

DIAGNOSTIC ASSESSMENT TRY-OUT AS AN EFFORT TO IMPROVE STUDENT READINESS IN TAKING NATIONAL EXAM IN SOLOK, INDONESIA

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***Abstract.** In Indonesia, the MONE (The Minister of National Education) has been implementing National Exams for some subjects at the Primary and Secondary School level and setting up higher minimum competency grade in each year (3.01 in 2004 and 4.01 in 2005) for students to pass the exams. This decision has made all components of education to take consideration seriously about the quality of education in each different region. This paper describes one of the efforts done by the Distance Education Teacher Training Development Center, Bandung to initiate a special program to improve the quality of education effectively and comprehensively through an integrated approach in both programs and the community involvement which has been tried-out in Solok, West Sumatera Indonesia. This paper explains a model of Diagnostic Assessment in some subjects, the implementation of the workshops and training, and the try outs that were implemented at Primary Six, Form three and Form six in different subjects: Mathematics, English and Bahasa Indonesia, Economics. The results and the findings of the program and the recommendations for future project are also presented in this paper.*

INTRODUCTION

Indonesia, as a developing country, strives continuously to improve the quality of education. The movement toward the higher quality in education has been raised through the change of curriculum into a Competency-Cased Curriculum (KBK, 2004), and more importantly the existence of a new Directorate General of Quality Improvement for Educators and Educational Institutions which have been implemented since the end of 2005 (Ditjen Mutendik, 2005). Struggling under the shift from a centralized concentration of power development to decentralization, the government of Indonesia through the Ministry of National Education (MONE) has done some efforts to maintain the existing education development achievement, to prepare high quality human resources, and to make some adjustments toward the national education system in line with the implementation of decentralization. In the era of decentralization and autonomy, the involvement of all components in the province or district becomes very important and plays strategic roles in the improvement of the quality of education not only substantially but also the improvements on the support and commitment from the

community in each region. Besides that, The Minister of National Education Indonesia has been implementing National Exams for some subjects at Primary and Secondary School and setting up higher minimum competency grades for each year (3.01 in 2004 and 4.01 in 2005), for students to pass the exams. In the year of 2004, 89.88% of Upper Secondary school students passed the exam (Balitbang, 2004). At the moment an awareness is aroused all educational components through the involvements in the community to improve the quality of education in each region.

Based on these reasons, the Teacher Training Development Center Distance Education Bandung (PPP-G Tertulis, Bandung), as an implementation unit of the Directorate General of Quality Improvement of Educators and Educational Institution, initiates a special program to improve the quality of education effectively and comprehensively through an integrated approach. The program includes the community involvement. The first try-out of the program was implemented in Solok, West of Sumatera Indonesia. The developed model would be implemented nationally to improve the quality of education in Indonesia.

EDUCATIONAL QUALITY IMPROVEMENT PROGRAM

The quality improvement program in this project has been done to improve the quality of education in the districts which involve all educational components in the region. The program of the quality improvement involving all school components, such as supervisors, supervisory council, school principals, teachers and students of Primary 6, Form 3, and Form 6. The main goals of the program are:

1. To improve the managerial and substantial skills of the workshop participants in managing education activities appropriate to the roles, duties, and functions of each components.
2. To build commitment of all educational components in Kabupaten Solok, Propinsi Sumatera Barat to strive for improving the quality of education in their region.
3. To improve the student achievement in the national exams in Kabupaten Solok, Sumatera Barat.
4. To develop a model for improving the quality of education integrated and comprehensive in the region and national.

DIAGNOSTIC ASSESSMENT MODEL

The model commenced with the selection of the appropriateness of the content from the student-based. The objectives were prepared according to Bloom's Taxonomy of setting procedure: the Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. However, for elementary school level only KCA were utilized. The next step undertaken was the development of the screening test and its pilot test. The screening tests then were marked and summarized in the summary sheet. Errors reflected at the sheets were analyzed by the teacher meticulously. From the reflection of the errors, teachers were able to task analyzed whether the errors were due to misconception, lack of knowledge on the basic operation or algorithm, or poor computational skills, etc. Then they set objectives upon the items with most errors and were deemed to be most difficult. Diagnostic test was promised on the most difficult items that manifested on the analysis of the results. The special diagnostic test was set when there was a display of the errors. However, if errors were not prevailed, then the teacher may opt to continue his/her teaching to the new skills to be developed or she/he may offer alternative assessment for enrichment purposes. Interview was conducted to pupils having committed to the same errors in order to trace the fact or the causes of errors reflected in the summarized test results. This aspect would give the teacher evidence as to the root cause of errors. From what had transpired during the interview, outcomes that were drawn from the learners would feed the mentors to plan out the next teaching strategies to help the learner enhanced capabilities of filling those gaps. Remedial teaching or enrichment activities might be done by the teacher in order to fulfill the objective. The full model of diagnostic assessment was given, but the teacher was given the leeway to adopt his/her model that was suited to his/her class.

THE STRATEGIC PLAN OF THE IMPLEMENTATION

Training Programs. The implementation of the program in improving the quality of education in District of Solok includes the planning, implementation, and the analysis of the program. The program was started with mapping the data and educational potential in Solok, including data about schools, teachers, principals, and educational administration in schools in Solok, and followed by schools in other districts in the Province of West Sumatera. The education potential includes educational resources in

Solok and all the educational staff, board members, and school committees. The implementation of the workshop was conducted to arrange the program based on the data and the existence of the potential the schools have in Kabupaten Solok. The workshop program includes, improving the process of teaching and learning, improving the output, and arranging an Action Plan by each component involved. All programs were implemented in education and training plans (DIKLAT). The results of the workshops produced five different kinds of quality improvement education and training as shown in Table 1. The diagnostic tests were developed by the teachers after the training. At the end of the training session, all participants concretised an Action Plan for the quality improvement in education. Teachers of the same subject work together to analyze students' problems and then develop diagnostic tests for each level (Primary 6, Form 3 and Form 6).

Table 1
Types of Quality Improvement Training Program

No	Types of Training and Education	Participants
1	Educational Training in Improving the school Management	Department of Education Staff, Board
2	Training Educational in Leadership and Managerial	School Supervisors
3	Education Training in Leadership and Managerial	School Principals
4	Educational Training in Developing tested Evaluation Instrument (test items)	Teachers who teach subjects which are National Exam (Mathematics, English, Bahasa Indonesia, Social Science)

Implementation of Diagnostic Test. Two diagnostic tests were developed and then implemented in ten Primary schools, 15 Lower Secondary Schools, and ten Upper Secondary Schools with the following subjects: (1) Primary School (SD): Bahasa Indonesia, Mathematics, Civic and Social Science, and Science, (2) Lower Secondary (SMP): Bahasa Indonesia, English, Mathematics, (3) Upper Secondary School Science (SMA): Bahasa Indonesia, English, Mathematics, (4) Upper Secondary School Social Science (SMA): Bahasa Indonesia, English, Mathematics. The results of the test then were analyzed.

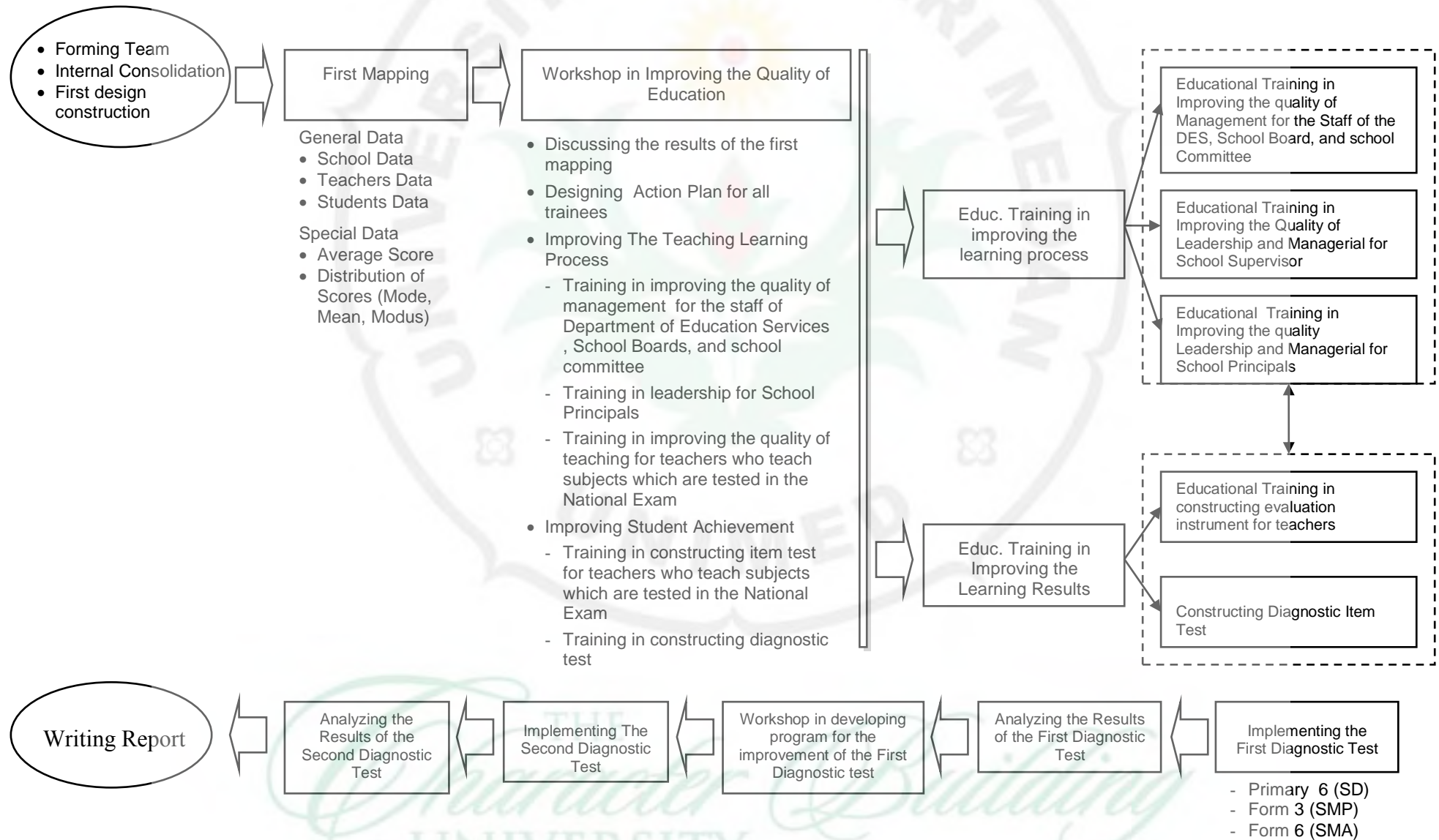
Improvement Programs

The improvement program was done by the teacher based on the results of the diagnostic tests given. The programs were directed towards the concepts that became problems to most students. At the end of the workshop all participant teachers redeveloped the Action Plan for improving the results of the tests. The scenario of the program could be seen in the next page.

RESULTS AND DISCUSSION

The District of Solok is one of the districts in West Sumatera in the mountainous area of Bulit Barisan. In this district, the quality of education is still far away behind other regions. Based on the result of the national exam 2005, Solok ranked 17 among the 19 districts in the Province of West Sumatera. This shows that the student achievement in this district was very low. One of the problems in education in this region is that the educational component of the Department of Education Services has not yet optimally managed the education and the community involvement in education were not culturally implemented.

THE SCENARIO OF THE IMPLEMENTATION PROGRAM IN IMPROVING THE QUALITY OF EDUCATION



1. The Image of the Schools in District of Solok

The data for the school image was collected from eight primary schools, 13 lower secondary schools, and nine upper secondary schools in four components: Educational Management (EM), Teaching and Learning Processes (TLP), Human Resource Development (HRD), and Life Environmental Facilities (EF). Based on the data, the image of the schools in Kabupaten Solok is shown in Table 2, 3, 4. In general, the school image in District of Solok for primary school level is enough.

Table 2

***School Image in the District of Solok, Province of West Sumatera
Primary School Level***

No.	School Code	Job Component				Score	General Image
		EM	TLP	HRD	EF		
1.	SD 1	2,22	2,28	2,26	2,84	2,37	Enough
2.	SD 2	1,14	0,54	0,67	2,06	1,12	Bad
3.	SD 3	3,11	2,53	2,40	2,58	2,66	Good
4.	SD 4	2,81	2,68	1,49	2,75	2,41	Enough
5.	SD 5	2,80	2,10	2,02	2,65	2,37	Enough
6.	SD 6	3,40	2,14	1,71	3,21	2,84	Good
7.	SD 7	2,33	2,33	2,30	2,60	2,38	Enough
8.	SD 8	3,57	3,31	2,79	3,25	3,23	Good

Expl: < → 1,76 (bad)
 1,76 → 2,50 (enough)
 2,51 → 3,25 (good)
 > → 3,25 (very good)

School image for Upper secondary level in general is enough. There is only one school shows very good image and one school shows a bad image. When we compare the images of the three school levels, it shows that the lower secondary school level is better than the other two levels. Primary school level shows the lowest position in their school images.

Tabel 3***School Image in the District of Solok, Province of West Sumatera******Lower Secondary School Level***

No.	School Code	Job Component				Score	General Image
		EM	TLP	HRD	EF		
1.	SMP 1	3,91	3,75	3,63	3,42	3,69	Very Good
2.	SMP 2	4,00	3,80	3,66	3,36	3,73	Very Good
3.	SMP 3	3,76	3,61	3,75	3,53	3,67	Very Good
4.	SMP 4	2,89	2,55	2,34	2,37	2,55	Good
5.	SMP 5	3,36	2,78	2,06	3,36	2,86	Good
6.	SMP 6	3,09	2,84	2,23	3,01	2,78	Good
7.	SMP 7	3,04	2,49	2,40	2,79	2,67	Good
8.	SMP 8	3,24	2,48	2,91	3,21	2,95	Good
9.	SMP 9	3,48	2,77	2,61	3,24	3,01	Good
10.	SMP 10	3,23	3,06	2,47	3,08	2,95	Good
11.	SMP 11	3,80	3,74	3,56	3,30	3,62	Very Good
12.	SMP 12	3,43	3,68	1,49	3,09	2,91	Good
13.	SMP 13	3,44	2,42	2,59	2,47	2,75	Good
14.	SMP 14	2,76	2,04	2,20	2,43	2,35	Enough

The school image for Lower secondary school level in general is good. Only one school has condition “enough”.

Table 4***Schools Image in the District of Solok, Province of West Sumatera******Upper Secondary School Level***

No.	School Code	Component				Score	General Image
		EM	TLP	HRD	EF		
1.	SMA 1	3,50	2,62	2,13	2,65	2,73	Good
2.	SMA 2	3,42	2,60	2,67	3,09	2,94	Good
3.	SMA 3	2,90	1,92	2,52	2,11	2,38	Enough
4.	SMA 4	3,67	3,41	3,32	3,45	3,46	Very Good
5.	SMA 5	3,34	2,46	0,96	2,32	2,27	Enough
6.	SMA 6	1,62	1,92	1,44	1,45	1,61	Bad
7.	SMA 7	3,01	3,13	2,69	3,31	3,02	Good
8.	SMA 8	2,32	1,26	2,48	1,58	1,93	Enough
9.	SMA 9	3,02	2,24	2,11	2,54	2,48	Enough

2. The Image of the School Principals in District of Solok

The image of the school principals in District of Solok were taken from eight primary schools, 14 principals of lower secondary level, and nine principals of upper secondary level. The data were collected using evaluation instrument of seven competencies, those are School Principal as (1) **Manager**, (2) **Leader**, (3) **Entrepreneurship Developer** (4) **Program Creator**, (5) **Educator**, (6) **Administrator**, and (7) **Supervisor**. The results are shown in Table 5, Table 6, and Table 7.

Tabel 5

*School Principals Image in the District of Solok, Province of West Sumatera
Primary School Level*

No.	School Code	The portrait of the Principal as							Score	General Image
		Mn	Ldr	Eps	Crt	Edu	Adm	Spv		
1.	SD 1	1,18	2,00	2,00	2,60	1,80	3,00	1,29	1,92	Enough
2.	SD 2	0,53	0,53	0,22	1,80	0,30	2,14	0,00	0,74	Bad
3.	SD 3	2,65	3,71	1,61	2,80	3,80	4,00	3,14	3,09	Good
4.	SD 4	3,24	2,29	1,61	3,60	3,00	3,00	1,86,	2,61	Good
5.	SD 5	2,82	2,82	2,44	3,00	2,65	2,29	2,57	2,66	Good
6.	SD 6	3,12	3,71	3,39	3,40	3,40	2,29	3,14	3,21	Good
7.	SD 7	2,53	2,88	2,67	3,00	2,65	2,43	1,86	2,56	Good
8.	SD 8	2,65	3,53	2,00	4,00	2,80	3,57	1,00	2,76	Good

Mn = Manager

Ldr = Leader

Eps = Entrepreneurship

Crt = Creator`

Edu = Educator

Adm = Administrator

Spv = Supervisor

In general, the primary school principal image in primary school level in Solok is good.

Only one school principal is good and one of them has score enough and one is bad.

Tabel 6

***School Principals Image in the District of Solok, Province of West Sumatera
Lower Secondary School Level***

No.	School Code	The Image of the Principal as							Score	General Image
		Mng	Ld	Eps	Crt	Edu	Adm	Spv		
1.	SMP 1	3,82	4,00	3,78	3,60	4,00	4,00	4,00	3,90	Very Good
2.	SMP 2	4,00	4,00	4,00	4,00	4,00	4,00	4,00	4,00	Very Good
3.	SMP 3	3,67	3,63	3,50	3,33	3,83	3,76	3,81	3,65	Very Good
4.	SMP 4	2,16	2,67	3,07	2,27	1,02	1,33	1,29	2,04	Enough
5.	SMP 5	3,57	3,63	3,85	3,53	2,92	3,19	3,05	3,43	Very Good
6.	SMP 6	3,10	3,39	3,06	3,80	3,10	3,76	3,10	3,31	Very Good
7.	SMP 7	3,69	4,00	2,94	3,90	4,00	3,71	3,71	3,70	Very Good
8.	SMP 8	3,94	3,94	3,17	3,47	3,63	3,86	3,43	3,67	Very Good
9.	SMP 9	2,27	2,75	2,69	2,80	3,17	3,81	2,05	2,74	Good
10.	SMP 10	3,18	3,33	3,26	3,20	3,53	3,62	3,52	3,37	Very Good
11.	SMP 11	3,82	4,00	3,78	3,60	4,00	4,00	4,00	3,90	Very Good
12.	SMP 12	3,02	3,04	2,63	3,60	3,13	3,00	0,57	2,68	Good
13.	SMP 13	3,73	3,96	3,93	4,00	3,90	4,00	4,00	3,92	Very Good
14.	SMP 14	2,90	3,20	2,86	2,98	3,11	3,44	3,00	3,07	Good

In general, the image of the Lower Secondary School principals as shown in Table 7 is good. There was only one principal who has level enough in his image. Others are good and very good.

Tabel 7

***School Principals Image in the District of Solok, Province of West Sumatera
Upper Secondary School***

No.	School Code	The Image of the Principal as							Score	General level
		Mnj	Ld	Eps	Crt	Edu	Adm	Sps		
1.	SMA 1	2,88	2,65	2,22	3,00	2,55	3,71	0,71	2,53	Good
2.	SMA 2	3,47	3,41	2,67	3,80	3,30	4,00	1,86	3,20	Good
3.	SMA 3	3,24	3,18	2,89	2,80	3,45	3,29	2,57	3,07	Good
4.	SMA 4	2,65	2,71	1,39	3,80	2,65	2,71	2,29	2,55	Good
5.	SMA 5	3,00	3,47	2,50	3,40	1,55	2,86	0,71	2,57	Good

6.	SMA 6	2,35	2,59	2,78	2,60	2,50	3,00	2,71	2,64	Good
7.	SMA 7	1,29	0,29	2,22	0,60	2,00	2,43	1,00	1,36	Bad
8.	SMA 8	2,00	2,29	1,17	2,80	2,10	3,00	1,00	2,02	Enough
9.	SMA 9	3,18	3,82	2,22	3,80	3,15	3,00	0,86	2,86	Good

In general, the image of the school principals in the Lower Secondary level shown in Table 7 was good. Only one school shows that the portrait of the school that is not good, one principal got enough and others are good. From the data, we found that there was a positive relationship between the image of the schools and the image of the School Principals.

3. Training in Improving the Quality of Education

Training in improving the quality of education was conducted in all education components in the district of Solok. The impacts of the training in improving the quality of education are:

- The growth of the awareness about the importance of improving the quality of education from the stakeholders in each region.
- The improvement of community participation in improving the quality of education.
- The principal, school supervisor, and teachers show a big effort to improve the quality of education by writing Action Plan. There were 31 Action Plan from school principals, 23 Action Plan of Bahasa Indonesia teachers, 22 Action Plan English teachers, dan 24 Action Plan from mathematics teachers.

From the results above, it was found that there was an improvement in the implementaion of the education in District of Solok West Sumatera Sumatera Barat toward the goals that should be achieved.

4. The Result of the Diagnostic Tests

The diagnostic tests are test designed to know which competencies which have not been mastered by students and what is the cause of the problem. The topics in the diagnostic test were refered to the minimum standard of competency that should be achieved by student in certain level. The diagnostic tests were conducted at the same time in the schools chosen. The test materials include all subjects which will be tested in the

national exam in each level: primary, lower and upper secondary schools. The diagnostic tests were done twice on 10 September 2005 and 18 November 2005.

Table 8, 9, dan 10 show the percentage of the minimal competency that have been achieved by students (two tests).

Tabel 8
The Percentage of the Student's Minimal Standard of Competency
Primary School Level

No.	Subjects	The Result of the Diagnostic tests		Explanation
		First	Second	
1.	Bahasa Indonesia	63,21	88,34	Increase
2.	Civic education dan Social Science	71,83	45,50	Decrease
3.	Mathematics	46,94	53,76	Increase
4.	Science	51,26	53,43	Increase

Tabel 9
The Percentage of the Student's Minimal Standard of Competency
Lower Secondary School Level

No.	Subject	The Result of the Diagnostic Test		Explanation
		First	Second	
1.	Bahasa Indonesia	45,28	58,87	Increase
2.	Bahasa Inggris	35,76	25,66	Decrease
3.	Matematika	27,07	35,68	Increase

Table 10
The Percentage of the Student's Minimal Standard of Competency
Upper Secondary School Level

No.	Subject	The results of the Diagnostic Tests		Explanation
		First	Second	
1.	Bahasa Indonesia	48,37	66,93	Increase
2.	English	41,24	25,68	Decrease
3.	Matematika (for Science Major)	21,74	31,44	Increase
4.	Economics (Social Science Major)	33,06	35,57	Increase

In general, in each subject there is an increment in the percentage of competency, but increment was varied. In primary school level, the score of Civic and social studies and English showed a decrement. This happened because there was a change in constructing the item test of the diagnostic, so the reliability and the validity of the test were very low. Although there was an increment in the student achievement in mathematics, the result was still below the boundary of the minimum competency of the national exam. For all subjects that have not been achieved the minimal competency, the third diagnostic tests were needed especially in the secondary level. The third diagnostic test will be done after the teachers get training in clinical teaching and writing items for the Diagnostic Assessment.

SUMMARY

Through the implementation of the programme in improving the quality of education in the District Solok, it can be summarized that:

1. There was an awareness of all the stakeholders in education in this region. This could be seen by the commitment among all educational components in the region.
2. From the map indicating the potential in District of Solok, the policy in education can be directed toward the improvement of the existing potential.
3. Through this programme, the managerial capability of all staff in the Department of Education Services, School Supervisors and School Principals could be improved, appropriate to the roles, tasks and the functions of each staff member.
4. The integrated programme of the improvement of the education quality can be implemented in all countries, but the implementation needs an action of perfection and improvement especially in constructing a diagnostic assessment instrument. The instrument must be constructed together by involving all teachers who teach subjects for the national examinations.
5. The collaborative work in implementing the establishment of the programme among the staff in the MOE and the region could be tied together in order to help accelerate the improvement of the quality in the region.

6. The model of the programme implementation in the quality of education which is integrative and comprehensive can be done well by the help of all educational components involved.
7. The encouragement of public participation and all educational components in the District of Solok can help the implementation of the programme in improving the quality of education smoothly and effectively.

RECOMMENDATIONS

Some recommendations of implementing the programme of improving the quality of education for the future innovation:

1. A need for further investigations in designing the programme (planning, implementing, monitoring, evaluating the programme) and the budget needed.
2. A need to remap the educational potentials so that all educational components will be represented and active.
3. A need to conduct workshops in constructing the standardized schedules for the diagnostic tests which are valid, reliable and have good test qualities.
4. A need for consistency and estimation in implementing the program so that the programme fits to the school calendar in the region.
5. A need for more time to implement the diagnostic tests. If possible the diagnostic tests should be directed toward the scenario of the implementation of the National Examinations.

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