

# The Construction of Evaluation Index System on Preschool Education Informationization

Yanhua He<sup>1</sup>

<sup>1</sup> School of Modern Education Technology, Northwest University for Nationalities, Lanzhou, China

Correspondence: Yanhua He, School of Modern Education Technology, Northwest University for Nationalities, Lanzhou 730124, China. E-mail: 136027328@qq.com

Received: August 5, 2015

Accepted: August 11, 2015

Online Published: August 17, 2015

doi:10.5430/jms.v6n3p60

URL: <http://dx.doi.org/10.5430/jms.v6n3p60>

*This work was supported by the Fundamental Research Funds for the Central Universities of Northwest University for Nationalities (Grant No.ZYZ2012039).*

## Abstract

Information on the development of pre-school education has an important role. The determination of preschool education informationization evaluation index is a key problem in the development of preschool education informationization. On the basis of literature research, this paper preliminary analyzes the general index of preschool education informationization. Through in-depth interviews to relevant personnel, the content index was revised eventually, and established a pre-school education informatization evaluation index system, and a small area of the indicator system for a trial.

**Keywords:** preschool education, evaluating indicator, construction informationization

## 1. Introduction

The research on information technology in the educational circles about our country began in the 80's in twentieth Century. After many years of research and practice, the influence of information with the development of education has been widely recognized by the academic community. In the global policy document with *The Country Medium-term and Long-Term Educational Reform and Development Plan (2010-2020)*, china is clear for the first time the information as the education development a major security measures, and given its strategic position.

However, in the current study the information technology has been proved to be effective in the education development of security measures, but there is little overlap with the preschool education. When the information research from urban to rural, from the colleges and universities to the primary schools, in virtually all areas of education practice, problems of informatization construction of preschool education are less likely to bring people's attention. Due to the lack of related research, in practice, there are some problems that can not be ignored in the preschool education informationization. The problem is the imbalance of the macro level of information and the application of information in the micro

The so-called horizontal imbalance refers to the development of the regional development about the preschool education information, and the development level of the information is very different between urban and rural areas. Even in the same area, the level of information is different from the kindergarten, which is caused by the "digital gap" has become a serious obstacle to education. The so-called application of the non coordination is to refer to the preschool education information development disorders, resulting in the application of information technology is inefficient or ineffective. For example, the software resource and infrastructure of the non-coordination of some kindergarten hardware become the decoration; it can not be applied to the teaching of children

Another, teachers information literacy development are lag, and the teachers blindly use information technology indoctrinate children in primary school to learn knowledge, information technology has become a tool of "pumping". In essence, this question about the imbalance and disharmony is due to the lack of overall planning and development of the education informationizes development.

Although we began to realize the significance of preschool educational informationize, and tend to make

informationize as an indicator of nursery school, but the standard definition is not clear, lack a teachers overall, hardware and software elements such as the standard system. Lacking of standards leads directly to the early education institutions according to their own ideas and convenience. Random purchase of information equipment, resulting in the lack of information on the development of power and micro development of the non coordination, so that the lack of a clear path to the development of preschool education. Therefore, the construction of a coordinated regional development, evaluation index system of comprehensive consideration about infrastructure, software, hardware, teachers and other content, for the development of the preschool educational information has important significance.

## **2. The Determination of the Evaluation Index of Preschool Education Informationization**

The main frame of the evaluation index system is the index, and to evaluate each element in the collection of content. According to the evaluation purpose, evaluation index, it is the basis of building evaluation index system. However, it is a complex work to determine the evaluation index of preschool education informationization. First of all, the index should be systematic, and the evaluation index should reflect the essence of preschool education informationization. Secondly, the evaluation index should be independent, the same level of the individual indicators can not have a relationship, and can not replace each other; finally, the evaluation index should be more comparable, to operate clearly, and the evaluation results should be compared. Therefore, the process of determining index is a systematic project including literature research, questionnaire survey, in-depth interview and so on.

### *2.1 The Literature Research of Preschool Education Informatization Evaluation Index*

Although about preschool education informatization evaluation index study, but in recent years, research on general education informatization evaluation has been relatively rich. Liu Peng (2012) in Shanghai Pudong New District primary and secondary school education informationization situation established evaluation index system including the construction of resources, management mechanism and application level three level indicators. Cheng Jiangrong and Jie Yueguang (2011) for the rural primary and middle school development for different stages of the development of information technology performance evaluation index system. These studies have a solid theoretical basis, and after a certain practical test, it is an important reference for the evaluation criteria of preschool education informatization. From this general education information evaluation of the content, we have initially identified the primary school education information evaluation index, the details are as follows.

#### **2.1.1 Infrastructure Construction**

Infrastructure is the basic material condition of preschool education informationization. Without computer, network and other basic hardware equipment, information technology also can not talk about. According to the related research, infrastructure of the observation points mainly include: number of students and computer volume ratio, the number of teachers and computer units, ratios of television or projector coverage rate, network connectivity, DVD and audio equipment such as equipment

#### **2.1.2 Software Resource Construction**

The application of the supporting software resources in the teaching and management are the core of the preschool education informationization. Compared with the infrastructure, the investment is more long-term, and the lack of software resources is the main factor to restrict the development of preschool education. Generally speaking, the construction of software resources mainly consists of two points: first, the number of educational software, secondly, the number of supporting management software

#### **2.1.3 Soft Environment Construction**

Soft environment is the atmosphere and guarantee of the development about preschool education information. It reflects some of the system, such as the degree of attention of the people of information, reflecting the leadership of preschool education institutions, teachers of information technology and awareness level. The index of the observation points are mainly related organizations are complete, supporting management file is complete.

#### **2.1.4 Related Personnel Information Literacy**

Man is the fundamental driving force for the construction of information technology. Leaders of the preschool education institutions, teachers are trained in special information technology. Their information technology to grasp the situation, and so on, is a guarantee of the success about preschool education information, is the main point of observation of the index.

### 2.1.5 Information Application

The application of information technology is the ultimate embodiment of preschool education informationization. The application of information technology in the field of teaching, management and teacher professional development is the main observation point of the index. According to this, we have developed a general evaluation about the preschool education information.

### 2.2 An Investigation of the Amendment to the Evaluation Index of Preschool Education Informationization

The evaluation index of a system is not isolated, and is a system of mutual relations. Therefore, the index of the system is dynamic and open. Aiming at the evaluation of different content, evaluation to according to new requirements of the social development pattern to the evaluation of the object presented regularly change index system and in the dynamic development adjustment, in order to adapt to the development of the society and the appraisal object. The evaluation index of the literature study is the general information content, and it needs to be amended according to the special circumstances of the preschool education.

Table 1. Contents of the evaluation index of preschool education informationization

Evaluation points	Main content
Infrastructure construction	The proportion of students and computers, The proportion of teachers and computers, network connectivity, television and projector number, etc.
Software resource construction	The number of teaching software, the number of teaching management software
Related personnel information literacy	Kindergarten and teachers' information consciousness, information skills etc.
Information application	Application in teaching, application in teaching management, and application in the development of professional

Therefore, we have carried on the interview to some preschool education experts and the kindergarten teacher, and have carried on the revision to some evaluation index of the preschool education informationization.

#### 2.2.1 Amendment to the Content of the Infrastructure Index

In general, the primary indicator of the evaluation about education informatization is the construction of the infrastructure, and the vital parameter of this index is the vital index for the basic facility. For preschool education in terms of information, children are often not the computer's direct operator. And the main goal of preschool education is not to practice and training of knowledge learning, the computer is mainly used to create situations, and to demonstrate the relevant content,

Therefore, relative to the life ratio is not an important observation point. And traditional media such as television and radio systems, because there are a large range of display content to children, and being in line with the requirements of preschool education. So it's more important than it is. In addition, preschool education institutions should take more care, care tasks; this task makes it very important to communicate with their parents. Therefore, their cooperation platform construction is the important content of informatization, the platform can be based on a simple application of Fetion Internet tools.

#### 2.2.2 Modification of the Contents about the Software Resource Construction Index

Preschool education is the main form of children's activities and inquiry, the content of education is also showing a more distinctive school based characteristics, content is more rich, diverse. However, due to the diversity of the contents of the curriculum and the lack of uniform standards for early childhood education curriculum, there are a few of the unified education resources in the market. Buying the children's education resources is often the goal of family education for children, for a single child learning, is not suitable for the use of collective teaching in kindergarten. The key to the construction of preschool education resources lies in the opening and utilization of school resources. Therefore, with the study of software resource construction, we should also focus on the source of software resources, practice requires more from the development of Kindergarten Based Teaching software.

Table 2. Index system framework of preschool education informatization evaluation

First level indicator	Two stage index	Weight	Main observation point
Infrastructure construction	Information equipment	15	Teacher and computer quantity ratio, computer performance, TV, DVD number, broadcasting system construction
	Network connection	5	The number of connected computers, the connection between the school and the school, the school and the family connection
Software resource construction	Number of software resources	10	The number of teaching software, the number of management software applications
	Software source	15	Teachers' development of courseware, the number of teachers' award winning courseware, and the management of school curriculum resources library
Soft environment construction	Organization system construction	5	There is no special organization, the system is perfect, there is no full-time maintenance personnel, system implementation
	Fund guarantee	5	The amount of funding, investment, and demand for the number of previous years
Related personnel information literacy	Teacher information quality	10	The principals and teachers' education, information technology ability, information consciousness of participation
	Teachers professional development channels	15	The number of training, training content, methods, results, teachers' professional development of the vision, participation in information technology
Information application	The integration of information technology and teaching	15	The number of training, training content, methods, results, teachers' professional development of the vision, participation in information technology
	Information management	3	Office automation, information management automation, etc.

### 2.2.3 The Contents of the Relevant Personnel Information Literacy Indicators

Compared with other types of education of teachers, preschool education teachers' team construction is relatively backward, many preschool teachers' lacking of educational technology specialized learning. Their information skills are mostly in practice, the information literacy is not high, the lack of distinction and evaluation of the foundation. Therefore, this indicator in observation points should be emphasized the guarantee mechanism of information literacy development is perfect, in other words, is concerned with the related personnel are to have the opportunity to improve their information literacy.

### 3. The Frame of the Evaluation Index System of Preschool Education Informationization

According to the relevant literature analysis and interviews with experts and teachers, we can preliminary determine the primary level indicators and their contents in the evaluation of preschool education informationization. Through the small talks, we content of each level index of analytic hierarchy process (AHP), the initial formulation contains 5 first level indicators and 10 secondary indicators of preschool education informatization about evaluation index framework.

In addition, a complete evaluation index system should have a systematic evaluation index, and the weight of each layer index is an important part of the evaluation system. It marks the important degree of an index, scientifically determining the weight of each index in the index system to improve the quality of the evaluation for the positive effect.

### 4. The Case Study of Evaluation Index System and the Conclusions

We adopt the expert evaluation method, invited the preschool education experts and teachers by practical experience of each index gives a certain weight value, evaluation index system of trial case and conclusion analysis tentatively up the evaluation index system. We chose 5 different levels of kindergarten in Linxia City, Gansu Province, and evaluated the level of information, but also the evaluation index system for small-scale trial and test. In the evaluation process, we used three evaluation methods to quantify the pilot kindergarten. Firstly, the subjective evaluation of the subjective. We invited two experts in the evaluation index system for the development of educational information technology experts on the 5 kindergartens to carry out the subjective score, the average score of the two is divided into the final expert. The second is the kindergarten self rating. Related kindergarten to the basic contents of preschool educational information, please them to the garden of informatization level of subjective scoring. The third step is use of evaluation index system for evaluation. According to the evaluation index system of the team members and the weight of the index (see Table 3), and finally, we use Excel to evaluate the score of the three.

Table 3. 5 kindergarten information evaluation score table

Number	Expert score	Self rating	Index system score
A	85	90	82
B	72	85	70
C	63	80	52
D	40	60	35
E	25	60	30
MEANS	57	75	54

From the test results we can get the following three points. Although since before we have to self rating reiterated the evaluation results of research into the nature and anonymity is guaranteed. The weak kindergarten ratings in informatization level tend to overestimate the informatization level. In the randomly, selected 5 kindergartens, the development of a good is a private kindergarten. Even have been building their own websites, and on the site to carry out more home interactive activities. But the development of the two kindergartens lags behind, the lack of the use of information technology to improve the teaching effect of the foundation. Secondly, in the information level evaluation, using the index system is difference between the score and the score. Although since before we have to self rating reiterated the evaluation results of research into the nature and anonymity is guaranteed, self rating in informatization level weak kindergarten often overestimated the informatization level of the garden

It indirectly explains the necessity of constructing the evaluation index system. Finally, the evaluation results show that the evaluation index system is similar to that of the experts, and they have a higher positive correlation (correlation coefficient is 0.97). But further investigation shows, different kindergarten kinzley is the weight of each index understanding difference is bigger, and the specific observation points score assignment views is not uniform. On the other hand, this kind of understanding is due to the personal experience. On the other hand, it also reflects the unbalanced development of preschool education information. Relatively weak information base kindergarten tend to think it infrastructure higher weight is given, and some of the better development of the kindergarten is more concerned the soft environment construction and related personnel information literacy.

In view of this, the final evaluation framework of the weights of indicators to be further adjusted. According to the related research, the development of education informatization can be divided into four stages, which are the beginning, application, integration and transformation. Although the content of each stage is similar, the focus is different. Therefore, we need to collect more data, to use more scientific method and add or adjust the weight of each index, to improve the evaluation index system.

## References

- Chen, H. (2012). Application of A Model for the Integration of Technology in Kindergarten: An Empirical Investigation in Taiwan. *Early Childhood Education Journal*, 40(1).
- Gao, X. (2011). Thinking of Chinese preschool education in the era of informationization technology. *China education informationization technology*, (18).
- Guo, L. (2007). *Informationization technology and early education*. East China Normal University Press.
- Li, F. (2012). Media Education of Children: the Uncritical Perspective. *Global education Outlook*, (8).
- Li, H., & Jin, H. (1999). Multimedia Computer Teaching, to Promote the Development of Children's Comprehensive Quality. *Audio Visual Research*, (4).
- Li, K. (2004). Education and the Reform of Basic Education. *Education in Guangxi*, (17).
- Li, X. (2006). Full Case Based Teacher Training Model. *Audio Visual education Research*, (12).
- Liu, P. (2010). The practice exploration of primary and secondary school education informationization in Pudong New Area, Shanghai. *Education measurement and evaluation*, (12).
- Lu, X. (2002). *Informatization in China*. Beijing Publishing House of electronics industry Department of State Beijing: China price press.
- Ma, L. (2002). *Theory and Practice of Modern Education Technology*. Changchun of Northeast Normal University Press.
- Nan, G. (2002). Some theoretical and practical problems of educational informationization construction (part I). *Audio Visual Research*, (11).
- The Ministry of education. (2012). On issuing the Guide notice for \$literal years old children's learning and development. *Early Childhood Education*.
- Wang, J. (2012). The Pre-school Education Informationization Evaluation Index System's Construction. *Measurement and Evaluation in Education*, (1).
- Wu, S. (2009). *A method for determining the right set of educational evaluation index*, (10).
- Yang, B., & Sun, Y. (2011). The building of the performance evaluation model of rural basic education informationization. *Chinese audio-visual education*, (2).
- Yang, X., & Li, L. (2005). Complete Educational Informationization. *Audio-visual education research*, (1).
- Yao, X., & Hua, W.. (2011). A comparative study of domestic and international children's search engine. *Books and informationization*, (3).
- Zhang, J. (2006). Children situation analysis and countermeasure research on informationization literacy education. *The Software Guide*, (8).