The Analysis of Benefit Assessment Dimensions, Subdimensions and Indicators Connotation in School Evaluation

Tsai-Feng Cheng, Lu-Wen Chiu, Shu-Fen Tseng, Ru-Chu Shih, and Shi-Jer Lou

Abstract—Through the evaluation mechanism, the quality of educational environment can be effectively mastered. In general, the evaluation will contain three dimensions, including the process, outcome, and impact. The so-called impact is an assessment of the benefits after evaluation. Whether the reviewer can produce continuous growth, professional advancement and other benefits after the evaluation would decide the greatest value of implementing such evaluation. So far, there have been many discussions on the improvement of the evaluation itself (original evaluation), but the discussion on the overall benefits of the evaluation and the improvement of the educational environment remains deficient. Therefore, this study aimed to construct indicators connotation dimensions and subdimensions for the benefit assessment of school evaluation, and analyze the connotations of such indicators. In order to achieve this goal, based on the relevant literature of school evaluation, this study analyzed the theoretical basis of the evaluation benefits, and investigated relevant research and other literatures on evaluation benefits to analyze the system of indicators for the benefit assessment of school evaluation.

After this process, two major dimensions would be obtained; that is, school management and academic development. Each dimension contains four subdimensions: administrative effectiveness, resource integration, organizational interaction, and environmental improvement, as well as curriculum planning, teacher professionalism, student performance, and top-notch support. With eight subdimensions in total, each subdimension has its concept definition As there is no relevant research on indicators for benefit assessment in the current literature, the preliminary indicators connotation for the benefits of school evaluation obtained in this study can be further improved and adjusted to verify their reliability and validity and improve the quality of such indicators through the Focus Group Interview, Delphi Technique and Confirmatory Factor Analysis.

Keywords—school evaluation, evaluation benefit, benefit assessment.

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I. INTRODUCTION

Faubert pointed out that most OECD countries attach great importance to the accountability and improvement of education [1]. School evaluation is an important mechanism for improving the quality of school operations. Roller and Bovee studied 122 business schools in the United States[2]. Their findings point to the fact that accredited schools, compared to schools that have not been accredited, showed better results in terms of improvement to benefits, program goals, competitiveness, and student learning. Evaluation is an important tool to improve quality. However, how to effectively use these programs and strategies, and whether there are possibilities for sustainable development, must be tested through some mechanisms, which makes evaluation a very important point to think. School organizations can enhance the effectiveness of organization if they can value evaluation and continuous evaluation. That is, the development of evaluation as a core value of the school, and giving feedback to the school as an improvement program, can make the results of the evaluation play both a conclusive and procedural function [3].Therefore, regarding the school's learning environment, student feedback, student participation in school affairs, student satisfaction towards learning, and the degree of interaction between people in the school (including administrators, teachers, and students), such an evaluation process can evaluate whether a school has made any progress [4].

"The main function of evaluation is to help an organization make improvement, rather than to prove the quality of the organization." Muraskin pointed out the three dimensions of evaluation, including process, outcome, and impact. The so-called impact is to evaluate the benefits after the evaluation [5]. At present, academic researchers often use the "meta-evaluation" method to assess the current "evaluation methods" adopted by the school. However, from the data of these research results, it can be found that in the process of accepting qualitative interviews, the respondent will reveal the psychological growth gained and the changes in the organizational culture that he or she personally feels during the whole process of participating in the evaluation. Therefore, although the researchers believe that the evaluation results will determine the position of the evaluator based on the education policy, whether the respondent can continue to grow and improve his or her professional ability after the evaluation is

what reflects the greatest value brought by such evaluation. But. there is currently no research on the overall development of the school after the school has been evaluated.

The course of school evaluation will vary depending on the different evaluation theories. However, evaluation should not only be a technical activity for data collection and analysis [6], but should also be a process of continuous interaction between the evaluator and the respondent. However, although the current school evaluation can effectively draw the evaluation results, the subsequent development of the school to be evaluated will not be available until the evaluation is held next time to get the full picture of school management. With no further follow-up, it is impossible to know whether the schools have improved and continued their growth, and it is difficult to make the evaluation effective. The OECD stated that effective school evaluation is the continuous application of evaluation results to school operations. For example, school evaluation enable schools to develop the habit of collecting information [7]. Data collection can be applied to any school affairs. In addition, the interaction and communication between teachers, school administrators, students and with parents can better determine the direction of the school's development and help achieve the common goals. Therefore, it is necessary to plan the indicators for benefit assessment after school evaluation, so that the evaluated school can continue to establish self-checks based on the indicators, and the members of the school can effectively follow the indicators, maximize the benefits of school evaluation and make the school continue to develop and grow.

In order for the evaluation to function, the evaluation cannot focus solely on process or formalism. Therefore, the evaluation objectives should be established. In addition, mechanisms for monitoring the effectiveness of evaluations should be established. After the design and implementation of the school evaluation, "benefit assessment" is conducted to judge the values, advantages and disadvantages of the original evaluation activities. In other words, in addition to the instrumental purpose, the benefits of implementing the evaluation itself must also be the important key guiding the policy for the transformation and progress of the school. So far, there have many studies discussing the improvement of the evaluation itself (original evaluation). However, the discussion on the overall benefits of the evaluation and the improvement of the educational environment remains scarce. Nonetheless, if the school can effectively use the evaluation results and discuss the evaluation benefits based on the motivation for self-improvement, it is believed to help the education administration plan the school evaluation and construct mechanisms for education reforms in the future [8], [9].

II. THE IMPORTANT THEORIES OF SCHOOL EVALUATION

The researchers briefly explain the following five theoretical models that are most commonly used in current education evaluations.

A. Tyler's Evaluation Theory

In the 1930s, Tyler clearly revealed that the evaluation is to obtain information on the matters being assessed based on the objective, systematic way, so as to provide a basis for decision-making. In the model of Figure 1, the evaluation not only assesses the learner's learning achievements, but also provides information as a means of modifying the teaching objectives, understanding learner behavior or re-examining the interaction between the teacher and the learner.
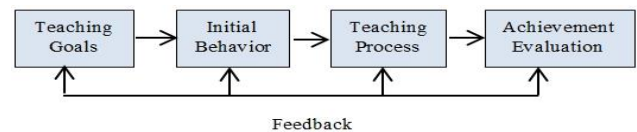

Fig. 1. The General Teaching Model
Source: The Researcher.

B. Shadish, Cook, and Leviton's Evaluation Theory

Shadish, Cook, and Leviton designed detailed vocabulary for evaluation in five categories. For example, in the evaluation part, the descriptive evaluation, the normative evaluation and the post-evaluation are distinguished [10]; in the knowledge construction part, different dimensions of certainty and different categories of knowledge are distinguished; in the use part, instrumental use, conceptual use, persuasive use, long-range use and short-range use are distinguished. For the evaluation design, the above principles provide a holistic conceptual plan. If the purpose of the evaluation and the various goals are clear, the effectiveness of the evaluation itself can be improved.

C. CIPP Evaluation Model

The CIPP evaluation model advocated by Stufflebeam and Shinkfield is more suitable for the systematic view of education and human services. The connotations of the CIPP model are described below [11]:

(1) Context evaluation. The main purpose is to examine the status and environment of the person to be evaluated. Its mission is to determine the theoretical basis of the educational goals.

(2) Input evaluation. Also known as resource evaluation. The main purpose is to judge whether the manpower, material resources and financial resources needed to be invested can be matched.

(3) Process evaluation. Basically, it is a continuous check on the plan under implementation. One of its purposes is to provide feedback to managers and executives to understand the progress of the plan, whether it is implemented according to the original plan. Another purpose is to provide guidance, and to make corrections to the plan when necessary.

(4) Product evaluation. The purpose of the evaluation is to measure, interpret, and judge the achievement of a program. Its main goal is to determine the extent to which the program meets the needs and to extensively examine the effectiveness of the program.

D. Comparative Impact Evaluation Theory

Lecy proposes how to make a relatively complete evaluation from some imperfect information provided by the organization [12]. Perhaps a comparative impact evaluation is a desirable consideration. Lecy pointed out that some of the evaluation methods published by previous scholars have been questioned, mainly because the control of the variables is not complete enough, so that the results of the research can only be applied to

certain aspects. Therefore, some evaluation methods published by previous scholars are not the comprehensive evaluation method, but the comparative evaluation method. They can be used to understand current organizational strengths and break through the limitations of past research frameworks. For example, in the past, the evaluation and sampling methods for impact effects mostly used the so-called randomized controlled trials. That is, it is best to be able to control all the variables and change only one of them to observe the final effect.

E. Integrated Theories on the Influence of the Evaluation

Kirkhart integrates the views of various scholars and proposes an integrated theory that evaluates the influence of evaluation [13]. He pointed out that after re-understanding the scope and language of the evaluation, the dimensions subject to the evaluation should also include the source of collected data, the intention, and the effect of the time, as shown in Figure 2. That is, various situations may occur to the unit to be evaluated owing to the source (including the process and results), intention (including the intended and unintended) and time (including immediate or end of cycle and a long-term time) of data collection, so that the evaluation has different impacts or benefits.
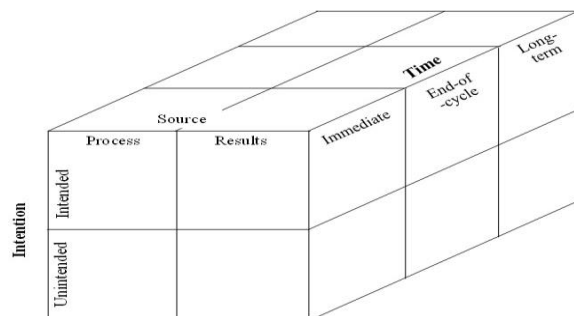

Fig. 2 Integrated theories on the influence of the evaluation
Source: Kirkhart (2000).

III. OVERVIEW OF THE THEORICAL BASIS OF EVALUATION BENEFITS

Reeve and Peerbhoy use evaluation to promote organizational development and transformation [14]. These experiences have matured in the United States and several sets of models have been developed. These models criticize traditional participatory and empowered evaluation . They focus on the learning and development process of interested parties, citing the concept of Kolb's learning loops to assess the benefits of the evaluation. The evaluation will enable participants (interested parties) to get what they need and support each other in the process. A good evaluation of the benefits allows interested parties to hear each other's voices. Reeve and Peerbhoy also believe that after the evaluation, the participants have gradually withdrawn from the uneasiness and depression at the beginning of the evaluation, and gradually established their own set of learning methods. For example, some participants have different thoughts when filling out the questions in the assessment questionnaire, and constantly review themselves during the evaluation process.

Estyn believes that the benefits of the evaluation occur during the continuous tracking of the evaluation, and the evaluation should not be regarded as a "one-time event" or the evaluation will lose its effectiveness [15]. The entire school evaluation is a continuous cycle, and the benefits of the evaluation can be presented in Figure 3.
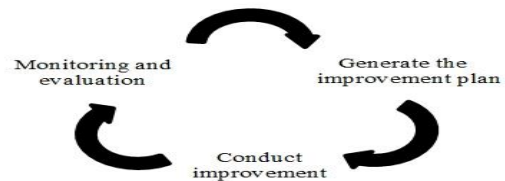

Fig. 3 Diagram of Continuation in Evaluation Benefits
Source: The Researcher.

In the study on the evaluation, there are three key elements involved: participation, dialogue and reflection. In order to expand the effectiveness of evaluation, involving interested parties in the planning and decision-making process have become an important appeal for many emerging evaluations (such as participatory evaluation, empowered evaluation, etc.). The impact of the evaluation is not only based on the results of the evaluation, but also on the thinking process triggered by the evaluation. As a reference for promoting organizational learning through education evaluation, the dialogue, reflection, and identification and clarification of values, beliefs, assumptions, and knowledge will be described below [16],[17]:

1. Dialogue

The purpose of the dialogue is to promote the mutual understanding rather than competition or persuasion among the members. Participants should identify each other as work partners, try to reduce barriers from the organizational hierarchy, develop an environment for dialogue that can build trust, respect and support, and encourage innovative ideas and actions to ensure that everyone's voice is heard so that differences and commonalities in perspectives can be explored to enhance individual understanding and knowledge of different opinions, and seek the possibility of solving problems.

2. Reflection

Reflection is the process where individuals and groups review and reconstruct the values, beliefs, assumptions, and knowledge associated with the issue subject to evaluation. Reflection may occur at any stage of the evaluation implementation (e.g., the process of participating in the evaluation, the overall review after the evaluation is completed, and the expectations for future evaluations). The reflection by members can help them think more deeply and thoroughly about the evaluation issues, and the group reflection can help build the community.

3. Identify and clarify values, beliefs, assumptions and knowledge.

Dialogue and reflection involve examining, analyzing, criticizing, and transforming the values, beliefs, assumptions, and knowledge behind the evaluation issues to promote changes in action norms and organizational actions. Organizational members often take for granted the existing mental model or knowledge structure and tend to act in the old way, which may limit the extent of organizational learning and change. If

members can examine the values, beliefs, assumptions, and knowledge associated with the issue, it will help to understand the individual conduct, as well as the differences between members, and increase tolerance and respect for each other.

In summary, from the above discussion, we can reasonably deduct that, through the evaluation process, we can encourage members of the organization to conduct dialogue and deep reflection and better confirm and clarify the values, beliefs, assumptions and knowledge of organizations and individuals. Through this interaction, organizational structure and system, organizational culture, member growth and professional development are generated, as shown in Figure 4. These are the important benefits that can be brought to the schools after evaluation is implemented.
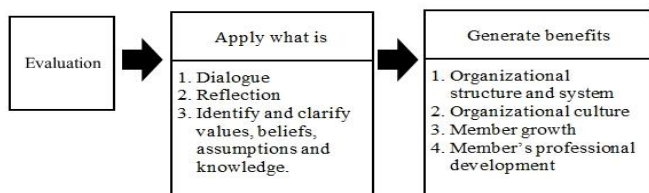

Fig. 4 Diagram of Evaluation Benefits
Source: The Researcher.

IV. RELEVANT RESEARCH ON EVALUATION BENEFITS

Evaluation is regarded as the process of developing the purpose of the evaluation, the evaluation of the issue and the relevant guidelines/indicators, collecting, analyzing, and interpreting evaluation data, as well as communicating and applying the evaluation results. It can provide opportunities for individuals and teams to think, talk, share and explore important issues of the organization. If the organization members can participate in the evaluation process, it will help them think and develop certain attitudes and motivation for the evaluation topics. They can even develop a shared understanding of organizational goals and action priorities, which may promote follow-up decisions and actions [14], [18], [19]. In addition, the process of evaluation participation may help empower the members of the organization, enhance the understanding and sense of belonging to the evaluation process, and improve the degree of utilization of the evaluation results [18].

Organizational learning is one of the utilities of education evaluation [18]–[21]. The topic of promoting organizational learning through education evaluation stems from the study on the utility of evaluation [19]. The evaluation utility is to the functions and effects of the evaluation. It is hoped that the evaluation will respond to the needs of the organization and expand the role and function of the evaluation in the organization. As far as the theory of administrative system is concerned, the implementation and effectiveness of education evaluation have an interactive relationship with the internal and external environment of the school and they can influence each other. Education evaluation cannot naturally be outside the organization context .

In order to promote organizational learning, education evaluation should become part of the organizational learning system to integrate the evaluation mechanism into the school's infrastructure and practice. Through the implementation of programmatic and continuous evaluation, the resultant use and procedural use must be effectively employed to link evaluation results, change actions, and organizational goals, so as to build one of the supporting structures and drivers of school-wide change [16], [18], [21], [22].

Lin Huirong pointed out that evaluation helps develop individual cognitive maps and collective images, and it can shape the culture of organizational learning [23].

According to a study by Fleischer, and Christie for members of the American Evaluation Association, the results indicate that at the organizational level, organizations can drive evaluations and gain certain benefits. The results directly prove that the benefits that the organization can achieve have the following aspects of characteristics: 1. improve organizational capabilities; 2. fully implement the improvement strategy plan; 3. assist to use the results of the evaluation to improve some of the basic concepts in practice; 4. improve the motivation of group learning; 5. strengthen those who are willing to use the results of the evaluation to enhance their evaluation and thinking abilities [24].

Based on the opinions of the above scholars, we can know that the functionality of the evaluation gradually moves towards comprehensive application. In addition to the results, the process is also emphasized. The so-called process functionality includes the people and things involved in the whole process, as well as the individual and the whole of the organization. In addition to the statement of the results that can serve as the basis for organizational improvement, the additional value of the evaluation activities lies in the participation and interaction of all members of the organization in the evaluation, the understanding of the organization's goals and operations, and providing the basis for the processes that need improvement. Further, we can also know which part lacks resources, or where to seek further resources, thus promoting organizational learning, and organizational efficiency as well. All of the above can be said to be the instances of "evaluation benefits."

Therefore, if we can evaluate the benefits of the school evaluation and then establish indicators for assessing the evaluation benefits, we will be able to enrich the vision of research on education evaluation, fill the gap in this research field, and provide references and basis for educational administrations in educational decision-making, evaluation planning and resource allocation.

V. ANALYSIS ON THE CONNOTATIONS OF THE INDICATORS FOR BENEFIT ASSESSMENT OF SCHOOL EVALUATION

Vanhoof and Petegem argue that evaluation is not only a one-time evaluation process to obtain certain outcome, it will yield the following unique benefits instead: 1. For better education, members of the organization are encouraged to share their ideas; 2. Organization members will develop a more positive attitude and are more willing to look at things from a critical perspective; 3. Organization members can have both positive and negative thinking modes for school affairs; 4. Organizational members can generate more motivation (power) to improve the quality of education; 5. Organization members are more willing to become part of school policy development; 6. Organization members can be more aware of their

responsibilities; 7. Organization members are more willing to work with others and share organizational visions at school; 8. School cohesion is improved; 9. Organization members can jointly establish school culture / improve school culture; 10. Organization members improve the sense of identity for school education; 11. Organization members can confidently, openly and honestly speak their own ideas while receiving effective responses; 12. Organization members have a higher willingness to work together; 13. The members of the organization are trustworthy; 14.Organization members are more willing to give feedback and learn from mistakes anytime and anywhere; 15. Organization members are more sensitive to school affairs [25].

Regarding the indicators for assessment of evaluation benefits, there is little research published on this topic. Pan Huiling conducted an in-depth analysis on 187 papers, and found that most of the contents were about opinion survey of the current state, implementation methods or the construction of evaluation indicators [26]. Chen Suqiu pointed out that in the past 30 years, the research papers have found that the education evaluation papers can be divided into three major aspects, including: 1. the evaluation of the principal, the evaluation of the teachers, and the evaluation of the students; 2. school evaluation, facility evaluation and school affair evaluation; 3. Course evaluation and teaching material evaluation. As far as the essence of school education is concerned, the personnel, hardware equipment, or software courses are mentioned [27].

As mentioned above, Taiwan's evaluation research focuses on current conditions or objects. The researchers of the school evaluation have not conducted a tangible study on the "Evaluation of School Evaluation Benefits" or "Utility of School Evaluation." In other words, after the school has gone through the evaluation process, have all the members of the school perceived the true benefits of the school? That is to say, regarding the question whether the school can follow the evaluation results and process to bring the functions and effects of the evaluation into full effect after the evaluation, relevant research on construction of indicators for the evaluation benefits remains deficient. In order to explore the function and effectiveness of such evaluation and the perception of all members of the school, relevant indicators must be set to correspond to the primary evaluation. As the process and various types of materials prepared for the "school evaluation" conducted at various schools are made in response to the indicators revealed by the education administration, the selection of "indicators for benefit assessment of school evaluation" should also be based on the indicators published by the educational administration.

Taking Taiwan's high schools as an example, in the "School Evaluation Implementation Plan for High Schools" published by the Ministry of Education [28], the school evaluation project is divided into seven dimensions, including "Principal Leadership," "Administration," "Course Teaching," "School Counseling," "Environment & Equipment," "Community Interaction" and "Performance," which are shown as follows:

TABLE I: Dimensions of and Indicators for Evaluation of High Schools

Dimension	Indicator
Principal Leadership	School philosophy, professionalism, leadership acts, image & style
Administration	School planning, administrative operations, crisis management, financial management, information management, personnel business, board organization
Course Teaching	Course design, teaching material selection, diversified learning, teaching activities, professional advancement, class management, teaching assessment, remedial teaching, skill teaching, special education
School Counseling	Life education, activity & competition, human rights & autonomy, sports & health, learning guidance, career counseling, case counseling, life education, gender education
Environment & Equipment	Campus environment, space configuration, equipment & instruments, library & library equipment, security maintenance, resource integration
Community Interaction	Teacher organization, parental involvement, school atmosphere, community relations, strategic alliance, alumni service
Performance	School reputation, teacher profession, student performance, community identity

After summarizing the above dimensions and related literature on high school evaluation indicators [14], [21], [22], [25], we can obtain two dimensions of "school management" and "learning ability development", and eight subdimensions. The connotations of those indicators are shown in Table Ⅱ.

TABLE Ⅱ: Connotations of Benefit Assessment Dimensions, Sub Dimensions and Indicators connotations in School Evaluation

Dimensions of School Management	
Subdimension	Indicator Connotation
Administrative Effectiveness	It means that after the evaluation, the school can more effectively achieve development goals, improve the administrative execution performance and operate the feedback mechanism for improvement.
Resource Integration	It means that after the evaluation, the school can more effectively conduct documentation, acquisition, distribution, use and integration of various resources inside and outside the school.
Organizational Interaction	It means that after the evaluation, the administration, teachers, students, parents and the outside world can have better interaction, and the members of the school have a higher sense of identity and participation in the school.
Environmental Improvement	It means that after the evaluation, the school can more effectively manage and use the teaching equipment, venues and equipment on campus or at school buildings and recycle and utilize renewable resources.
Dimensions of Learning Ability Development	
Subdimension	Indicator Connotation
Curriculum Planning	It means that the organization and operation of the school curriculum become more effective after the evaluation, and can provide students with appropriate remedial or reinforcement courses on career development.
Teacher Professionalism	It means that teachers can have more positive performance in teaching, teaching materials, appraisal and class management after the evaluation, and teachers can participate more actively in the study and professional community.
Student Performance	It means that students can have better results in behavioral performance, learning, physical fitness and competition in and out of school activities after the evaluation.
Top-notch Support	It means that after the evaluation, the school can establish a counseling and care mechanism for both the disadvantaged and excellent students and the school can operate more effectively.

VI. Conclusions

Through the discussion and analysis of relevant documents and literatures, this study constructs the first draft of indicators for benefit assessment of school evaluation, and records relevant scores at two dimensions of "school management" and "learning ability development." Under the subdimension of "School Management," there are "Administrative Effectiveness", "Resource Integration," "Organizational Interaction" and "Environmental Improvement." Under the dimension of "Learning Ability Development," there are "Curriculum Planning," "Teacher Professionalism," "Student Performance" and "Top-notch Support."

The current school evaluation indicators do not include the concept of evaluation benefits, which means that after the evaluation of the school, when the evaluation committee makes recommendations, there is no further system for follow-up on the evaluation benefits. If the educational administration can incorporate the evaluation system constructed by the study into the evaluation plan, the school can also pay attention to how to show the effectiveness of the evaluation during the school evaluation. This way, not only the current school management results, but also the improvement suggestions can be reviewed, so that the evaluation can really function and truly make the school improve and grow. The situation where the improvement suggestions are similar each time after the evaluation will be avoided, and it will be easier to know whether the school has made improvement since last evaluation. If the connotations of the indicators constructed in this study can be included in the evaluation indicators, the school can truly achieve the evaluation benefits, and if the education administration strengthens the actual benefits of the school evaluation, the school can really make improvement to school management and student performance, so as to further progress towards excellence and sustainable management.

As there is no relevant research on indicators for benefit assessment in the current literature, this study obtains the first draft of indicators for benefit assessment of school evaluation through the literature analysis, and afterwards, the multi-dimensional research methods (such as focus group discussion, Delphi technique and confirmatory factor analysis) can be used to further revise and verify their reliability and validity to improve the quality of relevant indicators.

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