personnel, teachers, or parents, he/she may play the role of curriculum leadership, while different roles influence each decision-making of curriculum leadership. Among those roles, Office of Academic Affairs consists of Curriculum R&D Group, Teaching Group, Registration Equipment Group, and Information Group. Dean of Office of Academic Affairs is subordinate to the principal, and super-ordinate to the groups in the sections and offices as the coordinator and leader, playing a role that is diversified as well as crucial. In Wu Ch'ing-shan's (2004) point of view, Dean of Office of Academic Affairs' role involves: (1). Role of the unit's supervisor; (2). Role of

deputy principal; (3). Role of the policy advisor; (4). Role of plan conductor; (5). Role of communicator and coordinator; (6). Role of Curriculum promoter; (7). Role of teaching assessment; (8) Role of cultural and artistic activity promoter; (9). Role of teaching research initiator. According to Article 14 in the Enforcement Rules of Compulsory Education Law (Ministry of Education, 2004), it is indicated that Office of Academic Affairs tackles with items that cover: editing and arrangement of each subject's courses, teaching implementation, school roll management, score assessment, teaching equipment, information and Internet equipment, teaching tool picture book data supply and teaching research, coordination with consultancy unit to implement educational consultancy, and so on. Some schools set up Teaching and Instruction Office to take charge of business in Office of Academic Affairs and Disciplinary Office.

In process of proceeding curriculum leadership, Dean of Office of Academic Affairs endures heavy work and tasks. According to studies related to Dean of Office of Academic Affairs' curriculum leadership, the Dean should be an enthusiastic worker, a model who sets an example first, a positive and proactive learner, a critic who finds out the problem, a thinker with dimensional consideration, a communicator who is good at coordination, a sympathetic carer, a cooperator who collaboration with other, a task assigner who understands the subordinate's strength for placing him/her in the proper work position, and a trustable administrative personnel. Particularly, Dean of Office of Academic Affairs is the host of the curriculum and teaching in the whole school, and promotes the school's academic affairs subject to the principal's order, occupying the position that influences teachers' teaching work and the students' learning spirit (Huang Ch'ien-jung, 2010; Li Yi-hsin, 2009; Huang Ts'ui-ping, 2009; Chiang Wen-t'ung, 2008). At this point, whether the curriculum is quality, whether the educational goals are carried out, whether the compulsory education policy is put into practice thoroughly all rely on whether Dean of Office of Academic Affairs' practical curriculum leadership is implemented and whether his action strategies are proper, all prove the importance of Dean of Office of Academic Affairs' position.

Since various scholars and studies have different viewpoints of Dean of Office of Academic Affairs' curriculum leadership, the researcher tried to synthesize the diverse opinions into 6 aspects in Dean of Office of Academic Affairs' role of curriculum leadership (Li Yu-ju, 2007; Lin Wei-nien, 2005; Lin Chi-hung, 2005; Lin Feng-yi, 2006; Hung Wen-lien, 2005; Chen Mei-ling, 2002; Chen Jung-ch'ang, 2004; Chen Si-ting, 2005; Chen Jing-yi, 2005; Peng Yu-huang, 2007; Peng Ming-hsi, 2008; Yang Shi-k'ai, 2004; Tsai Ching-tien, 2002; Tsai Ching-tien, 2004; Tsai Ching-tien, 2005), as explained below:

(1) Create the prospect of school's curriculum, and construct the school's curriculum goals
The first important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to lead the school members to set up the school's curriculum goals according to the school's prospect. In addition, the Dean should formulate various kinds of projects and plans in order to put the school's prospect as well as the curriculum goals that can guide the school members and the community parents to inspect and modify the school's prospect and the curriculum goals (Fang Te-lung, 2001; Wu Ching-shan and Lin Tien-yo, 2001; Ou Yung-sheng, 2000; Glatthorn, 2000).

(2) Consolidate the school's curriculum organization, and develop the school's curriculum plan

The second important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to consolidate operation and development of the school's curriculum organization. Besides, according to the teacher's competency and the school's current condition, the Dean should lead for setting up curriculum groups in each territory for proceeding curriculum plan (Fang Te-lung, 2001; Wu Ching-shan and Lin Tien-yo, 2001; Huang Hsi-jin, 2001; Ou Jung-sheng, 2000; Glatthorn, 2000).

(3) Examine that the curriculum is practiced normally, and implement curriculum assessment's feedback

The third important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to explore the condition and effect of curriculum practice, process the field teachers' teaching demonstration, hold teaching seminars, and so on to verify whether curriculum practice complies with the original curriculum plan, conduct curriculum and teaching feedback and modification continuously, and employ curriculum connection (Translated by Shan Wen-jing, 2000).

(4) Provide supportive work environment and inspire and respect members' share

The forth important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to provide enough time, expense, personnel, and material resources to support curriculum development (Fang Te-lung, 2001; Wu Ching-shan and Lin Tien-yo, 2001; Huang Hsi-jin, 2001; Ou Jung-sheng, 2000; Glatthorn, 2000; Henderson & Hawthorne, 2000).

(5) Strengthen teachers; curriculum expertise and encourage teachers' professional growth

The fifth important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to plan the teachers' professional further study, provide the chances and time for teachers' professional growth to train knowledge and skills related to curriculum practice (Translated by Shan Wen-jing, 2000).

(6) Link with community parents' resources and develop a quality teaching environment

The sixth important aspect of Dean of Office of Academic Affairs' role of curriculum leadership is to link with the community resources to set up community--school mutually beneficial and coexisting relationship in order to form a strong supportive group. For example, parents, community members, or professionals can participate in curriculum planning and development together, sharing important information relative to school or the school district (Fang Te-lung, 2001; Wu Ching-shan and Lin Tien-yo, 2001; Huang Hsi-jin, 2001; Ou Jung-sheng, 2000; Glatthorn, 2000).

To conclude, the basic concept of Dean of Office of Academic Affairs' curriculum leadership lies in the Dean's bringing the role of leadership into a full play, setting up the curriculum goals, link resources from various dimensions, cultivate a beneficial environment, and foster the group's cooperation, sharing, and professional growth, effectively proceed curriculum and teaching design, and put it into practice in the actual class teaching based on raising students' learning effect (Tsai Ching-tien, 2002; Tsai Ching-tien, 2004; Tsai Ching-tien, 2005).

The influence of curriculum leadership on school-based curriculum development

From the overall perspective of school's educational institute, Tsai Ching-tien proposed that school-based curriculum development is proceeded with the philosophy of the school's overall curriculum leadership. As a result, the school's overall curriculum development should be composed by curriculum research, curriculum planning, curriculum design, curriculum practice, curriculum assessment, and curriculum operation that is schemed thoughtfully. On the other hand, the school's overall curriculum development should consist of the practical actions, including the process of situation analysis, prospect construction, program design, conduction & implementation, assessment and feedback, and supportive measures (Tsai Ching-tien, 2002; Tsai Ching-tien, 2004). Moreover, the general theoretical construction of overall curriculum contains the thoughtful scheme of six curriculum development: (1) the school's overall curriculum research; (2) the school's overall curriculum planning; (3) the school's overall curriculum design; (4) the school's overall curriculum practice; (5) the school's overall curriculum assessment; and (6) the school's overall curriculum operation. Meanwhile, there are six action strategies for implementing curriculum development, which have become the interactive model for the overall curriculum's theoretical construction and action strategies: (1) situation analysis; (2) Prospect construction; (3) program design; (4) Conduction and implementation; (5) Assessment and feedback; (6) Supportive measures (Fig. 1).

From the above-mentioned, we can know that sustainable leadership of school-based curriculum development includes curriculum research, curriculum planning, curriculum design, curriculum practice, curriculum assessment, and curriculum operation. Such sustainable leadership of school-based curriculum development stresses on the basic assumption of school-based curriculum development, and is the focus of curriculum development with the school as the center. In other words, school-based curriculum development is an effective method used to foster the school's change (Tsai Ching-tien, 2002; Tsai Ching-tien, 2004; Tsai Ching-tien, 2005). In the first place, through playing the role of recruiter of curriculum development committee, Dean of Office of Academic Affairs can try to overcome the communicative obstacles among the members, inspire and deepen the process of thoughtfulness and discussion (Henderson & Hawthorne, 2000), and enable curriculum development committee to become the school's curriculum forum for curriculum research proceeded with situational analysis (Doll, 1996; Reid, 1999).

Next, the proposal of school's common prospect is characterized with cohesion of the group's centripetal force and the same goal and direction for making efforts rather than personal style. Therefore, Dean of Office of Academic Affairs should make good use of transformation-based leadership to construct the school's common prospect (Henderson & Hawthorne, 2000), value the goal strived by the members, highlight the concept of community formed by teachers and students, especially concentrating on the values, affection, and conviction of the members (Doll, 1996). That is to say, if Dean of Office of Academic Affairs can lead the curriculum development committee to proceed supportive conversation, and develop common language as well as team spirit with the members of curriculum development committee, he/she will be able to guide the school-based curriculum development committee to transform into a learning-type organization, and further push the curriculum reform program.

Moreover, the school-based curriculum development program design involves foundation of program design group for the learning territory and activity curriculum to design the teaching

activities, teaching materials, students' grouping, the range, order, and organization of teaching content, and allocation of space, resources, and equipment. The leaders in Office of Academic Affairs, Curriculum Affairs Section, Curriculum Section, and Learning Territory are the curriculum leaders closest to the school's educational site, so they are sympathetic with the teachers' and the students' needs in the teaching situation. Consequently, they can lead the teachers to design the curriculum program(s) (Doll, 1996).

On the other side, implementation and operation of school-based curriculum development lies in application of proper curriculum practice to reduce misunderstanding of and resistance against reform. In this stage, the educational personnel's on-the-job study and the school organization's development are required to proceed professional retrospection and communication, dissolve different opinions, enrich necessary knowledge and skills needed to carry out curriculum, so that the program can be put into practice smoothly. Since the school is a system with complicated inter-influence, change of one link will cause the ripple effect in others. As reform is a phenomenon that is complex, continuous, and without an end, the environment is changing ceaselessly as well (Huang Kuang-hsung, Tsai Ching-tien, 1999; Fullan, 1992; Glatthorn, 2000).

Then, assessment feedback of the school-based curriculum development signify collecting proper and sufficient evidences to judge and improve the curriculum's process and effect. It connects with construction of the non-stop cycling assessment system that links with educational action research , so that the function of assessment and feedback can be developed fully. In such process, action research that cycles endlessly should be connected so as to find out the difficulty of implementation and the corresponding measures of curriculum development in order to bring the function of assessment and feedback into a full play (Chen Bo-chang, 1999; Tsai Ching-tien, 2000).

Finally, school-based curriculum development should pay attention to each supportive measure. Through re-allocation of authority and responsibility of the central government, the local government, and the school, with the students' need as the core, the schools educational personnel as the main body, and the school's situation and resources as foundation, the off-campus community's characteristics and the expectation of the public should be taken into consideration to meet the laws and regulations of the central and local educational authority organs (Ministry of Education, 2001). Additionally, in practicing curriculum planning, design, implementation, and assessment, each resource, human labor, expense, equipment, and the like should also be coordinated in order to fit the curriculum program and curriculum reform desired by students, school, and society (Huang Cheng-jieh, 1999; Chang Chia-yu, 1999; Tsai Ching-tien, 2001).

In short, in regard of the studies related to the principal's curriculum leadership, abundant outcomes have been accumulated; only, the principal's curriculum leadership has to rely on practice and implementation of the middle-level administrative personnel in the school for smooth promotion and expansion, showing the incredibly critical role of curriculum leadership. Accordingly, how the Dean of Office of Academic Affairs' leadership is will be the key factor that determines the outcomes of school-based curriculum development and the students' learning (Blandford, 2006; Harris, 1999; Harris, Jamieson, & Russ, 1997; Sammons, Thomas & Mortimore, 1997; Wallace & Loughran, 2003). In this sense, currently, although there are scholars discussing the content of the principal's curriculum leadership in Taiwan (Yu Chia-cheng, Hsu Teng-jih, 2003; Huang Chia-hsiung, 2001), understanding of Dean of Office of Academic Affairs' curriculum leadership is not enough, and a set of curriculum

leadership indicators is in short critically. As a result, on the basis of the relative research results mentioned above, this research can make contributions to constructing the curriculum leadership indicators for the Dean of Office of Academic Affairs.
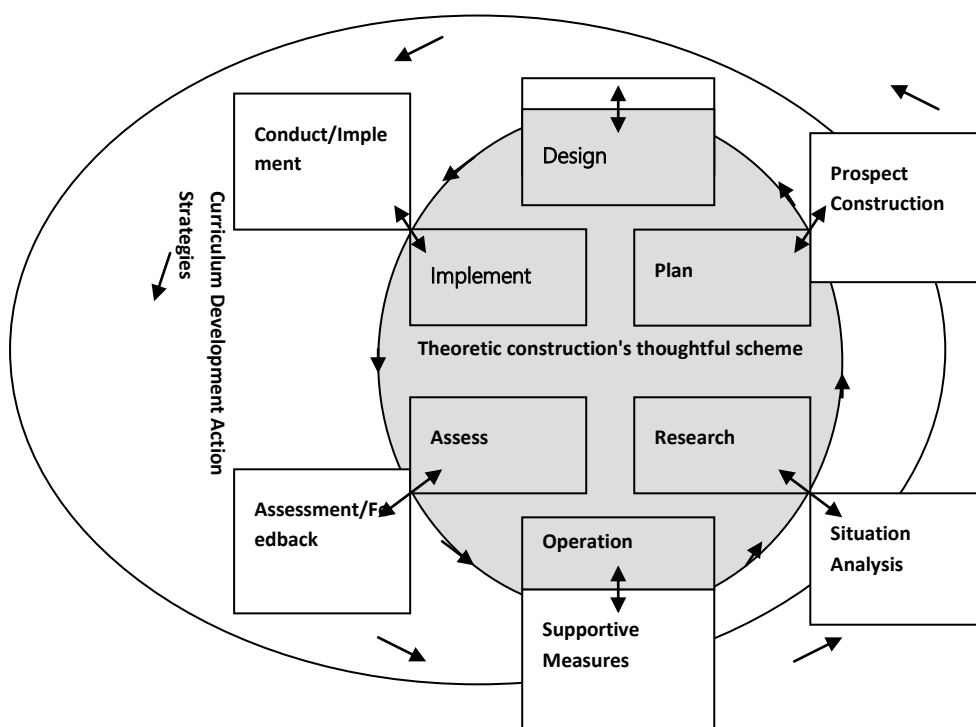

Fig 2-1-1 Interaction Model Integral Curriculum's Theoretic Construction & Action Strategies
Data Source: Quoted from Tsai Ching-tien (2002: 25)

RESEARCH METHODS AND DESIGN

1. Literature Discussion & Analysis

We conducted preliminary discussion of literature in respect with the foreign and internal theoretical content and argument foundation of Dean of Office of Academic Affairs' curriculum leadership, and the important aspects of Dean of Office of Academic Affairs' role of curriculum leadership, and proceeded recounting and analysis for preliminary construction of Dean of Office of Academic Affairs' curriculum leadership's indicator system.

2. The preliminary construction indicators

Targeting at the above-mentioned internal and international literature related to Dean of Office of Academic Affairs' curriculum leadership, we constructed preliminary curriculum leadership's indicator system, and formed "Survey of Questionnaire of Elementary School's Dean of Office of Academic Affairs' curriculum leadership".

3. Selection and appointment of samples of scholars and experts

In this research, we selected educational experts/scholars, educational administration personnel, and educational practitioners to appoint as the members of Delphi professional group, with members including two experts in curriculum experts (professors in Elementary Education Department, National Ping Tung University and Department of Early Childhood Development and Education, Chaoyang University of

Technology), two educational administrative leadership experts (professors in Department of Education, National Chengchi University and Department of Educational Policy and Administration, National Chi Nan University), 8 principals in elementary schools, 38 people used to serve as the Dean of Office of Academic Affairs, as shown in Table 1 below:

4. Preparation of Delphi Questionnaire of Experts

By means of Delphi Professional Group members as the subject, we prepared the survey of questionnaire on the basis of the preliminarily constructed Elementary School's Dean of Office of Academic Affairs' curriculum leadership, till reaching the common consensus.

5. Completion of Indicator Construction

When the Delphi Professional Group members reach the common consensus, construction of this indicator completes. The "propriety" of the curriculum leadership indicator of the Dean of Office of Academic Affairs refers to the said indicator serving as determining the "applicable degree" of the Elementary School's Dean of Office of Academic Affairs. The higher the applicable degree, the more the indicator can reflect the Dean's applicability to curriculum leadership, which is also an indicator to evaluate the school's selection and appointment of curriculum leader in priority. In order to discern the applicability degree of each curriculum's indicator, the researcher prepared independently "the judgment standard of propriety of the Elementary School's Dean of Office of Academic Affairs' curriculum leadership", which content is explained here: when the mean of the rating value is less than 4.5, or the standard of deviation is more than 1, it means the curriculum leadership indicator's propriety is "lower"; when the mean of the rating value ranges between 4.5 and 5.0, and the standard of deviation is less than 1, the curriculum leadership indicator's propriety is "fair"; when the mean of the rating value ranges between 5.0 and 5.5, and the standard of deviation is less than 1, the curriculum leadership indicator's propriety is "higher"; when the mean of the rating value is more than 5.5, and the standard of deviation is less than 1, the curriculum leadership indicator's propriety is "extremely high". In addition, in estimating the "quantitative score" of the mean and deviation, which is converted then to "qualitative narration", we used 4 levels-- "Abandon", "Consider to appoint", "Appoint in priority", and "Appoint in the first priority" to provide messages relative to quantity and quality as the foundation of selecting the curriculum leadership indicator.

In this research, the Delphi applied the scholars and experts as the survey subject; therefore, we took the curriculum leadership characteristics of the Elementary School's Dean of Office of Academic Affairs into considerations. In the first place, the population and the sample selection criteria were defined. Then, sampling and verification process was proceeded. Finally, those who agreed to take part in the research samples set up the "Delphi Group".

1. **Range of the Population:** The population in this research included the elementary school educational personnel, curriculum leadership and educational administration leadership scholars; in regard of the elementary school educational personnel, it mainly included the principal and deans.

2. **Sampling Criteria:** In this research, sampling followed the following three criteria to proceed: (1) Curriculum leadership must have two crucial theoretic foundations of curriculum and leadership, so the samples with both theory and practice were considered in priority. (2) The participants must carefully consider each item and the integral model

of "the Elementary School's Dean of Office of Academic Affairs' curriculum leadership", and have communication and research ability. (3) The Delphi Method has to conduct a series of questionnaire surveys, so the participants must have passion to take part.

3. Sample Characteristics: In this research, through the above-mentioned sampling criteria, we finally set up the Delphi Group with 50 members, which was composed by the elementary school educational personnel and the educational scholars and experts. Among the members, the Elementary School's Dean of Office of Academic Affairs refers to he/she who serves as Dean of Office of Academic Affairs now, or who used to serve as Dean of Office of Academic Affairs and as other important position now (like the principal or transfer to work as the general teacher), and there are totally 38 people, as shown in Table 1 and 2.

Table 1 The Dephi samples

	Elementary school educational personnel		Scholars and experts	
Professional background	Principal	Deans	Curriculum Leadership	Educational leadership
Number of people	24	22	2	2

Table 2 Alias and position of the Delphi Samples

No.	Alias	Position	Note
A01	Kuo○○	National university curriculum leadership professor	
A02	Tsai○○	National university educational leadership professor	
A03	Hsu○○	Private university curriculum leadership professor	
A04	Wei○○	Private university educational leadership professor	
B01	Lu○○	Tan-chien Elementary school principal in Chang-Hua County	
B02	Li○○	Jen Kuang Elementary school principal in Yen-suei Town, Tainan County	
B03	Fan○○	Chung Hsin Elementary school principal, Hsin Yi Town, Nan-tou County	
B04	Liang○○	Hua Lung Elementary school's Dean of Teaching Instructions in Hsiu-sui Town, Chang-hua County	
B05	Chen○○	Hsiu Lin Elementary school principal in Ming-hsiung Twon, Chia-yi County	
B06	Shih○○	Chung Hsan Elementary school principal in Chang Hua County	
B07	Hou○○	Kang Chien Elementary school, Tung-shih Town, Chia-yi County	
B08	Tsai○○	Hsin Sheng Elementary school principal in Yun-lin County	
B09	Tsai○○	Hui Lai Elementary school principal in Yun-lin County	
B10	Chen○○	Hsing Chia Elementary school principal in Chia-yi City	
B11	Huang○○	Wen Ya Elementary school principal in Chia-yi City	
B12	Chen○○	Yu Min Elementary school principal in Hsiu-sui	

		Town, Chang-hua County
B13	Chu○○	Ta Tung Elementary school principal in Chia-yi City
B14	Fang○○	Chu Tsun Elementary school principal in Pu-tai Village, Chia-yi County
B15	Wu○○	Tun Hua Elementary school's Dean of Teaching Instructions in Taipei City
B16	Liao○○	Yu Che Elementary school principal in Yun-lin County
B17	Ting○○	Lun Feng Elementary school principal in Yun-lin County
B18	Huang○○	He An Elementary school principal in Yun-lin County
B19	Tien○○	Wen Hsien Elementary school principal in Yun-lin County
B20	Yun○○	Kuan Yin Elementary school principal in Kaohsiung County
B21	Cheng○○	Ji Bai Ying Elementary school principal in Tainan County
B22	Chang○○	Li Yu Elementary school principal in Nan-tou County
B23	Hsieh○○	Ch'ang Ping Elementary school in Taipei County
B24	Lin○○	Jen He Elementary school principal in Tainan County
C01	Chen○○	Shan Tsen Elementary school's Dean of Academic Affairs in Chia-yi County
C02	Tsai○○	Chung Wen Elementary school's Dean of Teaching Instructions in Yun-lin County
C03	Chiang○○	Min Jing Elementary school's Dean of Teaching Instructions Chang-hua County
C04	Hou○○	Tung Shan Elementary school's Dean of Academic Affairs in Tainan County
C05	Hsu○○	Liu Ying Elementary school's Dean of Academic Affairs in Tainan County
C06	Li○○	Yu Che Elementary school's Dean of Academic Affairs in Yun-lin County
C07	Chang○○	Yuan Lin Elementary school's Dean of Academic Affairs in Chang-hua County
C08	Kuo○○	Hsin Chang Elementary school's Dean of Teaching Instructions
C09	Liu○○	Ch'ao Hsing Elementary school's Dean of Teaching Instructions in Chang-hua County
C10	Chou○○	Wen Ch'ang Elementary school's Dean of Teaching Instructions in Chang-hua County
C11	Li○○	Sui Lin Elementary school's Dean of Academic Affairs in Yun-lin County
C12	Juo○○	Chung Lin Elementary School Teacher and Dean of Academic Affairs in Chia-yi County
C13	Chen○○	He Mu Elementary school's Dean of Academic Affairs in Chia-yi County

C14	Chang○○	Wu Tsu Elementary school's Dean of Teaching Instructions in Yun-lin County
C15	Liu○○	Ping Lin Elementary school's Dean of Academic Affairs in Chia-yi County
C16	Lai○○	Ching Shan Elementary school's Dean of Academic Affairs in Chang-hua County
C17	Huang○○	Chao Mei Elementary school's Dean of Teaching Instructions in Yun-lin County
C18	Li○○	Yung An Elementary school's Dean of Academic Affairs in Taichung County
C19	Wu○○	Shang Te Elementary School Teacher and Dean of Academic Affairs in Yun-lin County
C20	Wu○	Che Chiang Elementary school's Dean of Academic Affairs in Chung-he, Taipei County
C21	Lien○○	Chien An Elementary school's Dean of Academic Affairs in Taipei County
C22	Wen○○	Yi Hsieh Elementary school's Dean of Academic Affairs in Taipei County

The first and second round of the Delphi Questionnaire Survey analysis were to compute the Mode (Mo), Mean (M), and Standard Deviation (SD) of all Delphi members' propriety score (six kinds of score--1, 2, 3, 4, 5, and 6)against each indicator and item to be used as the base of whether it is needed to modify the indicator. When "M≧5.5", the indicator remained the same; when "4.5≦M＜5.5", the indicator was modified according to the Delphi members' opinion; when "M＜4.5" and "SD≧1", the indicator was deleted, and continued preparation of the second round of Delphi Questionnaire Survey. Besides, for the indicator that the Delphi members considered to be necessary for modification, opinions and comments could be written in the space under the "Open Opinion" of each layer.

Data analysis for Delphi Questionnaire Survey higher than the third round was to to compute the Mode (Mo), Mean (M), and Standard Deviation (SD) of all Delphi members' propriety score (six kinds of score--1, 2, 3, 4, 5, and 6)against each indicator and item to be used as the base of whether it is needed to modify the indicator. When "M≧5.5", the indicator remained the same; when "4.5≦M＜5.5", the indicator was modified according to the Delphi members' opinion; when "M ＜ 4.5" and "SD≧1", the indicator was deleted, and completed the preparation of the Questionnaire Survey.
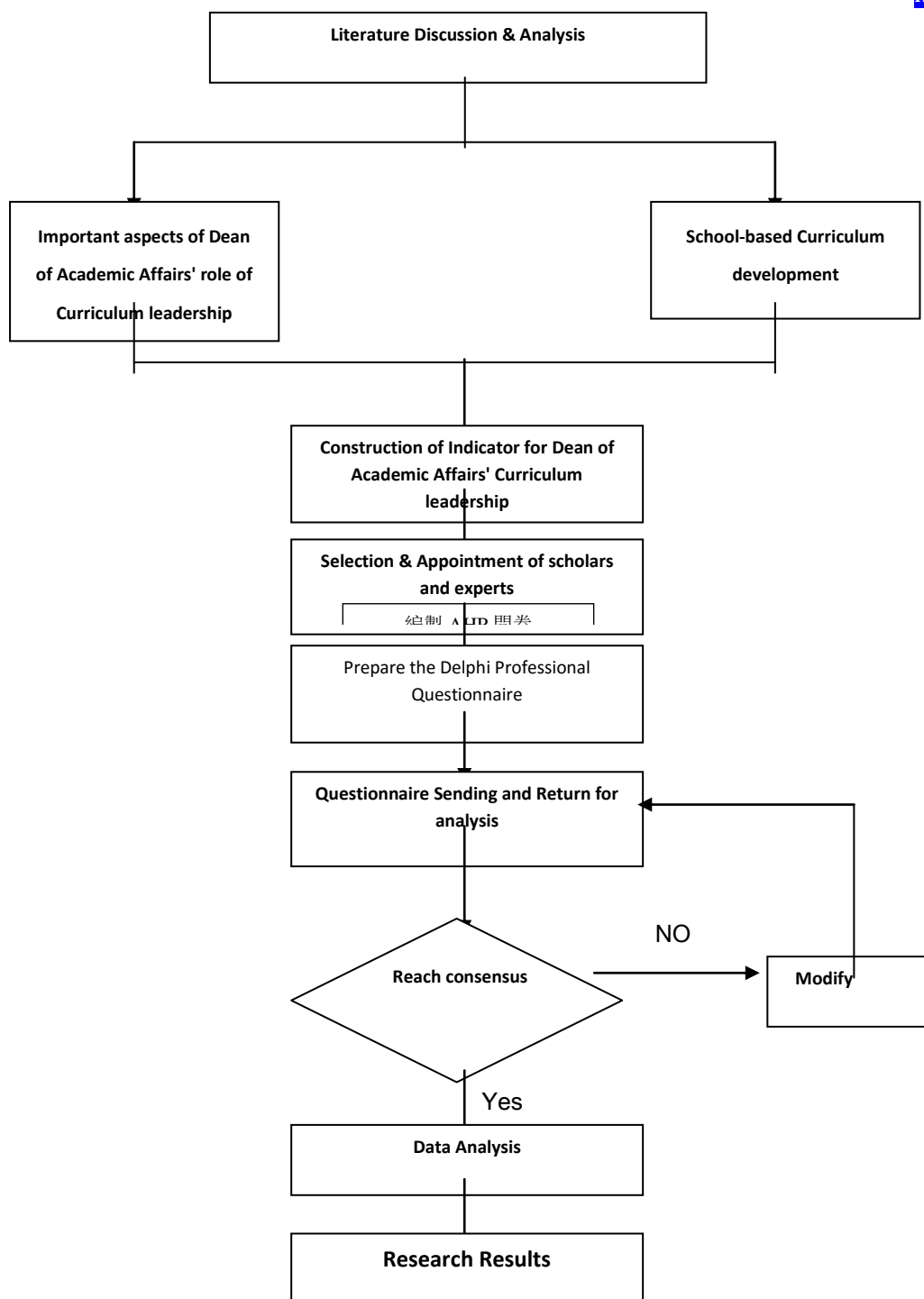
Fig. 2 Research Flowchart
Data source: Made by the researcher

Data analysis & discussion

Through literature analysis and the initial draft, three rounds of Delphi Questionnaire Surveys, and the authors' internal meetings, the original framework was modified, supplemented, and adjusted considerably. Since the process of constructing the indicators of curriculum leadership of the Elementary School's Dean of Office of Academic Affairs is the main point in this research, from Leading curriculum research action (Situational analysis), Leading curriculum planning action (Prospect construction), leadership curriculum implementation

action (operation/implementation), Leading curriculum assessment action (assessment/ feedback), Leading curriculum management action (supportive measures), and other open opinions, we analyzed and constructed the leadership curriculum's dimensions, items, and indicators. Next, the ability indicators were made into questionnaires and conducted for the experts/scholars, educational personnel, and parents in order to analyze the importance degree as well as propriety of the core abilities and the indicators.

The first round of the revising process of Delphi elementary school's Dean of Academic Affairs' curriculum leadership indicators.

To begin with, after consulting literature discussion, the researchers drew initial 6 curriculum leadership aspects, 16 curriculum leadership items, and 49 curriculum leadership indicators, as shown in Table 3 below. Among them, 6 curriculum leadership aspects are: Leading curriculum research action (Situational analysis), Leading curriculum planning action (Prospect construction), leadership curriculum implementation action (operation/implementation), Leading curriculum assessment action (assessment/feedback), Leading curriculum management action (supportive measures).

Table 3 The first round of questionnaire survey for constructing Delphi elementary school's Dean of Academic Affairs' curriculum leadership indicators

A-1 Leading curriculum research action (Situational analysis)
A-1-1 Lead to proceed setting up curriculum related organizations
A-1-1-1Supported by the principal, inquired the involved party's agreement or properly coordinated with the involved party, and confirmed the school affair promotion personnel in thatgrade, while completed the school's overall curriculum arrangement.
A-1-1-2 Established school's curriculum development committee
A-1-2 Lead to proceed analyzing school curriculum development situation
A-1-2-1After analyzing the past curriculum development situation and evaluating the current school curriculum development's demand, properly arranged the teachers' curriculum affairs according to "teacher's strengths", "Overall operation of school affairs", "school's human labor arrangement", and "survey of teacher's willingness of teaching".
A-1-2-2 Analyzed the factors that influence school's curriculum development, and made good use of the school's resources to develop school's curriculum characteristics and directions
A-2 Leading curriculum planning action (Prospect construction)
A-2-1 Lead to proceed planning school's prospect and goals
A-2-1-1 The principal hosted curriculum development committee, while the dean discussed on planning school curriculum's developing prospect with teachers, community parents, experts and scholars together.
A-2-1-2 Planned the school's overall curriculum' s goals and draft
A-2-2 Lead to proceed planning school's overall curriculum plan
A-2-2-1 Planned to achieve the school's overall goal of the curriculum plan framework, and establish the characteristics of school's curriculum development
A-2-2-2 Ascertained feasibility of the school's overall curriculum, drew up the textbooks' selection criteria, and selected proper textbooks.
A-2-2-3 Drew up teaching affairs' work plan and schedule, and teaching routine, and held various cultural and artistic contests.

A-3 Leading curriculum design action (program design)
A-3-1 Lead to proceed setting up curriculum research group in each learning territory every grade, and confirming the goals
A-3-1-1 Guided to set up teaching seminars in each learning territory every grade (including curriculum design group)
A-3-1-2 Ascertained teaching program's goals in each learning territory every grade
A-3-2 Lead to proceed design curriculum programs in each learning territory every grade
A-3-2-1 Guided members in each learning territory every grade to design curriculum programs and teaching schedule and progress under the premise of respecting the teacher's opinions
A-3-2-2 Guided members in each learning territory every grade to design curriculum programs' teaching materials under the premise of respecting the teacher's opinions
A-3-2-3 Guided members in each learning territory every grade to design curriculum programs' teaching activities under the premise of respecting the teacher's opinions
A-3-2-4 Guided members in each learning territory every grade to design curriculum programs' assessment tools under the premise of respecting the teacher's opinions
A-3-2-5 Guided to design and coordinate teaching related supportive resources in each learning territory every grade
A-3-3 Lead to proceed the curriculum program's trial, modification, and approval
A-3-3-1 Through publishing curriculum plan, discussion, and communication, fostered programs' trial and modification ineach learning territory in every grade
A-3-3-2 Compiled the school's overall curriculum content, which meets the rules in each city/county, and carry out report.
A-4 Leading curriculum implementation action (operation and practice)
A-4-1 Lead to proceed preparations before implementation
A-4-1-1Led to complete class preparation; and, based on respecting the teacher's strengths and willingness, processed course related educational personnel's training to cultivate the teachers' knowledge and skills for the new curriculum
A-4-1-2 Completed the administrative support preparatory work before implementing curriculum
A-4-1-3 Proceeded propaganda towards students, parents, and community personnel
A-4-2 Lead to proceed connection of curriculum and teaching
A-4-2-1 Took advantage of time properly to proceed teachers' professional dialogue, teaching observation, and encouraged teachers to coordinate teaching and develop professional learning communities in order to guide teaching to link with curriculum
A-5 Leading curriculum assessment action (assessment/feedback)
A-5-1 Lead to proceed assessing learning effect
A-5-1-1 Assessed students' learning effect, such as regular assessment of assignment
A-5-1-2 Planned to process teaching outcome exhibition to assess the teachers' teaching outcomes and organize teaching files
A-5-1-3 Through administrative support's effect, proceeded teaching administration's sef-assessment
A-5-2 Lead to proceed assessment of curriculum programs
A-5-2-1 Through students' learning effect, students' organizing learning files, parent-teacher-student interviews, feedback sheet, and etc., assessed benefit of the curriculum program in each learning territory for every grade
A-5-2-2 Coordinated deans and teachers in each grade (territory) to assess school's

overall curriculum effect
A-6 Leading curriculum management action (supportive measures)
A-6-1 Lead to proceed curriculum research (situation analysis) operation
A-6-1-1 Assisted and stressed that concept and tasks of the principal's curriculum leadership, and summoned curriculum development committee
A-6-1-2 Guided curriculum development committee to become the curriculum forum-- which should sufficiently include viewpoints of school's administrative personnel, teachers, students, and parents, value the process's specialization and democratization. As for students' participation, their cognition ability should be taken into considerations.
A-6-2 Lead to proceed curriculum planning (prospect construction) operation
A-6-2-1 Constructed the school's common prospect through curriculum development committee
A-6-2-2 Through common prospect, set up definite goals, and drew up plan's schedule. The school's overall curriculum planning in this stage should pay attention to the feasibility of the overall goal and the plan, formulate the goals definitely, and draw up the plan thoughtfully. In addition, the overall goals and plan should be discussed and passed by the curriculum development committee.
A-6-2-3 Summoned curriculum development committee and confirmed the school's curriculum plan
A-6-2-4 Formulated the school curriculum's overall framework, and described the characteristics of the school's curriculum development
A-6-2-5 Through grade's dean meetings, or each learning territory's recruiter meetings, or through the dean of academic affairs to summon meetings, fostered teaching communication
A-6-2-6 Exerted school's manpower and resources properly in order to plan digital teaching resources' set-up and website management.
A-6-2-7 Planned books/equipment, teaching tool resources, discipline classroom usage, students' roll data, practice book selective exams, regular assessment review and management
A-6-3 Lead to proceed curriculum design's running
A-6-3-1 Through curriculum leadership, guided the teachers to proceed curriculum selection organization's adjustment and innovation. Encouraged the teachers to make good use of the resources and coordinate the school district's characteristics for program design.
A-6-3-2 Valued cooperation and collaboration among the curriculum program design group. Balance the school's overall curriculum program design of the formal and informal curriculum
A-6-3-3 Through each curriculum program design group's integration, valued curriculum program territory's goals and the content's integration. With proper trial procedures, enhanced new curriculum's practical value
A-6-3-4 Through learning from the model, sharing the experience, and discussion, guided the teachers to conduct advanced learning of curriculum design
A-6-3-5 The teaching blueprint has specific process and can solve the problems, generate plans, programs, teaching materials, or outcomes.
A-6-4 Lead to proceed operation of curriculum implementation (operation/practice)
A-6-4-1 With further study and training, raised the school's educational personnel's curriculum implementation knowledge and skills. Understood the curriculum's

concepts and content, changed the mental attitude, and happy to accept the new curriculum
A-6-4-2 With communication and propaganda, created the organization's air of positive curriculum implementation
A-6-4-3 In coordination with the school's organization development, put curriculum into practice
A-6-4-4 Understood curriculum implementation condition, made a survey of the teaching situation, and proceeded teaching consultancy
A-6-4-5 Practiced rescue teaching, processed after class care center and mentoring class, and arranged diversified learning courses.
A-6-4-6 Drew up the process of teacher-parent cooperation, and developed teacher-autonomy learning organization
A-6-5 Lead to proceed the curriculum assessment's operation
A-6-5-1 Exerted the school's manpower properly, set up assessment group to proceed the overall curriculum assessment, and formulated assessment in other stages for provision of feedbacks anytime

Next, after the first round of the Delphi professional validity questionnaire survey, we proceeded judgment according to the judging standard of curriculum leadership indicators' propriety, as shown in the following Table 4 and 5 (✓ is to select and use, △ is to modify, and × is to delete or modify).

Table 4   The judging standard of curriculum leadership indicators' propriety

judging standard	Content	Indicator's selection property
M＜4.5orSD≧1	The percentile rank is under 70, difference in the judging results	Abandon
4.5≦M＜5.0 and SD＜1	The percentile rank is between 70 and 80; the judging results reach consensus	Consider to use
5.0≦M＜5.5 and SD＜1	The percentile rank is between 80 and 90; the judging results reach consensus	Use in priority
M≧5.5 and SD＜1	The percentile rank is above 90, the judging results reach consensus	Use in first priority

Table 5   The first Delphi method's judging standard

Item	Max. Value	Min.Value	M	SD	Use or not
A111	2	6	4.95	1.20	×
A112	4	6	5.70	.59	✓
A121	3	6	5.18	.92	✓
A122	3	6	5.48	.70	✓
A211	3	6	5.34	.89	✓
A212	3	6	5.23	.89	✓
A221	3	6	5.39	.72	✓
A222	2	6	5.16	.89	✓
A223	2	6	5.36	.89	✓
A311	1	6	5.23	1.10	×

A312	2	6	5.18	.97	✓
A321	2	6	5.14	1.03	✕
A322	2	6	5.02	1.03	✕
A323	2	6	5.05	.99	✓
A324	2	6	4.95	.99	△
A325	2	6	4.84	1.06	✕
A331	2	6	5.02	1.08	✕
A332	2	6	5.40	.95	✓
A411	2	6	5.27	1.00	✕
A412	3	6	5.61	.65	✓
A413	2	6	5.27	.97	✓
A421	2	6	5.20	.85	✓
A511	4	6	5.55	.59	✓
A512	2	6	5.16	.91	✓
A513	2	6	4.95	1.03	✕
A521	2	6	4.91	1.03	✕
A522	2	6	4.93	1.09	✕
A611	3	6	5.30	.76	✓
A612	2	6	5.05	1.03	✕
A621	2	6	5.30	.88	✓
A622	2	6	5.36	.89	✓
A623	3	6	5.48	.73	✓
A624	3	6	5.33	.78	✓
A625	2	6	5.23	.91	✓
A626	2	6	5.14	1.09	✕
A627	3	6	5.30	.85	✓
A631	3	6	5.32	.80	✓
A632	3	6	5.18	.84	✓
A633	3	6	5.12	.88	✓
A634	2	6	5.09	1.01	✕
A635	2	6	5.02	.98	✓
A641	4	6	5.50	.55	✓
A642	3	6	5.43	.70	✓
A643	4	6	5.43	.66	✓
A644	3	6	5.32	.80	✓
A645	3	6	5.39	.72	✓
A646	2	6	5.30	.95	✓
A651	1	6	4.98	1.18	✕
A652	1	6	5.00	1.25	✕

Finally, targeting at the indicator's name, we proceeded modification and change of the items, as shown in Table 6.

Table 6 The first round of modifying the Delphi method's items

A-1-1-1 Supported by the principal, inquired the involved party's agreement or properly coordinated with the involved party, and confirmed the list of each group leader candidate, dean in each grade, recruiter in each learning territory, each class's instructor and subject teachers (including processing teacher selection and stabilizing

the faucaty), and through free selection and local coordination, completed the school's overall curriculum affairs' arrangement
A-3-1-1 Guided to set up teaching seminars in each learning territory in every grade (including curriculum design group)
A-3-2-1 Guided members in each learning territory in every grade to design curriculum programs and teaching schedule and progress under the premise of respecting the teacher's opinions
A-3-2-2 Guided members in each learning territory in every grade to design curriculum programs' teaching materials under the premise of respecting the teacher's opinions
A-3-2-3 Guided members in each learning territory every grade to design curriculum programs' teaching activities under the premise of respecting the teacher's opinions
A-3-2-4 Guided members in each learning territory every grade to design curriculum programs' assessment tools under the premise of respecting the teacher's opinions
A-3-2-5 Guided to design and coordinate teaching related supportive resources in each learning territory every grade
A-3-3-1 Through publishing curriculum plan, discussion, and communication, fostered programs' trial and modification ineach learning territory in every grade
A-4-1-1 Led to complete class preparation; and, based on respecting the teacher's strengths and willingness, processed course related educational personnel's training to cultivate the teachers' knowledge and skills for the new curriculum
A-5-1-3 Through administrative support's effect, proceeded teaching administration's self-assessment
A-5-2-1 Through students' learning effect, students' organizing learning files, parent-teacher-student interviews, feedback sheet, and etc., assessed benefit of the curriculum program in each learning territory for every grade
A-5-2-2 Coordinated deans and teachers in each grade (territory) to assess school's overall curriculum effect
A-6-1-2 Through common prospect, set up definite goals, and drew up plan's schedule. The school's overall curriculum planning in this stage should pay attention to the feasibility of the overall goal and the plan, formulate the goals definitely, and draw up the plan thoughtfully. In addition, the overall goals and plan should be discussed and passed by the curriculum development committee.
A-6-2-6 Exerted school's manpower and resources properly in order to plan digital teaching resources' set-up and website management.
A-6-3-4 Through learning from the model, sharing the experience, and discussion, guided the teachers to conduct advanced learning of curriculum design
A-6-5-1 Exerted the school's manpower properly, set up assessment group to proceed the overall curriculum assessment, and formulated assessment in other stages for provision of feedbacks anytime
A-6-5-2 Coordinated with the teachers to conduct educational action research, implement curriculum reform's ideal, and put into practice the concept that the practitioner is also the researcher

The second round of the revising process of Delphi curriculum leadership indicators

After the first round of the Delphi method's professional questionnaire survey, the 1. The first round of the revising process of Delphi elementary school's Dean of Academic Affairs' curriculum leadership indicators.

After consulting literature discussion, the researchers modified the questionnaire into that with 6 curriculum leadership aspects, 16 curriculum leadership items, and 49 curriculum leadership indicators. Among them, 6 curriculum leadership aspects remained the same: Leading curriculum research action (Situational analysis), Leading curriculum planning action (Prospect construction), leadership curriculum implementation action (operation/implementation), Leading curriculum assessment action (assessment/feedback), Leading curriculum management action (supportive measures).

Then, we sent out the first Delphi professional validity questionnaire after modification to serve as the second revision foundation and proceeded judgment according to the judging standard of curriculum leadership indicators' propriety, as shown in Table 6 above (✓is to select and use, ∆ is to modify, and × is to delete or modify). The judging standard is listed in Table 7 below.

Table 7 The second Delphi method's judging standard

Item	Max. Value	Min. Value	M	SD	Whether to use
A111	6	2	5.39	.99	✓
A112	6	5	5.78	.42	✓
A121	6	4	5.61	.58	✓
A122	6	4	5.65	.57	✓
A211	6	4	5.57	.59	✓
A212	6	4	5.57	.66	✓
A221	6	4	5.57	.66	✓
A222	6	4	5.43	.66	✓
A223	6	5	5.65	.49	✓
A311	6	3	5.61	.72	✓
A312	6	3	5.61	.72	✓
A321	6	3	5.61	.72	✓
A322	6	3	5.52	.73	✓
A323	6	3	5.52	.73	✓
A324	6	3	5.61	.72	✓
A325	6	3	5.61	.78	✓
A331	6	3	5.43	.79	✓
A332	6	3	5.65	.71	✓
A411	6	5	5.74	.45	✓
A412	6	5	5.87	.34	✓
A413	6	4	5.43	.79	✓
A421	6	3	5.48	.85	✓
A511	6	4	5.74	.54	✓
A512	6	4	5.52	.73	✓
A513	6	2	5.52	.99	✓
A521	6	3	5.70	.70	✓
A522	6	4	5.57	.66	✓
A611	6	4	5.65	.57	✓
A612	6	4	5.43	.66	✓
A621	6	4	5.70	.56	✓
A622	6	3	5.65	.78	✓
A623	6	4	5.61	.58	✓
A624	6	4	5.57	.59	✓

A625	6	4	5.61	.58	✓
A626	6	4	5.48	.67	✓
A627	6	3	5.52	.79	✓
A631	6	4	5.61	.58	✓
A632	6	4	5.48	.67	✓
A633	6	4	5.48	.67	✓
A634	6	4	5.48	.67	✓
A635	6	4	5.57	.59	✓
A641	6	4	5.74	.54	✓
A642	6	4	5.78	.52	✓
A643	6	4	5.70	.56	✓
A644	6	4	5.74	.54	✓
A645	6	4	5.61	.72	✓
A646	6	4	5.65	.57	✓
A651	6	2	5.52	.95	✓
A652	6	4	5.57	.66	✓

Finally, although no change nor modification were made according to the second Delphi method's judging standard, we examined the items and the content based on the original plan in order to edit and send out the third professional questionnaires.

The third round of the revising process of Delphi curriculum leadership indicators

After the second round of the Delphi method's professional questionnaire, the experts still maintained the 6 curriculum leadership aspects, 16 curriculum leadership items, and 49 curriculum leadership indicators. Among them, 6 curriculum leadership aspects remained the same: Leading curriculum research action (Situational analysis), Leading curriculum planning action (Prospect construction), leadership curriculum implementation action (operation/implementation), Leading curriculum assessment action (assessment/feedback), Leading curriculum management action (supportive measures).

Next, we sent out the second Delphi professional validity questionnaire after modification to serve as the third revision foundation and proceeded judgment according to the judging standard of curriculum leadership indicators' propriety, and the third Delphi method's judging standard is shown in Table 8 below.

Table 8 The third Delphi method's judging standard

Item	Max. Value	Min. Value	M	SD	Whether to use
A111	6	5	5.65	.49	✓
A112	6	5	5.85	.37	✓
A121	6	4	5.55	.60	✓
A122	6	4	5.60	.60	✓
A211	6	4	5.65	.59	✓
A212	6	4	5.65	.59	✓
A221	6	4	5.75	.55	✓
A222	6	4	5.60	.68	✓
A223	6	5	5.75	.44	✓
A311	6	4	5.60	.75	✓
A312	6	4	5.55	.76	✓

A321	6	4	5.60	.68	✔
A322	6	4	5.50	.69	✔
A323	6	4	5.60	.68	✔
A324	6	4	5.55	.60	✔
A325	6	4	5.60	.60	✔
A331	6	4	5.70	.57	✔
A332	6	4	5.80	.52	✔
A411	6	5	5.75	.44	✔
A412	6	5	5.75	.44	✔
A413	6	4	5.40	.68	✔
A421	6	4	5.65	.59	✔
A511	6	4	5.75	.55	✔
A512	6	4	5.65	.67	✔
A513	6	4	5.60	.68	✔
A521	6	4	5.65	.59	✔
A522	6	4	5.70	.57	✔
A611	6	3	5.70	.73	✔
A612	6	3	5.55	.76	✔
A621	6	4	5.70	.57	✔
A622	6	4	5.70	.57	✔
A623	6	4	5.75	.55	✔
A624	6	4	5.60	.60	✔
A625	6	4	5.60	.68	✔
A626	6	4	5.55	.69	✔
A627	6	4	5.55	.69	✔
A631	6	4	5.80	.52	✔
A632	6	4	5.70	.57	✔
A633	6	4	5.70	.57	✔
A634	6	4	5.65	.59	✔
A635	6	3	5.65	.75	✔
A641	6	2	5.45	1.10	×
A642	6	3	5.70	.73	✔
A643	6	4	5.60	.60	✔
A644	6	4	5.65	.59	✔
A645	6	4	5.50	.76	✔
A646	6	3	5.65	.75	✔
A651	6	4	5.60	.60	✔
A652	6	4	5.55	.60	✔

Finally, in accordance with the third Delphi method's judging standard, we modified and adjusted A6-4-1 to prepare as the formal questionnaire, as the following Table 9 shows.

Table 9 The modified item in the third Dephi method

A-6-4-1With off-campus study and training, on-campus professional learning community, coordination and cooperation, and expert's and scholar's instruction at school, raised knowledge and skills for implementing curriculum.

COMPREHENSIVE DISCUSSION AND ANALYSIS

After three rounds of the Delphi professional questionnaire, regarding the elementary school's dean of academic affairs' curriculum leadership indicators, the 6 aspects and 16 items had not been modified, we only changed some indicators' order of logic, expanded the territory, modified the implication, or made the definition and subject even more accurately in order to be more applicable to the implication of the indicators of the elementary school's dean of academic affairs. To better understand and demonstrate, the following Fig 3 is the interactive model diagram of the elementary school's dean of academic affairs' curriculum leadership indicator system and action strategies. On the basis of the above-mentioned literature discussion of dean of academic affairs' curriculum leadership's theoretic content and argument foundation, and through the Delphi method's results, it can be found that there are three main points in the interactive model diagram of the elementary school's Dean of Academic Affairs' Curriculum Leadership Indicator system and action strategies:

(1) Dean of Academic Affairs also bears the vital responsibility of the school's curriculum leadership, playing the role of curriculum leadership with diversity
The role and tasks of the Dean of Academic Affairs is multiple and complicated, the dean has to follow the principal's order to promote curriculum leadership, and communicate and contact with the teachers, parents, and the community personnel. In this sense, he/she is the key person in the school's curriculum leadership, yet differs from the principal, who is the top decision maker and leader of the school affairs (Lin Ming-sti, 1998). On the other hand, Dean of Academic Affairs takes charge of curriculum development, curriculum editing, teaching implementation, school roll management, performance assessment, teaching equipment, Internet equipment, educational book's data, teaching research, teaching assessment, and so on, so it is apparent that he/she plays a critical role in curriculum leadership (Chen Jing-yi, 2005; Huang Chi-lung, 2000; Yu Chia-cheng and Hsu Teng-chi, 2003; Chen Hsiao-lan and Jung Jing, 2002), particularly the Dean of Academic Affairs' role of curriculum leadership, including Leading curriculum research action (Situational analysis), Leading curriculum planning action (Prospect construction), leading curriculum implementation action (operation/implementation), Leading curriculum assessment action (assessment/feedback), Leading curriculum management action (supportive measures).

(2) With reference to the theoretical content and argument foundation, Dean of Academic Affairs' curriculum leadership indicators can be constructed accordingly
In the first place, "Dean of Academic Affairs' Curriculum Leadership Indicators" consist of Leading curriculum research action, Leading curriculum planning action, leading curriculum design action, leading curriculum implementation action, Leading curriculum assessment action, and Leading curriculum management action, which physically indicate in Dean of Academic Affairs' Curriculum Leadership, what situations he/she should evaluate and analyze, how to construct the prospects, which program design to be adopted, and how to proceed implementation and practice, assessment and feedback, and supportive measures, and how to make retrospections and improvement continuously. Therefore, it is helpful for Dean of Academic Affairs to carry out curriculum leadership by means of groping and accumulating experiences or even without participating curriculum leadership related affairs. Curriculum leadership indicators scheme the important aspects and items, as well as relative procedures or flowchart to be followed, so they have the function of guiding Dean of Academic Affairs to carry out curriculum leadership. Next, through the theoretical content and argument foundation of elementary school's Dean of Academic Affairs' curriculum leadership, the theoretical content and argument foundation of curriculum leadership can be

founded. Additionally, through consulting the internal and foreign physical measures related to curriculum leadership, Dean of Academic Affairs can carry out curriculum leadership in the way consistent with the tendency of development. Moreover, through interviews with relative personnel, the elementary school's Dean of Academic Affairs' Curriculum Leadership' indicators can be modified to correspond to the characteristics, while propriety of those indicators can be tested by Delphi method's survey.

(3) The elementary school's Dean of Academic Affairs' Curriculum Leadership' indicator system includes aspects , items, and indicators like situation analysis, prospect construction, curriculum design, implementation and practice, assessment and feedback, and supportive measures, which form the Dean of Academic Affairs' Curriculum Leadership' indicator system and action strategy interactive model that improves continuously and dynamically

Through literature analysis, interviews, and the Delphi surveys, this research constructed "the Dean of Academic Affairs' Curriculum Leadership' indicator system and action strategy interactive model" (Fig. 3), pointing out that when Dean of Academic Affairs carries out curriculum leadership, he/she has to stress on the 6 major aspects; that is, Leading curriculum research action, Leading curriculum planning action, Leading curriculum design action, Leading curriculum implementation action, Leading curriculum assessment action, and Leading curriculum management action, and concentrate on the six aspects' situational analysis, prospect construction, program design, operation/implementation, supportive measures, and assessment/feedback. In addition, he/she has to play an appropriate curriculum leadership role and take proper curriculum leadership action, exert assessment/feedback and supportive measures to work as the mechanism for curriculum development, and further raise the efficacy of curriculum leadership. The above-mentioned six major aspects, along with the items and indicators, consist of the the Dean of Academic Affairs' Curriculum Leadership' indicator system and action strategy interactive model that dynamically develops and is characterized with changeability, diversity, adaptation, continuity, and performance-based. In addition to develop into the physical Dean of Academic Affairs' Curriculum Leadership' indicators and items, this model can be promoted for implementation, and is helpful to guide Dean of Academic Affairs to carry out curriculum leadership. Through practical curriculum leadership, the model can be implemented and modified continuously. Certainly, in using the model, Dean of Academic Affairs can adjust the indicators and items flexibly on the basis of the actual situational context, and list the tasks and conducts related to curriculum leadership according to the degree of urgency and importance, depending on the actual need or situational context. In some cases, Dean of Academic Affairs can just pick up some items that are the most urgent for the school, or demanded for strengthening, so that the required curriculum leadership action strategies can be taken.
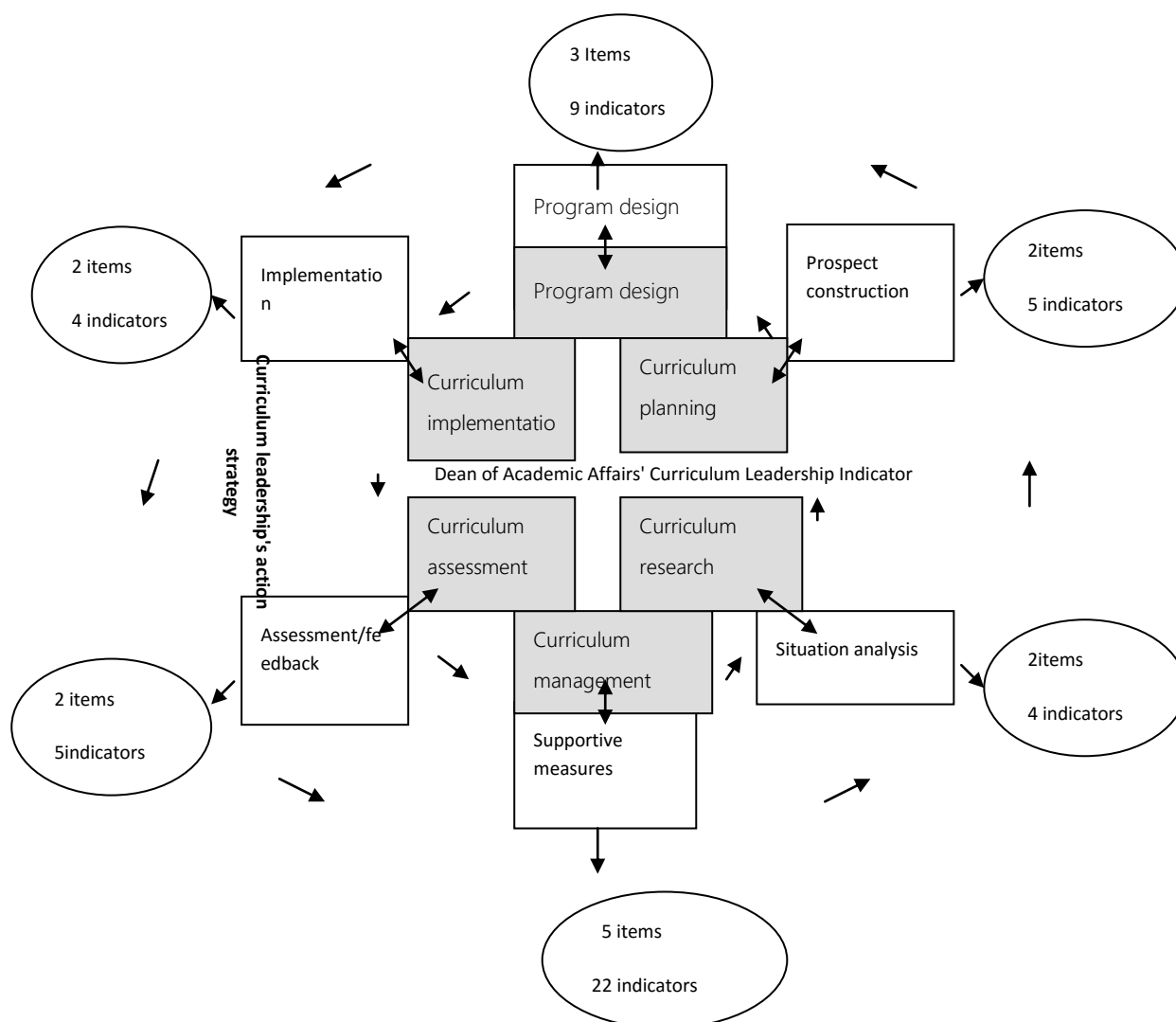
Fig. 3 The Dean of Academic Affairs' Curriculum Leadership' indicator system and action strategy interactive model

PRIMARY CONCLUSIONS AND RELATIVE SUGGESTIONS

According to literature analysis, the Delphi professional questionnaire results, and discussion and analysis, this research proposed the following conclusions.

1. The Dean of Academic Affairs' curriculum leadership mainly includes two major foundations, the curriculum theory and leadership operation theory, which have unique academic theoretic content and argument foundation

As far as the elementary school's Dean of Academic Affairs' curriculum leadership's academic theoretic content and argument foundation is concerned, the elementary school's Dean of Academic Affairs' curriculum leadership indeed has its theory, and the elementary school's Dean of Academic Affairs' curriculum leadership's academic theoretic content contains administrative leadership operation theory and curriculum theory. Only, curriculum theory is not sufficient enough to accomplish curriculum leadership work. In contrast, with only administrative leadership theory, the curriculum leadership actions such as situation

analysis, prospect planning, program design, curriculum implementation, assessment and feedback, and supportive measures of curriculum leadership cannot be achieved, because both must work together to demonstrate the exclusive academic shape of the elementary school's Dean of Academic Affairs' curriculum.

2. The foreign scholars generally value curriculum leadership, while in Taiwan, due to following the trends and currents, the role of curriculum leadership is gradually developed for the principal, Dean of Academic Affairs, or other curriculum leaders to consult

To view from the angle of the importance of the elementary school's Dean of Academic Affairs' curriculum leadership role, it can be found from the above literature that, as the foreign scholars indicated, the current condition of curriculum leadership in the main countries in the world is primarily classified into the main curriculum leaders, the role and tasks of the curriculum leader, and the model and development of curriculum leadership, and the like. In recent years, the curriculum leadership related studies mainly focus on principal's curriculum leadership. However, curriculum leadership is not restricted to the principal's curriculum leadership, since the principal may share the responsibility of curriculum leadership through the second promoter, so the principal, the administrative personnel, or the teacher are all likely to take the role of curriculum leadership. Among them, Dean of Academic Affairs carries the vital role of the school's development of teaching affairs, so the importance is unelectable.

3. The elementary school's Dean of Academic Affairs is the main leader for curriculum, and plays diversified role of curriculum leadership, able to bear the diversified curriculum leadership responsibility

To judge from the crucial aspects of the elementary school's Dean of Academic Affairs' curriculum leadership role, the job responsibilities of Dean of Academic Affairs include: editing and arrangement of each subject's courses, teaching implementation, school roll management, score assessment, teaching equipment, information and Internet equipment, teaching tool picture book data supply and teaching research, coordination with consultancy unit to implement educational consultancy, and so on. From those job responsibilities, it can be found that those duties relate to curriculum teaching the most, so as the leader of Office of Academic Affairs, the Dean seemingly has to take the responsibility of curriculum leadership in reform of curriculum, as well as valuing situation analysis, prospect planning, program design, curriculum implementation, assessment and feedback, and supportive measures in the 6 major role aspects, including Leading curriculum research action, Leading curriculum planning action, leadership curriculum design action, leadership curriculum implementation action, Leading curriculum assessment action, and Leading curriculum management action.

4. The elementary school's Dean of Academic Affairs' curriculum leadership include 6 aspects, 16 items, 49 indicators, which form an action strategy model that develops and improves dynamically and continuously

To view from the angle of the elementary school's Dean of Academic Affairs' curriculum leadership's indicator system and action strategy, through literature analysis, the Delphi method's survey results, this research has constructed the elementary school's Dean of Academic Affairs' curriculum leadership's indicators. It is found that when integrating the previously mentioned curriculum theory and the administration theory, under the orientation

and guidance of different curriculum leadership theories, six aspects of the elementary school's Dean of Academic Affairs' curriculum leadership were generated, such as situation analysis, prospect planning, program design, curriculum implementation, assessment and feedback, and supportive measures. In addition, 16 items and 49 indicators were developed by order. Particularly, through the Dean of Academic Affairs' Curriculum Leadership' indicator system and action strategy interactive model, on one side, the school-based curriculum development program reform proceeded by the school operated team is valued. Especially, the curriculum operation teams like curriculum development committee and the curriculum program design group led by the elementary school's Dean of Academic Affairs, the school has carried out the thoughtful schemes and action strategies involving curriculum research (situation analysis), curriculum planning (prospect construction), curriculum design (program design), curriculum implementation (conduction/practice), curriculum assessment (assessment/feedback), curriculum management (supportive measures). With all units working hard together to operate the dynamic process of school curriculum reform, not only the Grade 1-9 Curriculum Guidelines can be practiced, but also the philosophy of the Comprehensive Consultant Report of the Educational Reform Advisory Committee can be put into practice. By implementing the curriculum development at each level, the common operation concept of the curriculum is also practiced and the school-based curriculum development can also be managed sustainably.

According to the above-mentioned conclusions, this research proposed the relative suggestions as follows:

1. As playing the role of curriculum leader, the elementary school's Dean of Academic Affairs has better models himself/herself in developing curriculum

According to the research conclusions, the elementary school's Dean of Academic Affairs' curriculum leadership theories mainly include twp foundations-- the curriculum theories, and the leadership operation theories with unique academic shape. Therefore, the elementary school's Dean of Academic Affairs as a curriculum leaser, regardless of his/her job position, the Dean should be an enthusiastic worker, a model who sets an example first, a positive and proactive learner, a critic who finds out the problem, and a thinker with dimensional consideration, since enthusiasm is the dynamics that can maintain curriculum leadership work, modeling can serve as the example for the teachers to learn, positive and proactive learning new knowledge can keep the curriculum developing on the correct track without deviation of the curriculum development; the critic who discovers the problem will not become a man who follows the trend blindly, bur can extract the experiences from problem-finding, and find a road for the school-based curriculum that can meet the need of the school.

2. The elementary school's Dean of Academic Affairs plays the critical curriculum leadership role to coordinate the relationship between the principal and the teachers, and does his/her best to develop curriculum

In accordance with the research conclusion 2, the foreign scholars generally value curriculum leadership, while in Taiwan, due to following the trends and currents, the role of curriculum leadership is gradually developed for the principal, Dean of Academic Affairs, or other curriculum leaders to consult. In research conclusion 3, the elementary school's Dean of Academic Affairs is the main leader for curriculum, and plays diversified role of curriculum leadership, able to bear the diversified curriculum leadership responsibility. Consequently, the Dean of Academic Affairs as the curriculum leader, he/she not only subordinates to the

principal, but also has to work with the teachers. Therefore, how to balance the views of both the principal and the teachers is indeed difficult. As the curriculum leader, the Dean of Academic Affairs must be a man good at communication and coordination. Without the teachers' taking part , the curriculum reform will fail, because the teacher plays one of the important role in curriculum reform. Therefore, when the Dean of Academic Affairs works with the teachers to make efforts for developing curriculum, he/she must be a sympathetic carer and a cooperator who coordinate and negotiate with the teachers for curriculum developments. Meanwhile, Dean of Academic Affairs has to become a trustable administrative personnel for the principal in order to sufficiently authorized with leadership, so that the principal will release his power to the Dean of Academic Affairs.

3. The Dean of Academic Affairs can adopt proper action strategies by consulting curriculum leadership indicators, so that the school's curriculum development and operation can continue sustainably

On the basis of conclusion 4, the elementary school's Dean of Academic Affairs' curriculum leadership include 6 aspects, 16 items, 49 indicators, which form an action strategy model that develops and improves dynamically and continuously. When the Dean of Academic Affairs leads the school-based curriculum development, he/she cannot hurry to ask the teachers to become the expert of curriculum instantly. Rather, Dean of Academic Affairs can refer to curriculum leadership indicators to adopt proper action strategies, such as following strategy, simulation strategy, group strategy, collaboration strategy, the natural adaptation strategy, and other curriculum leadership's action strategies, so that the teacher's team can absorb new concepts and other people's successful methods and measures, and start to develop curriculum through team cooperation, rather than asking the teachers to work independently. Particularly, in process of the teacher's developing curriculum, he/she may have sense of fatigue, so the incitement must be exerted to inspire the teachers' spirit in order to put into practice sustainable management of curriculum development.

REFERENCES

Blandford, S. (2006). *Middle leadership in school: Harmonising leadership and learning* (2nd ed). London: Person Education.

Doll, R. C. (1996). *Curriculum Improvement: Decision Making and Process* (9th ed.). Needham, MA: Allyn & Bacon.

Eisner, E. W. (1995). Educational reform and the ecology of schooling. In A. C. Ornstein & L. S. Behar (Eds), *Cotemporary issues in curriculum*(pp.390-402). Needham Heights, Massachusetts: Allyn and Bacon.

Fullan, M. (1992). *Successful school improvement*. Milton Keynes: Open University Press.

Glatthorn, A. (2000). *The principal as curriculum leadership* (2nd ed). Thousand Oaks, CA: Cowin Press.

Harris, A. (1999). *Effective subject leadership in secondary school*. London: David Fulton.

Harris, A., Jamieson, I. M., & Russ, J. (1997). A study of effective departments in secondary school. In A. Harris, N. Bennett & M. Preedy (Eds.), *Organizational effectiveness and improvement in education* (pp. 147-161). Buckingham: Open University Press.T

Henderson, J.G., & Hawthorne, R. D.(2000). *Transformative curriculum leadership* (2nd ed). Upper Saddle River, NJ: Prentice-Hall.

OECD (1999). *School-based curriculum development*. Paris: OECD, 34-39.

Reid, W. A. (1999). *Curriculum as institution and practice*. London: LEA.

Sammons, P., Thomas, S., & Mortimore, P. (1997). *Forging link: Effective schools and*

effective departments. London: Paul Chapman.

Skilbeck, M. (1984). *School-based curriculum development*. London: Harper & Row.

Wallace, J., & Loughran, J. (Eds.). (2003). *Leadership and professional development in science education: New possibilities for enhancing teacher learning*. London: RoutledgeFalmer.

Wiles, J. & Bondi, J. (1993). *Curriculum Development: A Guide to Practice*(4th.). New York : Maxwell Macmillan.