

**Analysis of rural middle school library and resource utilization influence factors
based on ISM**

The investigation and analysis of rural middle school in J County Based on S

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Abstract : The library is an integral part of school education, was also a school, one of the essential conditions of education. Although rural middle school library in recent years have made great strides in resources allocation development and progress, but there is a low utilization ratio of resources, books, Librarian (room) of the low rate of, its educational function does not really reflect. Based on empirical data of a rural middle school library-research as a research basis, using interpretative structural model for rural middle school library and resource utilization factors are analyzed.

Key words: rural middle school; library; resource utilization

Fair Education is the foundation of social equity, is the key to promoting education fair. Achieving Education Fair is the premise of the rational allocation of educational resources, the rational allocation of educational resources is a matter of ensuring the realization of fair education opportunities. However, too many people focus on the rational allocation of educational resources to achieve equitable educational opportunities at the same time, it ignores the legitimate concerns of the use of educational resources. Therefore, to explore the use of educational resources is very important. In view of this paper, in terms of the use of library resources in rural middle schools to explore the use of educational resources, analysis of factors influence the use of library resources, improve education resource utilization is of great practical significance.

1.Current Situation in Rural Middle School Library

This study selected S J province less developed counties in the three rural high school library for the study. Through access to library administrators and student survey questionnaire a total 270, questionnaires, 232, to understand the basic situation in rural middle schools in the library resource construction. According to three high school survey data in 2012 to 2014, three years of analysis, although rural middle school library has made

significant progress in terms of construction and development, the extent of the use of library resources is not high is a serious problem.

1.1 Library construction

In the country to promote the balanced development of rural compulsory education background, the rural middle school has made great progress in the development and construction of library resources. First of all, in terms of the amount of books, from the data in the table show that, three schools each year in the library's investment in growing from 2012 to 2014, the total collection of books is also growing. Secondly, the construction of the library in terms of area, three schools library, a reading room with a total area reached 70 square meters or more. According to the requirements of "rural middle and primary school building standards", 12 classes of 600 junior high students of Library and reading room with a total area of 120 square meters, of rural middle school library in our country has been building towards the achievement of our nation-building standard requirement. Finally, in terms of the students ' average share, average occupancy rate has also increased in the following table 2014 three high school student books occupancy rate has reached 60 or more. According to the 2003 promulgated by the Ministry of education of "the primary and middle school library (room) procedures (revised) "stated that junior high school class 1 and class 2 per capita collection volume were 40 / and 25 / person. Visible rural students occupy the number of books per student has reached the standard. This fully shows that in our country the opportunity to promote the rational allocation of educational resources to achieve a balanced development of compulsory education to achieve educational equity has made some progress and development.

Table 1 2014 county libraries in rural middle school situation

	A school			B school			C school		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Student (Person)	525	428	324	307	208	220	262	242	218
Total collection (volumes)	15096	19291	19542	12481	12791	18596	10595	15100	15100

In student									
capita	28	45	60	40	61	84	40	62	69
(copies/ person)									
Library, reading									
room with a	84	84	84	70	70	70	84	84	84
total area (m ²)									

1.2 Who cares little

According to data in Table 1 shows that, although the Government to focus on the rural edge of poverty, minority areas in terms of the allocation of resources, invest a lot of money has greatly improved the conditions of rural education, but the majority of the use of library resources in remote areas of rural high school discomfort to Hall (room) low prominent problem. These idle and caused great waste of educational resources. We can see from Table 2, the students have not been to the library in 2014 basically as high as 67.9%, and usually go to the library to read proportion is rare. Visible library resource utilization is very low, the library has become a forgotten corner of the student.

Table 2 2014 county rural middle school students to the number of library statistics

frequency	Complex
Once or twice a month	23.9%
Once or twice per semester	8.2%
Basically have not been	67.9%

Many factors influence the utilization of book resources in rural middle school and all factors are in direct, indirect, complicated relationship of cause and effect, exclusion. Therefore, this paper research results and real data collected on the factors affecting high school library resource utilization were screened with a structural model to explain the analysis of all relevant factors, in the final analysis the reason for the low utilization of library resources influence.

2. Interpretative structural model profile

Interpretative structural modeling (referred ISM). Professor J. Felt by the China Economic System in order to study complex social issues and the development of research methods. Its characteristic is to clarify the complex system of several subsystems, and then take advantage of experience, knowledge and computer, the system will eventually form a multi-level hierarchical structure model for explaining the relationship between the various elements of a computer. Its working procedures: (1) to establish the system elements relational table based on practical experience; (2) the establishment of the adjacency matrix A based on the relationship between factors; (3) On the basis of the obtained adjacency matrix reachability matrix M based on matrix algorithms ; (4) up to the decomposition matrix M, the establishment of AHP model; (5) establish a structural model to explain. ^{[i] (p.56-57)}

2.1 The main factors that influence the use of Rural Middle School Library

Upon inquiry documents and questionnaires on many factors affect the use of rural high school library resources were analyzed, and finally summed up 11 major factor, as shown in Table 3.

Table 3 Factors in Rural Middle School Library Resource Utilization

	Number	Factors	Expl anati on
student factor	S1	Student interest in reading	Are students interested in extracurricular reading
	S2	Students read Way	Have an impact on the use of library resources through different ways of reading, such as: student through mobile phones, computers, rent book, to buy their own, the family collection, borrowed from a friend and so on.
	S3	The amount of student work, academic pressure	Size of the amount of student work, academic pressure would not affect students' reading time on the use of library resources have a certain influence.

school surroundings	S4	To carry out school activities	Are schools often hold reading salon, reading the essay, the author seminars, book reports and other reading activities will have an impact on the use of library resources.
	S5	School Administrators school idea	Are managers too much emphasis on the enrollment rate of students ignoring other developments have an impact on the use of library resources.
	S6	School environment	Whether the school has a strong learning environment have an impact on the use of library resources.
Collect ion of books	S7	Lending System and Management	Lending System and Management (including the number of books to borrow, renew management, etc.) affect the use of library resources.
surroundings	S8	Lending facility and the environment	Whether to create a harmonious and elegant reading environment to improve library resources and the utilization.
	S9	The type and quantity of books	Variety and quantity of library resources and student development if matched with a reasonable guarantee whether use have some impact on library resources.
	S10	Librarian literacy	Librarians work ethic and communication skills, business knowledge and skills of librarians, librarians sense of responsibility affect the use of library resources.
teacher factor	S11	Teaching Thought	Stimulate students' interest in learning, it has an impact on the use of library resources.

2.2 The establishment of logical relationships among factors, the establishment of the adjacency matrix A

It is interconnected between the 11 major factors that influence each other. Middle School library resources factors set number m, which with a $m \times m$ square matrix represents a logical relationship between the elements, namely the adjacency matrix A (see Table 2). If the elements of S_i to S_j impact, the matrix element a_{ij} is 1, when the elements S_i no effect on S_j , matrix elements a_{ij} is 0. ^{[ii] (p.58-59)} that is

$$a_{ij} = \begin{cases} 1 & \text{When the pair of } S_j \text{ impact,} \\ 0 & \text{When the pair of } S_j \text{ no effect} \end{cases}$$

Table 2 adjacency matrix A

a_{ij}	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
S1	0	1	0	0	0	0	0	0	0	0	0
S2	1	0	0	0	0	0	0	0	0	0	0
S3	0	1	0	0	0	0	0	0	0	0	0
S4	0	1	0	0	0	1	0	0	0	0	0
S5	0	0	0	1	0	1	1	0	1	0	0
S6	0	0	0	0	0	0	0	0	0	0	0
S7	0	1	0	0	0	0	0	1	1	1	0
S8	0	0	0	0	0	0	0	0	0	0	0
S9	0	1	0	0	0	0	0	0	0	0	0
S10	0	0	0	0	0	0	0	0	0	0	0
S11	1	1	1	1	0	1	0	0	0	0	0

2.3 Reachability matrix M is obtained by calculation

Adjacency matrix A reflect the direct relationship between the factors, reachable through the matrix operation can be shown indirectly related factors. Using Boolean algebra rule (that is, $0 + 0 = 0, 0 + 1 = 1, 1 + 0 = 1, 1 + 1 = 1, 0 \times 0 = 0, 0 \times 1 = 0, 1 \times 0 = 0, 1 \times 1 = 1$) for computing, calculated as: $(a + I)^n = (a + I)^{n-1} + I$, then $M = (a + I)^n$, where I is the identity matrix, n is a power, in accordance with this calculation methods reachability matrix M =

(A + I) 3 = (A + I) 4 (Table 3).

Table 3 reachability matrix M

m_{ij}	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
S1	1	1	0	0	0	0	0	0	0	0	0
S2	1	1	0	0	0	0	0	0	0	0	0
S3	1	1	1	0	0	0	0	0	0	0	0
S4	1	1	0	1	0	1	0	0	0	0	1
S5	1	1	0	1	1	1	1	1	1	1	0
S6	0	0	0	0	0	1	0	0	0	0	1
S7	1	1	0	0	0	0	1	1	1	1	0
S8	0	0	0	0	0	0	0	1	0	0	0
S9	1	1	0	0	0	0	0	0	1	0	0
S10	0	0	0	0	0	0	0	0	0	1	0
S11	1	1	1	1	0	1	0	0	0	0	1

2.4 Decomposition up matrix M, the establishment of AHP model

First, the introduction of the definition and set up the first set. Wherein R & It set up (Si) matrix means up to the row corresponding to the elements Si, it contains a set of matrix elements corresponding to the elements of the column. Representative elements Si arrive elements. The first set of Q (Si) is in the reachability matrix elements Si corresponding column, contains a collection of matrix elements 1 corresponding to the line elements. C (Si) are both factors that affect Si Si has been affected by the composition of the joint assembly. ^{[iii] (p.65-71)}

According to Table 4 - Table 7, followed by obtaining the most advanced feature set L1-L5, so that it can be divided into different levels of factors. Table 4 shows the calculated value of the first stage of R (Si), Q (Si), C (Si), if R (Si) = C (Si), the R (Si) is located at the highest level of factors, characterized It is: it can be reached from other factors factors, other factors that can not be reached from the factors. According to the above method can be obtained at all levels of the highest levels of factor set. The following table

Table 4 Feature Set A first layer analysis

Si	R(Si)	Q (Si)	C (Si)
S1	1, 2	1, 2, 3, 4, 5, 7, 9, 11	1, 2
S2	1, 2	1, 2, 3, 4, 5, 7, 9, 11	1, 2
S3	1, 2, 3	3, 11	3
S4	1, 2, 4, 6	4, 5, 11	4
S5	1, 2, 4, 5, 6, 7, 8, 9, 10	5	5
S6	6	4, 5, 6, 11	6
S7	1, 2, 7, 8, 9, 10	5, 7	7
S8	8	5, 7, 8	8
S9	1, 2, 9	5, 7, 9	9
S10	10	5, 7, 10	10
S11	1, 2, 3, 4, 6, 11	11	11

L1=S1、 S2、 S6、 S8、 S10

Table 5 Analysis of the second layer B Feature Set

Si	R (Si)	Q (Si)	C (Si)
S3	3	3, 11	3
S4	4	4, 5, 11	4
S5	4, 5, 7, 9	5	5
S7	7, 9	5, 7	7
S9	9	5, 7, 9	9
S11	3, 4, 11	11	11

L2=S3、 S4、 S9

Table 6 Analysis of the third layer feature set C

Si	R(Si)	Q (Si)	C (Si)
S5	5, 7	5	5
S7	7	5, 7	7
S11	11	11	11

L3=S7、 S11

Table 7 Analysis of the fourth floor feature set

Si	R (Si)	Q (Si)	C (Si)
S4	5	5	5

L4=S5

AHP obtained by factor 4 layers, the first layer factors for the students' interest in reading, students read way, the school learning environment, loan facilities and the environment, literacy librarian; second layer factors as the amount of work students and academic pressure Books collection type and quantity; the third layer factors lending institution and management, teaching thinking; fourth layer is the idea of running school administrators.

2.5 Establish interpretive structural modeling

Through the analysis of the influence factors of rural middle school library resources, identified 4 factors affect relations between them as shown in Figure 1.

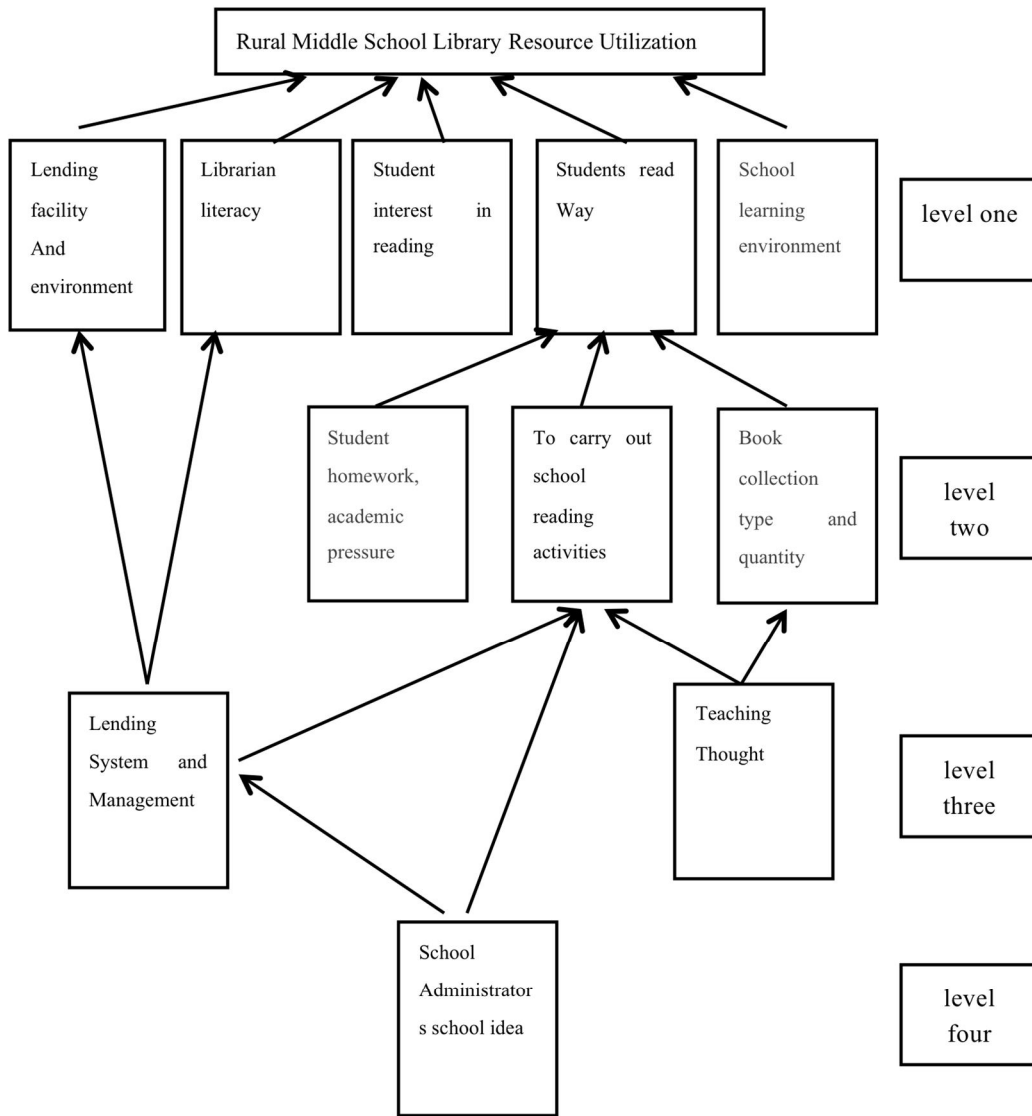


Figure 1 Rural Middle School Book Resources structural model to explain the impact of factors

First impact factor reflects the surface of library and resource utilization factor was followed by three layers factors of factors, not the underlying factors of library and resource utilization.

The second layer and the third layer is an intermediate layer, the amount of work students and academic pressure, and to carry out the type and quantity parameters books school activities for students to read pathway

has a direct impact, indirect impact on the further use of library resources work. Lending System and the management of the school library activities, the loan facilities and the environment and librarians have a direct impact on literacy.

The fourth layer is the source layer, which is affecting rural middle school library resources utilization factor of the root causes is the low use of library resources Incarnation.

3. Conclusions and recommendations

By reasoning and calculations eventually be explained structural model on library resources utilization factors, clear surface direct factor in high school library resource utilization, the intermediate layer factors and underlying fundamental factors that distinguish the relationship between the major influencing factors for rural high school library resources utilization analysis provides a method.

Therefore, the factors that affect the utilization of library resources are many and complex and hierarchical relationship and mutual influence between them. Therefore, in view of the above conclusions, the study makes the following recommendations.

3.1 Change the concept of education

School education concept in the final analysis is an extension of school administrators and educational philosophy embodied. The ability to implement scientific and rational concepts of education, the key depends on the concept of education managers. The study showed that school administrators are the most fundamental factors in rural middle school library Utilization. Therefore, as a rural school administrators must break the old traditional concept of management thinking student in the school of experience summary of the development of education, based on the courage to explore, theoretical innovation, and establish a new educational concept for overall development of students. Only in this way, in terms of resource utilization, we can maximize the use of resources; in education, comprehensive development of talent, the opportunity to finally achieve educational equity.

3.2 To strengthen the management of library

The intermediate layer has a direct impact on the appearance of layers, improved library management to improve aspects of middle school library resource utilization has a positive effect. Library scientific management on the one hand help to improve the utilization of library resources, on the other hand can provide better quality of service for teachers and students. On all aspects of library management to standardize management and standardization to ensure quality and efficiency of the books work, but also can improve the utilization of library

resources. The author believes that to improve the management of the library, to be starting from the current status quo, to the teachers and students of demand-oriented, reasonable change service functions; a realistic technical conditions as a means to strengthen the construction of e-books, to achieve efficient and standardized management .

3.3 Change teachers' ideas

In teaching activities, due to the factors such as teaching ideas and habits of teachers, and rather often cured in the teaching process, focus only on the enrollment rate of students while ignoring the overall development of students. In this case, the teacher must have the courage to break the shackles of ideology, ideologically fully aware of the development of quality education, recognizing the broad student extracurricular books, on the one hand can enhance the vastness of students 'thinking, agility, logic, improve students' thinking ability; on the other hand to improve students' reading and writing skills. Thus in the teaching process is also conducive to teaching, but also conducive to the overall development of students.

3.4 To create a good study environment

In order to better achieve overall development of students in the teaching process, schools should give full play to the important role of school in the cultivation of talents, not just one-sided pursuit of enrollment rate of such short-sighted behavior. School In teaching activities, to reading activities into teaching part, in the specific implementation process, schools can conduct reading activities as an indicator of a measure of teaching quality to measure teacher performance, in order to promote teachers stimulate students' interest in reading in particular the teaching process, teaching reading to carry out activities for students to build a good study atmosphere.

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