

# Development of an Information-Based Leadership Evaluation Index System for School Management Teams: A Comprehensive Approach

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**Abstract:** In the context of educational informatization reform, there are many uncertain factors in the process of education development. To optimize the educational environment so that it can be effectively combined with information technology, teachers need to change their teaching ideas, strengthen the school's own adaptability to informatization, and promote the development of informatization construction in schools. As a branch of information leadership, the management team should establish an evaluation index system for information leadership in order to ensure the construction of school informatization, so as to provide a boost for the integration of school resources and information technology. Based on the overview and connotation of information-based leadership of the management team, this paper explores the construction of an evaluation index system of information-based leadership of the school management team, aiming to provide references for the research of relevant personnel in the future.

**Keywords:** School management team; Information-based leadership; Evaluation index system

**Online publication:** April 29, 2024

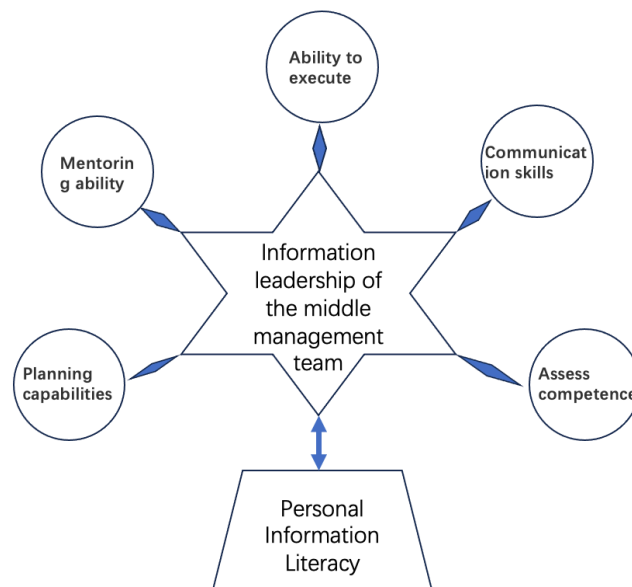
## 1. Introduction

Leadership is a term used in the development of school education, and its meaning has gradually evolved from focusing on leadership and management ability to the power that works through the people and culture in the organization. The information leadership of the school management team is of positive significance to the development of the school, which can not only understand the current development of the school management team's own information leadership but also build an evaluation index system on this basis, so as to lay the foundation for the standardized development of the management team and the improvement of management quality in the future.

## 2. Overview and connotation of information-based leadership of the management team

The school management team has a specific and direct guiding role in the daily management of the school, and

the members of the school management team should have a high level of personal information literacy (**Figure 1**), and include a large number of personnel, such as the Student Affairs Office, the Academic Affairs Office, the Teaching Department, the Teaching Office, the Information Equipment Management Office, and other relevant units, which play the role of the principal, teachers, students, and various functional units, and also serve as a bridge to enable the smooth development of the entire campus activities<sup>[1]</sup>. Based on the above characteristics, the informatization leadership of the school management team can be defined as follows: to promote the development of school informatization as the main goal, to assist the principal, assist and guide the teachers to build the campus informatization development; and on this basis, participate in the formulation of plans and decisions for the development of informatization, and implement and improve them, as well as promote the use and improvement of information technology, play a role in connecting the previous and the next, and promote the development of campus informatization.



**Figure 1.** The construction diagram of the personal information literacy of the management team

Secondly, the principles of the establishment of the evaluation index system are described as follows.

(1) The principle of purpose

The evaluation of educational informatization leadership ability is a goal-oriented action, which can not only measure the effective actions of leaders in the information environment but also provide guidance and suggestions for leaders' actions. Only by clarifying the objectives of evaluation can we prevent the phenomenon of "blindness" and "inefficiency" in the evaluation process<sup>[2]</sup>. Whether it is a process evaluation or a final evaluation, it can diagnose the leadership behavior and ability of school leaders in the information age, discover the deficiencies in their leadership behavior, and provide corresponding feedback, so as to improve the leadership level of leaders in a timely manner.

(2) The principle of evidence-based

The well-founded principle is that a complete evaluation system cannot be made up or imagined out of thin air. The index evaluation system is of positive significance for the improvement of education and teaching quality and school management ability, so it will be used in the evaluation of the school's information leadership ability, which will have some impact on the development of the school. Therefore, the construction of the evaluation system must be based on the existing research results,

and combined with the current development of school education in China and the relevant information technology norms.

(3) The principle of operability

The so-called “operability” refers to an evaluation system that is effective in practice, allowing for a real measurement of the problems being examined and the ability to draw definite conclusions<sup>[3]</sup>. In other words, it is necessary to concretize the specific indicators in the evaluation system and express them with measurable behaviors, so that the evaluated objectives can be compared with realistic actions, so as to select the weight of the corresponding indicators, improve the accuracy of the measurement, and avoid using an index to express a broad meaning or vague meaning.

(4) The principle of orientation

The principle of orientation, that is, the standard should bring some guidance to the evaluation objectives, which is also another role played by the evaluation system in the application, not only as a standard for testing and evaluating the quality and effectiveness of school education, but also as a guide for the role played by the management team in the behavior, and the evaluation objectives are oriented to better aspects. The construction of an information-based leadership evaluation system should be carried out in accordance with this principle, so as to provide some references for the leadership decision-making of the management team and consciously improve their information-based leadership ability. Therefore, when formulating the index, the principle of orientation is necessary.

### **3. Construction of the information-based leadership evaluation index system for the school’s management team**

#### **3.1. The composition of the evaluation index system**

The first aspect is the composition of the evaluation index system of the principal’s information-based leadership. Through the comparison and analysis of different types of foreign principal leadership evaluation indicators, it can be seen that the information leadership of principals should include: vision, environment, teaching and learning, information management, information communication and coordination ability, information evaluation, etc., and the individual impact of such aspects should also be evaluated in the evaluation<sup>[4]</sup>. Then, through SPSS18.0, the indicators of various international and domestic evaluation criteria were quantified accordingly with these seven aspects, and the factors that could be used for reference were found through comparison; they were integrated with the current analysis viewpoint, and the information management level of primary and secondary school teachers was evaluated and quantitatively analyzed.

The second aspect is the composition of the evaluation index system of the school management team’s information-based leadership. At present, there are few studies on the evaluation of educational management, and in the process of research, it is necessary to list more than 50% of the public dimensions in all systems on the basis of a comparative analysis of relevant evaluation criteria at home and abroad, combined with the evaluation indicators of principals. On this basis, an evaluation system consisting of informatization construction planning capabilities, informatization teaching and learning guidance capabilities, informatization environment and resource construction implementation capabilities, information communication and coordination capabilities, information management and evaluation capabilities, and basic personal information qualities will also be constructed. At the same time, these factors should be quantified and compared, and some valuable indicators are obtained, which are integrated with the perspective of educational development, and the team’s information leadership ability is preliminarily evaluated.

The third aspect is the composition of the evaluation index system of teachers’ information-based

leadership. Through comparison and reference, the information leadership of teachers should be analyzed in the process of research, and it should be understood that teachers should have the ability to participate in the construction and management of school information technology, the leadership of information teaching, and the ability to communicate and coordinate information in teaching and management.

### **3.2. Preliminary work of the evaluation system project investigation**

The purpose of the survey was to obtain the recognition of principals, management teams, and teachers on the level of their own leadership evaluation indicators included in the evaluation system, and to analyze the questionnaire data to determine the weight of the initial indicators<sup>[5]</sup>. The final investigation is mainly based on the expert survey, and its goal is to re-set the weight of each index given by the expert to the level given by the evaluation system, and then carry out the weighting of the two weights so that a more perfect and reasonable index weight can be obtained.

### **3.3. Survey data analysis and the construction of an information-based leadership evaluation system for the management team**

#### **3.3.1. Survey data analysis based on analytic hierarchy process and preliminary determination of index weights**

The analytic hierarchy process was used to analyze the survey data, and the weighting coefficient of each index was preliminarily determined. By analyzing the questionnaire survey data and using the Yaaph hierarchical analysis method, a hierarchical system composed of three levels—target layer, dimension, and index level—was established. Next, by constructing a judgment matrix, the weight calculation and consistency check are carried out, and the weight coefficient of the evaluation index is obtained under the condition of judging whether the weight calculation is reasonable. The evaluation indicators of the three information-based leadership skills of the principal, management team, and teacher of the first phase of the school were summarized and listed.

#### **3.3.2. Expert evaluation data analysis and index weight re-determination**

The evaluation results were comprehensively evaluated, and the weights of each index were recalculated. Professionals are encouraged to assign the corresponding grading values to the evaluation indicators obtained in the early stage, and finally obtain the composite weight of the index through weighting or average. Since it is necessary to explore the knowledge of information technology in the research process, the professionalism and ability of the professionals themselves will be taken into account when selecting professionals, and there are more professionals in teaching technology and fewer talents in education management. Through judgment analysis, Yaaph weighting operation, and consistency test, the weights of each index of the secondary informatization leadership evaluation of principals, management teams, and teachers were obtained.

#### **3.3.3. Proposing the evaluation index system of school informatization leadership**

An information-based evaluation index for the management ability of primary and secondary school principals is constructed. The weights of each index obtained from the two questionnaire surveys were weighted and calculated, and lastly, the three parts were weighted and combined to form a quantitative school-level information leadership evaluation system.

When finding the average weight, the frequency is used, and the frequency of each number is different. However, in some special cases, if the frequency is the same, then it is determined according to the weight of these numbers, and it is equal to the average, as mentioned above. If the frequency of teachers, professionals, and students is 0.333, then this weight is 73.33, which is the same as the average. The average weight method

is applicable to a wide range of fields, such as gymnastics, diving, and other sports, each athlete has his own optional movements due to the difference in individual skill level. Though under the same quality of completion, the higher the technical difficulty of the athlete in the competition, the higher the score. On this basis, the weights of the questionnaires of teachers and principals are averaged with the weights evaluated by professionals, so as to obtain more scientific indicators, which are called weighting.

Based on this, it is also necessary to carry out weight weighting for the construction of the evaluation index system of the information leadership of the school management team, and optimize the standard on this basis, as shown in **Table 1**.

**Table 1.** The weight of the evaluation index system of information leadership of school management team

Primary indicators	Weight	Secondary indicators	Weight
Policy understanding	0.1639	Policy learning	0.0711
		Policy recognition	0.0929
Informatization planning	0.1508	Information-based leadership and organization	0.0340
		Information environment construction planning	0.0289
		Information education and teaching development plan	0.0469
		Implementation of the development plan of informatization education	0.0410
Informatization of the whole school propulsion	0.5565	Organizing online training	0.0277
		Conducting school-based training	0.1541
		Constructing typical lesson examples	0.0955
		Promoting demonstration and leadership	0.0403
		Improving teachers' ability to teach in accordance with information	0.1641
Informatization teaching evaluation	0.1288	Innovating the application of information-based education and teaching	0.0747
		Evaluation of school-based training	0.0627
		Evaluation of micro-ability points	0.0661

## 4. Conclusion

In order to achieve the goal of school informatization development, the evaluation index should be constructed for the management team's own information and leadership, so as to promote the development of the school and the needs of the development of the times. Through this, education management informatization can be implemented in the education and teaching work.

## Disclosure statement

The authors declare no conflict of interest.

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