ADOPTING 21ST CENTURY CURRICULUM THROUGH SEA DIGITAL CLASS

Brunei Darussalam
Cambodia
Indonesia
Lao PDR
Malaysia
Myanmar
Philippines
Thailand
Timor Leste
Vietnam
DAGNOSTIC REPORT

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EXECUTIVE SUMMARY

Adopting 21\textsuperscript{th} Century Curriculum through SEA Digital Class – Phase 1

Diagnostic Test as the base line study had been conducted to mapping student skill in Mathematics and Science and readiness for adopting 21\textsuperscript{st} Century Skills. The student readiness category determined by the score they gained during the test. These were 3 categories: Ready for score \(\geq 70\), ready enough for score 51-69 and not ready for score \(\leq 50\). The targets were students year 5 and year 8 in Brunei, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Thailand, Timor Leste, and Vietnam. SEAMEO SEAMOLEC, SEAMEO QITEP in Mathematics and SEAMEO QITEP in Science collaboratively prepared the items and platform of the tests, and executed the tests in those ten countries. The Ministry of Education from each participated country assigned their respective schools, and students to take part in the diagnostic test. The three Centres team went to each respective assigned school to conduct a series of workshop for teachers and tests for the students of grade 5 and grade 8.

Overall data found that most of the SEA students’ Year 5 were “not ready” yet both for Science and Mathematics, even though certain countries showed level ready. On the other hand, the situation was different with SEA student year 8, which showed the level “ready enough” to adopting the 21\textsuperscript{st} Century Curriculum in their future Mathematics and Science learning process. Admittedly the students in every participating country have different strength and weakness in regard to these subjects.

For Mathematics subject, when all data of students were combined, clearly the students have problems in doing the MaRWA test. In this study, we identify the level of difficulties of items based on students’ responses. The level of difficulties was based on the proportion of the number of students who correctly answer the items and the number of students. If the value is less than 0.3, then the items belong to difficult category. Moderate items have the value between 0.3 and 0.7. If the value is more than 0.7, the item is put in easy categories. Regarding to Mathematics, we found that grade 5 students still have difficulties doing the measurement, ratio and proportions, and pattern and relationship, and data handling. Similarly, students at grade 8 also found difficulty in the topic coverage of graphing equation, measurement, ratio and proportions, and data handling. To some extend students had difficulties giving their explanation. Students also rarely scratched or drew anything on the figures given in the items.

We identify that both grade 5 and grade 8 students in Vietnam and Thailand were relatively ready in learning mathematics as compared to their counterparts in other 8 countries involved in this study.
Science subject has different determination in the formulation of the test. The source of the questions was based on Higher Order Thinking Materials that aligned with the principals of 21st Century Curriculum. The proportion of the questions was determined according to the Revised Bloom’s Taxonomy (2001) where cognitive process was defined into six categorized. These are: Remember (C1), Understand (C2) Apply (C3), Analysis (C4), Evaluate (C5) and Creating (C6). For this Diagnostic Test, the cognitive skill of the C6’s category was not considered. In addition, the proportions of the number of questions in every categorization were differentiated between student year 5 and student year 8.

The initial results of Science subject showed that, in general, both student year 5 and student year 8 were less of cognitive skills for category C3 (Apply), C4 (Analyse) and C5 (Evaluate), while they have enough cognitive skills for C1 (Remember) and C2 (Understand). However the levels of cognitive skills in all categories were different from one country into others and also among students that participated in this test.

The data also identified, for some extends, students in Malaysia, Philippines, Thailand and Vietnam was better prepared in the science learning process.

Even though the proposed program was ICT based, in practical level, the Diagnostic Test was still being conducted in schools that have not equipped yet with the IT apparatus by implementing pen and paper test methodology. The team also detected that the strength of internet signals was one of fundamental factor that have to be considered, because this will interfere with the result of the test. However, almost all IT personnel assigned in schools possessed a very good skill in term of IT operation and procedure. Another factor that also may influence the result was the quality of question translation prior the test conduction. Certain schools required to translate the materials into local languages. For that purpose, SEAMEO QITEP in Science has asked the alumni to help the translation proses that will take considerably times that because not only language abut also the character of the letter that needed adjustment before it was uploaded into the Edmodo system.

The data presented, in regard to Diagnostic Test, can be seen as a starting point in which the country can be referred to enhance student’s cognitive competency in Science and Mathematics, as one of the fundamental aspects in 21st Century Curriculum beside interpersonal competency and interpersonal competency domain in which this Priority Area of number 7 has been agreed by the MoE of member countries to adopt their national education framework. The ultimate goal of this program is developing a regional standard of teaching and learning in Science and Mathematics that are generic to all to SEAMEO member countries and represent the realities of the region considering national education policies, technology and learning context and condition as well as the regional vision of becoming a fully integrated community. The regional standard will consist of development suitable measurements and formulate an acceptable level of new approaches, techniques and skills in Mathematics and Science teaching and learning in the region.
Furthermore, the next phase will cater not only Priority Area number 7 but also Priority Area number 2 for establishing a borderless education in which ICT as a platform usage in this program and Priority Area number 5 for Teacher Education Reform as this will integrate with the teacher continuing development program. Having said that, the continuous supports and consistent commitment from the Ministry of Education of SEAMEO Member countries is necessary to conduct further phases of this program and to conceptualize the philosophy of the 21st Century Curriculum that education for life and work.
ADOPTING 21\textsuperscript{TH} CENTURY CURRICULUM
THROUGH SEA DIGITAL CLASS – PHASE I

\textit{Rationale}

Records of the achievements of SEAMEO member countries in the subjects Science and Mathematics have shown an uneven and irregular trend. Considering the importance of these two subjects, particularly in the pursuit to promote a curriculum that truly addresses the realities and requirements of the 21\textsuperscript{st} Century and also to support of ASEAN integration, it is necessary to develop curriculums that respond to the needs and context of the countries of Southeast Asia. Refer to the large of the geographical cover as well as the huge number of teachers in the region, poses a big challenge in developing a curriculum that is practical, useful and functional.

To address this issue and the intention to cater the 7 priorities of SEAMEO Education Agenda 2015-2035, the initiative to conduct a program on ICT-based 21\textsuperscript{st} Century Curriculum for Science and Mathematics in the Context of Southeast Asia was being proposed. This initiative will focus on identifying learning domains in Science and Mathematics that are generic to all Southeast Asian countries and facilitate the realities of the region considering technology, national policies, learning contexts and conditions. The use of ICT will allow speedy and efficient transmission of Science and Mathematics contents and teaching-learning materials throughout the region. Utilization of ICT will leverage on the existing connectivity of students, teachers, schools and education institutions within SEAMEO member countries materialize the regional vision becoming a fully-integrated community. In the end, this process will help define what 21\textsuperscript{st} Century Curriculum truly means for the Southeast Asian countries.

Considering this initiative is a ground breaking program, it will take multi years to conceptualise the curriculum content, the mechanisms and the systems that are really applicable and adaptable to the local context and condition. Finally, this initiative aims to propose a strategic change in Science and Mathematics teaching and learning through maximizing the use of information and communications technology.

\textbf{Objectives}

a) To identify skills domain in Science and Mathematics that are responsive to the 21\textsuperscript{st} Century context of Southeast Asia.

b) To develop and disseminate pedagogical content and resources for Science and Mathematics based on identified skills sets.

c) To document processes, issues, and recommendations for consideration of appropriate education officials and decision-makers in Southeast Asian countries and in SEAMEO.
The aims

a) Develop a Learning Community System (LCS) as a virtual interactive education process on Science and Mathematics for teachers and students by utilizing 21st Century Curriculum concept and philosophy.

b) Fostering genuine and sustained communication among class, schools, countries through adopting the new approach and technique in delivering science and mathematics teaching mechanisms and process.

c) Promote student communication among member countries that provide opportunities to cultivate mutual understanding, diversity awareness and forming a global citizenship.

The methods:

a) Develop a suitability measurement of the science materials that will be used and establishment of Technical Domain Reviewers/Board of Academy
b) Formulate acceptability level of the new approaches, techniques and skills
c) Conducts a series of workshops include expert consultations and teachers professional development
d) Determine effective time framework and create a solid organisation structure project
e) Field examination and piloting
f) Assessment, Observation and Project Monitoring and Evaluation

Implementation phase:

1. **2015- Diagnostic Test as a baseline study** to mapping student skill in Mathematics and Science and readiness for adopting 21st Century Skills. The targets are students year 5 and year 8 in Brunei, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Thailand, Timor Leste, and Vietnam.

2. **2016-SEA Digital Class Piloting I as intervention study** to promote, observe and examine the effectiveness of teaching and learning model delivery that accommodate the 21st Century Curriculum concepts and philosophy. Involving 10 Primary Schools and 10 Secondary Schools of each member country that implement the teaching model during 8 weeks periods.

3. **2017-SEA Digital Class Piloting II as validation study** to validate the model by involving 20 Primary Schools and 20 Secondary Schools of each member country consist of previous 10 Primary Schools and 10 Secondary Schools as a control.

4. **2017-SEA Wide Assessment in Mathematics and Science** to formulate the standard minimum of competency in region relate to the 21st Century Skills.

5. **2018 SEA Community Learning System** as open sources available.
### DIAGNOSTIC TEST REPORT
#### PRIMARY SCHOOL

**Country**: Brunei Darussalam  
**Date of Implementation**: 9 – 10 November 2015  
**School Name and Address**: Keriam Primary School  
**Contact Person**: (Mdm) Tinidiana Haji Boharuddin

### Results

1. **Level of student grade 5 readiness in each subject**

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>1</td>
<td>5%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>1</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>18</td>
<td>90%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

**Science Score for 5th Grade, Brunei Darussalam**

![Pie chart showing the distribution of science scores](chart.png)
Students' Score on Mathematics
Grade 5

Science Score 5th Grade, Brunei Darussalam
There are a total of twenty students participated the diagnostic test for grade 5. It is shown from the chart that most participants (90%) ranged on below fifty on the science score. The highest (70) is gained by one student based on the bar chart.

For mathematics, most students (100%) achieved score ranges below and the highest score (50) is gained by two students.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.14 = 0% correct)

Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit?

A. his height  
B. his scar on his right cheek  
C. his intelligence  
D. his ability to play the drums

(Q.16 = 0% correct)
The landform below is a sea arch.

What is responsible for shaping this arch?
A. Plate tectonics
B. Earthquakes
C. Deposition
D. Erosion

Impression:
Both items are categorized as C4 which is Analyse. This type of question requires students to break a problem into parts and relate those parts to seek conclusion. This type of question is highly related to 21st century skills. Unable to answer this type of question shows that student still lack of the ability to seek for the relation between evidence and also science concepts to provide a solution.

B. Mathematics

(Q.18 = 1% correct)
An average score of 20 students is 6.8. When added score of two students more, the average becomes 7.0. What is the average score of the two students added?

A. 7.0
B. 7.5
C. 8.0
D. 9.0
**Impression:**

Related to statistics on item number 18, students has difficulties finding the average score. If students have a good understanding of the concept of mean, they can solve this item easily. However, most of the teaching and learning of statistics, especially mean, is taught by applying formulas only. The mean can be found by dividing the sum of all data by the number of data. To solve this item, students could apply the formula and the use of algebra. But, it is easier to find the average score by making the problem into a bar diagram. We called it as creative thinking so that they can solve the problem without formula. Creative thinking is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to explore more mathematical problems.

**III. Monitoring and Evaluation:**

The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

**A. Facilities Supported:**

This aspect consists with several features; classroom, device (computer and internet), and power supply to assess. In this aspect, the overall result was “good”. The classroom cleanliness and size is in good condition and also equipped with computers, laptops, and projectors, as well as the software’s inside (especially internet browser) which are required for this program. For the internet connection, this vital feature is on good set and should stable during the sessions, but the participants are expected to bring their own portable modem in case the internet is down.

**B. Human resources Supported**

Teachers: the teacher has good ability in using EDMODO
Students: they have good ability in using computers
Management/Principals: fully supports to conduct and facilitate

Recommendations and Suggestions:
The school should be equipped with adequate internet connection and computer facilities to support EDMODO.
Photo Documentation

1. School Name Board

2. Teacher Training

3. Student during the test
DIAGNOSTIC TEST REPORT
SECONDARY SCHOOL

Country : Brunei Darussalam
Date of Implementation : 7th – 8th October 2015
School Name and Address : Maktab Sains Paduka Seri Begawan Sultan (MSPSBS)
Contact Person : Ms Syahira (MoE Brunei); No: +6738778380

Results:

I. Level of student grade 8 readiness in science subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>12</td>
<td>54%</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>9</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>1</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>14</td>
<td>64%</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>6</td>
<td>27%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>2</td>
<td>9%</td>
<td></td>
</tr>
</tbody>
</table>
Score Percentage in Science Grade 8th
MSPSBS Brunei Darussalam

- 54% ≥ 70
- 41% 51-69
- 5% ≤ 50

Score Percentage in Science Grade 8th
MSPSBS Brunei Darussalam

- 55% >70
- 41% 51-69
- 4% ≤50
There are a total of twenty students participated the diagnostic test for grade 5. It is shown from the chart that most participants (54%) range of 70 and above on the science score and the highest (85) is gained by four students based on the bar chart.

For mathematics, most students (64%) achieved score ranges above 70 and the highest score (85) is gained by four students.

II. Questions that most students have the wrong answer:

From the 20 science item being tested, there were several items that most students failed to answer correctly, as follows:
A. Science

(Q.15 = 18% correct)

The following graphic shows the relationship between sugar consumption with the number of people who suffer dental carries in several different countries. Each country symbolized by a point in the graphic.

Which one of these statements which is supported by providing data in the graphic?

A. By consumption more sugar, the more possibility for people can suffer dental carries.
B. In the recent years, people who suffer dental carries in most countries are increasing.
C. In the recent years, sugar consumption in most countries are increasing.
D. None of the above data provided in the graphic.
Impression:
Most of student in MSPSBS Brunei can solve the item C1-C3 of Bloom’s Taxonomy. However, they need to train item C4-C5, it means that they need enrichment for analysing, evaluating, and creating item.

B. Mathematics
Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. \( \frac{2}{3} \)   \hspace{1cm} B. \( \frac{3}{5} \)  
C. \( \frac{1}{2} \)   \hspace{1cm} D. \( \frac{2}{5} \)

Impression:
This question asks students to solve the problem related to measurement of the trapezoid. The students should translate the problem into mathematical form (draw the problem) as a part to solve this problem.

He or she then decided that if AB = x then CD = 2/3 x.

The area of ABCD is \( t \frac{x + \frac{2}{3} x}{2} = t \frac{5}{3} x \) / 2

The area of DEC is \( t \frac{\frac{2}{3} x}{2} \)

The part of the area of ABCD is the area of DEC = \( t \frac{\frac{2}{3} x}{2} / t \frac{\frac{5}{3} x}{2} = 2/3 = 2; 3 \)

It can be concluded that by using the information on the problem and think, especially High Order Thinking skills, the way to find part of the area of ABCD is the area of DEC, the students have already applied the 21st century curriculum. So, grade 8 students in Brunei
II. Darussalam have to improve their skills on analyse the problem by using the information and also creative thinking to find the solution of the problem.

III. Monitoring and Evaluation

The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported:

This aspect consists with several features; classroom, device (computer and internet), and power supply to assess.

In this aspect, the overall result was “good”. The classroom cleanliness and size is in good condition and also equipped with computers, laptops, and projectors, as well as the softwares inside (especially internet browser) which are required for this program. For the internet connection, this vital feature is on good set and should stable during the sessions, but the participants are expected to bring their own portable modem in case the internet is down.

B. Human resources Supported

Teachers : The teacher has good ability in using EDMODO
Students : Students have good ability in using computers
Management/Principals : Fully supports to conduct and facilitate

C. Recommendations and Suggestions:

The school should be equipped with adequate internet connection and computer facilities to support EDMODO.
Photo Documentation

1. School Name Board

2. Teacher Training

3. Student during the test
4. Some supported facilities

This aspect consists with several features; classroom, device (computer and internet), and power supply to assess. The school was provided a classroom for this program, they were used computer laboratory, and they have four computer laboratories with good internet connection.
DIAGNOSTIC TEST REPORT GRADE 5

Country : Cambodia
Date of Implementation : 6-7 November 2015
School Name and Address : Watbo Primary School, Siem Riep, Cambodia
Contact Person :

Results:

I. Level of student grade 5 readiness in each subject

A. Mathematics

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>32</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>1</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>27</td>
<td>96%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Mathematics and Science

Score Percentage in Science 5th Grade Students, Cambodia

- Data Science Score ≥ 70
- Data Science Score 51 - 69
- Data Science Score ≤ 50
II. Questions that most students have the wrong answer:

A. Mathematics:

The questions that most students have wrong answer are number 9 and number 13. Both of these items have 0% correct. It means that none successfully answered these questions.

The questions are:

Question number 9

The pie chart shows the number of students who have chosen a holiday package to five countries. The number in brackets shows the measure of central angle of each sector. Given that the total number of students who have chosen the holiday package is 300, the number of those choosing Japan is ...

A. 15
B. 30
C. 60
D. 72
Question number 13

Vina draws the following pattern on her square dot paper. She notices that a 1 unit square uses 4 dots, a 2 unit square uses 9 dots and a three unit square uses 16 dots. How many dots would a 5 unit square use?

A. 21  
B. 23  
C. 32  
D. 36

Impression:

The item number 9 belongs to the arithmetic problem focus on ratio and proportion. To find the answer, firstly they have to find the angle measure in Japan which is 72°. The ratio between the angle measure for Japan and the angle of full circle times the total number of students is the number of those choosing Japan.

The problem number 13 is about patterns. This item is not really difficult and do not require any formula if they are able to continue the pattern. They just need to observe the pattern and even draw the next patterns.

The students have to analyse the problem and think creatively to solve those items. Creative thinking is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to explore more mathematical problems.

B. Science:

1. (Q.9 = 4% correct)  
Which of these meals would give you most of the nutrients that you need?  
A. Meat, milk, and a piece of chocolate  
B. Bread, vegetables, and fish  
C. Eggs, vegetables and fruits  
D. Vegetables, fruits, and water
2. (Q.16 = 7% correct)

The landform below is a sea arch.

![Sea Arch Image](image_url)

What is responsible for shaping this arch?
A. Plate tectonics
B. Earthquakes
C. Deposition
D. Erosion

Number students and percentage:

Question number 9:
- Incorrect answer: 96%
- Correct answer: 4%

Question number 16:
- Incorrect answer: 93%
- Correct answer: 7%

Impression:
For question number 9, it is associated with C2 of Bloom’s Taxonomy (Understanding, Comprehension) and indicates that most students still having a lack of comprehension of their subject learning material. While question number 16 is associated with C4 of Bloom’s Taxonomy (analyse), expressed that grade 5 student in Watbo primary School Cambodia not yet mastering this type of items.
III. Monitoring and Evaluation (Summary):

A. Facilities Supported:

1. Classroom or computer laboratory:
   The computer laboratory is equipped with computers and a whiteboard. As one of the top schools in Cambodia, Aknuwat has a modern outlook in facilities and infrastructure. They were granted by the USAID. But most students do the test using their teacher’s laptop, also dispatched team's laptop and tablet pen. At first, students having trouble working with Edmodo, but then everything runs as it expected.
   
2. Computer, supporting device and an internet connection
   School PC only had one CPU connected to the main PC (for Teacher) and then sharing with 20 PC for students. We cannot expect optimal performance while students work with Edmodo. Some PC stopped in the middle of the test, and make student stressed and their score only shown for 1 test. The internet connection unstable. Teacher and dispatched teams share their mobile data so students can connect to the internet and work with Edmodo.
   
3. Power supply and kit
   The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.

B. Human resources Supported

Teachers:
Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. They get interested with Edmodo and almost all teachers use to operate it. The technician and supporting staff are excellent, even though there is only one, but his skill and knowledge about handling technical problems is very handy.

Students
The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test

 Principals
The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program.
Recommendations and Suggestions:

A. Content:

The student’s grade for answering the test is nothing to do with curriculum, especially in Science. Because the test itself only measures their logical thinking and had no relation to the curriculum. However, some teachers still think that the test is related to what extend the curriculum itself.

B. Technical Matters:

The school realized that if they want to apply Edmodo for their tools in conduct test, they have to improve their computer laboratory or Media Centre with one CPU for each PC and also provide it with a stable internet connection.
Country: Cambodia
Date of Implementation: 6-7 November 2015
School Name and Address: Aknuwat Secondary School, Krong Kampong Cham, Cambodia
Contact Person: Mrs Olmary

Results:

Level of student grade 8 readiness in each subject

A. Mathematics

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>1</td>
<td>2%</td>
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</tr>
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<td></td>
<td></td>
<td>≤ 50</td>
<td>44</td>
<td>98%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>35</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>64%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams for Mathematics and Science

Science Test Result for 8th Grade in Cambodia

- Data Science ≥ 70
- Data Science 51-69
- Data Science ≤ 50
Questions that most students have the wrong answer:

Mathematics:

The questions that most students have wrong answer are number 8 and number 19. Both of these items have 5% correct. It means that only two out of 45 students successfully answered these questions.

The questions are:

Question number 8

Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. $\frac{2}{3}$  
B. $\frac{3}{5}$  
C. $\frac{1}{2}$  
D. $\frac{2}{5}$

Question number 19

The average of mathematics score for five students is 8.2. Arnold joins to that group, so the average of mathematics score becomes 8.0. What is Arnold’s mathematics score?

A. 6  
B. 7  
C. 8  
D. 9
Question number 8 asks students to solve the problem related to measurement of trapezoid. The students should translate the problem into mathematical form (draw the problem) as a part to solve this problem.

He or she than decided that if \( AB = x \) then \( CD = \frac{2}{3} x \).

The area of \( ABCD \) is \( t \left( x + \frac{2}{3} x \right) / 2 = t \left( \frac{5}{3} x \right) / 2 \)

The area of \( DEC \) is \( t \left( \frac{2}{3} x \right) / 2 \)

The part of the area of \( ABCD \) is the area of \( DEC \) = \( \frac{t \left( \frac{2}{3} x \right) / 2}{t \left( \frac{5}{3} x \right) / 2} = \frac{2}{3} = \frac{2}{3} \).

**Impression:**

The item number 9 belongs to statistics. The average score of several students given and they have to determine the new comer’s score if the average score of total students known. If students have a meaningful understanding of the concept of mean, they can solve this item easily. Without using formula, they can solve this problem. However, most of the teaching and learning of statistics, especially mean, is taught by applying formulas only.

The students can make the problem into a bar diagram. The average of mathematics score for five students is 8.2 means:

A total score of five students is \( 8.2 \times 5 = 41 \)
Arnold joins to that group, so the average of mathematics scores becomes 8.0

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

Total score of six students is $8 \times 6 = 48$

So Arnold’s score is $48 - 41 = 7$

It can be concluded from those items that by using the information on the problem and think the strategies they did to solve the problem, the students have already applied the 21st century curriculum. Unable to solve these problems means that grade 8 students in Cambodia have to improve their skills on analyse the problem by using the information and also think creatively to find the solution of the problem.

B. **Science:**

3. *(Q.3 = 11% correct)*

Which is an example of a chemical reaction?

A. The melting of ice.
B. The grinding of salt crystals to powder.
C. The burning of wood.
D. The evaporation of water from a puddle.
4. **(Q.7 = 5% correct)**

The diagram below represents the Sun, Earth, and the Moon as viewed from space. Letter \( X \) is a location on Earth’s surface.

Which diagram best represents the phase of the Moon as viewed from \( X \)?

- A.  
- B.  
- C.  
- D.  

**Number students and percentage:**

Question number 3:
- Incorrect answer: 89%
- Correct answer: 11%

Question number 7:
- Incorrect answer: 95%
- Correct answer: 5%

**Impression:**

For question number 3, it is associated with C1 of Bloom’s Taxonomy (Recall/ Remembering). The teacher confirmed that their student in 8th grade is just starting their first semester, and chemical reaction is really a new thing for them. While question number 7 is associated with C2 of Bloom’s Taxonomy (Understanding/ Comprehension), with only 5% of student answer it correctly. Based on curriculum mapping materials that have been done by SEAQIS on 2012 and improvement on 2014, the Earth and Science Subject for lower secondary school is been taught since year 7. However the result might express that student understanding or comprehension is still low on the Earth and Space Science subject that is one of the chapters in Physics.
Monitoring and Evaluation (Summary):

A. Facilities Supported:

4. Classroom or computer laboratory:

   The computer laboratory is equipped with computers and a whiteboard. As one of the top schools in Cambodia, Aknuwat has a modern outlook in facilities and infrastructure. They were granted by the USAID. But most students do the test using their teacher’s laptop, also dispatched team's laptop and computer tablet. At first, students had trouble working with Edmodo, but then everything runs as it expected.

5. Computer, supporting device and an internet connection

   School PC only had one CPU connected to the main PC (for Teacher) and then sharing with 20 PC for students. We cannot expect optimal performance while a student works with Edmodo. Some PC stopped in the middle of the test, and make student stressed and their score only shown for 1 test. The internet connection unstable. Teacher and dispatched teams share their mobile data so students can connect to the internet and work with Edmodo.

6. Power supply and kit

   The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.

B. Human resources Supported

Teachers:

Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. They get interested in Edmodo and almost all teachers use to operate it. The technician and supporting staff are excellent, even though there is only one, but his skill and knowledge about handling technical problems is very handy.

Students

The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test

Principals

The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program.
Recommendations and Suggestions:

A. Content:

The student’s grade for answering the test is nothing to do with curriculum, especially in Science. Because the test itself only measures their logical thinking and had no relation to the curriculum. However, some teachers still think that the test is related to what extend the curriculum itself.

B. Technical Matters:

The school realized that if they want to apply Edmodo for their tools in conduct test, they have to improve their computer laboratory or Media Centre with one CPU for each PC and also provide it with a stable internet connection.

Photo/documentation:

1. School Name Board
2. Teacher Training
3. Student during the test
4. Some supported facilities
Country: Indonesia
Date of Implementation: 17-18 September 2015
School Name and Address: 35 Primary Schools in Bandung
Contact Person: Mr. Aditya Pratama

Results:

I. Level of student grade 5 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>6</td>
<td>1%</td>
<td>1002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51- 69</td>
<td>144</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>852</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>46</td>
<td>5%</td>
<td>1002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51- 69</td>
<td>889</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>67</td>
<td>62%</td>
<td></td>
</tr>
</tbody>
</table>

Science Result

- Data Science ≥ 70: 5%
- Data Science 51-69: 33%
- Data Science ≤ 50: 62%
II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

(Q.12 = 7%)

Which tools are needed to find how mass affects the distance these boxes will slide?

A. Ramp, thermometer
B. Balance, ruler
C. Stopwatch, ruler
D. Balance, string

(Q.18 = 7%)

Felipe and Marsha were studying forces and decided to do an experiment. They placed four equally sized blocks made of different materials on an elevated plastic tray. They watched each of the blocks move down the tray. Their setup is shown below.
Which block would experience the least amount of friction as it moved down the tray?

A. Ice block  
B. Sponge block  
C. Sandpaper block  
D. Plastic block

**Impression:**

For question number 12 it is associated with C5, and also C2 for question number 18. Both are an example that Bloom’s Taxonomy C2 can also consider as difficult for most students.

---

III. Monitoring and Evaluation (Summary):

A. Facilities Supported:

1. **Classroom or computer laboratory:**

   The computer laboratory is equipped with computers and a blackboard. But most students do the test using their smartphone and tablet or their own laptop. Only some student did the test in their computer laboratory, but it is also neat and conducive. Overall, the computer laboratory aspect is excellent.

2. **Computer, supporting device and internet connection**

   The student with a smartphone, tab, laptop or even using school computer laboratory not all provided by the school in terms of internet connection, but the students had to use their own data plan from their smartphone or modem, because school has limited internet connection.

3. **Power supply and kit**

   The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.
B. Human resources Supported

Teachers:

Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. Also, they are interested with Edmodo and able to operate it. The technician and supporting staff are excellent, both in numbers, skill and knowledge about handling technical problems.

Students

The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test.

Management/Principals

The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program. He even asked the technician to repair the internet connection a day before to facilitate some students who are using computer from school computer laboratory.

Recommendations and Suggestions:

A. Content:

The question should be clearer, in translation and related to the curriculum.

B. Technical Matters:

The students, and all school crew very appreciated and help each other how to use Edmodo.
C. Photo/Documenttion

Students conducted the diagnostic test

Opening by HE Minister of Education and Culture, Indonesia, via Video Conference
DIAGNOSTIC TEST REPORT
LOWER SECONDARY SCHOOL

Country: Indonesia
Date of Implementation: 17-18 September 2015
School Name and Address: 15 Secondary Schools in Bandung
Contact Person: Mr. Aditya Pratama

Results:

I. Level of student grade 8 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
<th>Highest Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>95</td>
<td>9%</td>
<td>1110</td>
<td>80/100 by 13 students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>448</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>567</td>
<td>51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>448</td>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>567</td>
<td>51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>621</td>
<td>56%</td>
<td>1110</td>
<td>highest score 90/100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>288</td>
<td>26%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>201</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Science Score for 8th Grade, Indonesia

- ≥70: 9%
- 51-69: 40%
- ≤50: 51%
II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

(Q.11 = 11% correct)

Which statement correctly compares the potential energy of the balls?

A. C has more potential energy than B
B. E has more potential energy than F
C. D has less potential energy than E
D. B has less potential energy than A

(Q.12 = 12% correct)

Which object listed in the table has the greatest density?
<table>
<thead>
<tr>
<th>Object</th>
<th>Mass of the object</th>
<th>Volume of the object</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>10,0 gram</td>
<td>10 cubic centimeters</td>
</tr>
<tr>
<td>W</td>
<td>11,0 gram</td>
<td>24 cubic centimeters</td>
</tr>
<tr>
<td>X</td>
<td>11,0 gram</td>
<td>12 cubic centimeters</td>
</tr>
<tr>
<td>Y</td>
<td>5,5 gram</td>
<td>4 cubic centimeters</td>
</tr>
<tr>
<td>Z</td>
<td>5,5 gram</td>
<td>11 cubic centimeters</td>
</tr>
</tbody>
</table>

A. V  
B. W  
C. X  
D. Y  

**Impression:**

Both items are classified in C3 which is Apply. This type of question requires student to apply science concept they have learned to a new situation/problem. In the perspective of 21st century skill, this C3 skill is related to student ability to reason effectively and problem solving. Unable to answer this type of question means that the student still needs more time in problem solving activities.

III. Monitoring and Evaluation  
A. Facilities Supported:  
1. Classroom or computer laboratory:  
The computer laboratory is equipped with computers and a blackboard. But most students do the test using their smartphone and tablet or their own laptop. Only some students did the test in their computer laboratory, but it is also neat and conducive. Overall, the computer laboratory aspect is excellent.

2. Computer, supporting device and internet connection  
The student with a smartphone, tab, laptop or even using school computer laboratory not all provided by the school in terms of internet connection, but the students had to use their own data plan from their smartphone or modem, because school has limited internet connection.

3. Power supply and kit  
The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.
B. Human resources Supported

Teachers:
Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. Also, they are interested with Edmodo and able to operate it. The technician and supporting staff are excellent, both in numbers, skill and knowledge about handling technical problems.

Students
The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test.

Management/Principals
The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program. He even asked the technician to repair the internet connection a day before to facilitate some students who are using computer from school computer laboratory.

C. Recommendations and Suggestions

Content
The question should be clearer, in translation and related to the curriculum.

Technical Matters
Other recommendation is the facility and equipment should be standardize with minimum requirements, from this program we can conclude the minimum requirements to conduct future program: every classroom should provide with standard computer or laptop with at least one internet browser, the internet connection should adequate to serve more than 20 devices at once, Wi-Fi connection is strongly recommended for laptop or mobile gadget users, the classroom should provide at least one PIC to help students in test, and also one technician staff to troubleshoot the technical problems.
D. Photo/Documentation

Opening Ceremony attended by Director of SEAMES, QITEP in Science, QITEP in Mathematics and Head of Bandung Education Office

Director of SEAMES delivered his speech

Students conducted the diagnostic test
### DIAGNOSTIC TEST REPORT
#### PRIMARY SCHOOL

**Country**: Lao People’s Democratic Republic  
**Date of Implementation**: 22 October 2015  
**School Name and Address**: Sokpaluang Primary School  
**Contact Person**: Dokkeo Fongsamod

#### Results

I. Level of student grade 5 readiness in each subject

   A. Mathematics

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Mathematics

#### Score Percentage in Mathematics Grade 5th
Sokpaluang School, Vientiane, Laos

- **≤ 50**: 0%
- **51-69**: 0%
- **≥ 70**: 100%
B. Science

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Science

II. Questions that most students have the wrong answer:

A. Mathematics

Most students have the wrong answer to question number 1, 7, 19. 100 % students failed to answer these questions.

The questions are:

Question number 1

Amir drew the figures of these four boats (P, Q, R and S) using rectangle and triangle. Which boat has one rectangle and three triangles?
Question number 7

What is the area of the rectangle in triangular units?

C. 9  C. 20
D. 18  D. 40

Question number 19

Jasmine has 24 red apples and 12 green apples. What fractions of the apples are green?

A. \( \frac{1}{2} \)
B. \( \frac{1}{3} \)
C. \( \frac{1}{4} \)
D. \( \frac{1}{12} \)

Impression:

Item number 1 is about geometry asking about their understanding of geometrical shapes. Students had to determine a figure which has one rectangle and three triangles. This item is relative easy. However, none student successfully answers this question. It requires students’ recognitions of the shapes and how many of them required on the items.

Students also had difficulties solving item number 7. Item number 7 belongs to measurement topics related to the area. In this item, students had to determine the number of tiles (triangles) to find the area of the rectangle. The meaningful understanding about the area of a figure helps so much to find the answer. But, none students find the correct answer. Hardly did students see that there are ten triangles in the horizontal edge. If students saw this, they would multiply this number four times or added them ten by ten to get 40.

The students also failed to solve the question number 29. The item asks students to determine the proportion of the green apple. It might be the students have misconception with the definition of “proportion of the green apple”. A proportion is taught by giving the
number of parts of a thing and the number of all. Then students could easily solve the problem.

Analysing the problem and think creatively to solve the problems are classified into high order thinking skill which is related closely to the 21st century skill. Unable to solve these types of questions showed that the students still need to explore more mathematical problems.

The average score for mathematics is 27.86.

B. Science:

1. While hiking last year, Mike saw a large boulder next to a mountain trail. The boulder had no cracks. While hiking on the trail this year, he saw two large cracks in the boulder. Which of the following most likely caused these cracks to form? (Question #10)
   
   All (ten) students answered incorrectly (100%)

2. Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit? (Question #14)

   All (ten) students answered incorrectly (100%)

Impression:

The most wrong answered question is question number 10 with level C3 (apply) and question number 14 with level C4 (analyse) in bloom taxonomy, these two questions is in middle-level of bloom taxonomy. Based on this result, it can be concluded that teacher in Sokpaluang school only focuses on though a plenty information and knowledge to students. The students only able to remember and understand, but did not know how to apply a specified knowledge in real life situation, and how to analyse a part of a whole interact with each other to produce overall outcomes in complex systems.
III. Monitoring and Evaluation

The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported

This aspect consists with several features; classroom, device (computer and internet), and power supply to assess. The school did not have a computer lab and also the computer. The school was used library as workshop venue, not all teachers and students own gadget, and use mobile portable Wi-Fi for internet with very limited bandwidth. For workshop session, they provide an LCD projector without a screen, and for online test, only few students bring their gadget. Based on the observation result in facilities, Sokpaluang Primary School did not ready yet for this programme implementation.

B. Human resources Supported

Teachers

There are 13 teachers participated in the workshop, but only few of them were familiar with internet and computer, only 2 teachers have email, and only one who able communicate in English, for that case, we helped by the interpreter to interpret our English presentation. Many of them even could not write down their name in Latin letter, it would be a big obstacle for them to adapt digital class, although they showed their enthusiast in learning Edmodo.

Students

The students bring their own laptop or tablet, few of them did not bring any, so they work with paper and pencil. Although the students were interested with digital test, but they had difficulties in English, they also could not write their name in Latin letter. For test content, they said it was a difficult test, they haven't understood the questions even it was in Lao. In the interview session, they stated they prefer paper and pencil because they get used to it, they said it would be an obstacle to implement the digital class in their school because the school had not proper facilities.
Management/Principals

The Principal was very supportive of this programme implementation, she provides all facilities in this program even in limited condition, although she not interested in digital class due to limited facilities in her school, she encouraged the teachers to more adept with technology and improved their English skill to compete among Southeast Asian countries in 21 centuries.

C. Recommendations and Suggestions

Content

Based on the result of a diagnostic test, 100% of students acquired score below or equal 50 for science and Mathematics subjects, it was indicated that their competencies were below expectation. There were many variables that influenced by many factors, the content might be different with Lao PDR curriculum, or the students did not teach several materials yet. The translation from English to Lao also gave an effect on students understanding on questions.

In this regards, it is recommended that the test should be conducted in the second semester so that the whole material for respective grade is completely accomplished. In addition, in terms of the language of the items, it is strongly recommended that the items are translated into local language by local experts that comprehend subject and English very well to avoid misconception and mistranslation.

Technical Matters

Internet connection and language were the major problem during the implementation of SEA Digital Class in Lao PDR, particularly in Sokpaluang Primary School. Slow internet connection could not serve students digital test, it affected on students score. Therefore, it is recommended that when SEAMEO Secretariat write letter to the selected school, the instructions should be very clear, for instance, what equipment or apparatus should be prepared by the school, and number of teachers and students involved. The availability of teacher with fluent English proficiency is also crucial to help the implementation run well.
DIAGNOSTIC TEST REPORT
LOWER SECONDARY SCHOOL

Country : Lao People’s Democratic Republic
Date of Implementation : 23 October 2015
School Name and Address : Sisattanak Lower Secondary School
Districts of Sisattanak, Vientinae
Contact Person : Ms Detthong Xaypanya

Results
The result of the diagnostic test is presented below.

I. Level of student grade 8 readiness in each subject

A. Mathematics

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0.00%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>7</td>
<td>70.00%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>3</td>
<td>30.00%</td>
<td></td>
</tr>
</tbody>
</table>

Students' Score on Mathematics

Grade 8

Score >=70 0%
Score <=50 30%
Score 51-69 70%
B. Science

Table 1. Students' Score

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

There were ten students participated in the science diagnostic test. The result shows that the average score is 39.5. The highest score is 45 gained by four students, and the lowest score is 30 gained by one student.
Derived from the chart, all students’ score for science test are fewer than 50. It means that students found difficulties in answering the test. Based on the interview, the teachers said that some topics that were being tested have not been taught yet in that semester. Besides, students also considered that the language used in the test was not standard.

II. Questions that Most Students Had the Wrong Answer

1) Mathematics:

Most students have the wrong answer to question number 3, 7, 8, 9, 15. 100% students failed to answer these questions.

The questions are:

Question number 3
The graph of equation:

\[ 2x - 3y = 6 \]
**Question number 7**
A rhombus has diagonals of 8 and 6 units length. What is the perimeter?

A. 24  
B. 20  
C. 14  
D. 10

**Question number 8**
Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. \( \frac{2}{3} \)  
B. \( \frac{3}{5} \)  
C. \( \frac{1}{2} \)  
D. \( \frac{2}{5} \)

**Question number 9**
In the figure below, every two adjacent sides are perpendicular each other. What is, in unit length, its perimeter? Note that the figure is not proportional.

![Figure with dimensions](image)

A. 48  
B. 58  
C. 74  
D. 84

**Question number 15**
A jacket normally costs $80. If the price was reduced by 20%, how much does Jack have to pay?

A. $16  
B. $20  
C. $60  
D. $64

**Impression**
The question number 3 asks students to choose a graph of a linear equation. The first strategy to solve this problem is to look for the intercepts of the graph on the abscissa and ordinate. The intercepts of the graph on the abscissa happened if the value of y is 0 and ordinate the intercepts of the graph on the ordinate happened if the value of x is 0. And then they should connect both intercept point to be a line/graph.
The question number 15 is belongs to social arithmetic close to the daily life problem. If the students have a meaningful understanding of price discount, they can solve this problem easily. There are only two procedures to determine the sale price: calculate the discount by multiplying the rate by the original price and calculate the sale price by subtracting the discount from original price.

The question number 7, 8, and 9 are about measurement. Students should transform the problem number 7 into mathematical language. To determine the perimeter of a rhombus, the students should find side lengths of a rhombus using the information. In this case, they need Pythagorean Theorem to find the side. They can draw a figure of a rhombus to make it easier to solve.

The item number 9 is also about perimeter. To solve the problem, they can’t use the formula since the shape is irregular. So, they have to think creatively to find the answer.

Dealing with measurement of trapezoid, students also find item number 8 difficult. They should translate the problem into mathematical form (draw the problem) as a part to solve this problem.

He or she then decided that if \( AB = x \) then \( CD = \frac{2}{3} x \).

The area of \( ABCD \) is \( \frac{t (x + \frac{2}{3} x)}{2} = \frac{t (\frac{5}{3} x)}{2} \)

The area in \( DEC \) is \( \frac{t (\frac{2}{3} x)}{2} \)

The part of the area of \( ABCD \) is the area of \( DEC = \frac{\frac{t (\frac{2}{3} x)}{2}}{\frac{t (\frac{5}{3} x)}{2}} = \frac{2}{3} = 2 : 3. \)

The steps/ the ways that the students used to solve the problems are very important. They have to think creatively using the information given and finally got the solution. Unable to solve those problems showed that Grade 8 students in LAO PDR have to improve their skills on the problem which require high cognitive skills.

The average score for Mathematics is **55.50**
2) Science

From the 20 test items being tested, there were several items that all students failed to answer correctly, as follows:

Q1. Which statement explains why daylight and darkness occur on Earth?

Q6. The diagram represents the Moon and its orbit around Earth. The arrow labelled X represents the force that keeps the Moon in its orbit.
Q7. The diagram below represents the Sun, Earth, and the Moon as viewed from space. Letter X is a location on Earth’s surface.

Which diagram best represents the phase of the Moon as viewed from X?

Q8. What do you think about the relationship between the freezing and melting point of the substance based on the graph below?
Q12. Which object listed in the table has the greatest density?

<table>
<thead>
<tr>
<th>Object</th>
<th>Mass of the object</th>
<th>Volume of the object</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>10,0 gram</td>
<td>10 cubic centimeters</td>
</tr>
<tr>
<td>W</td>
<td>11,0 gram</td>
<td>24 cubic centimeters</td>
</tr>
<tr>
<td>X</td>
<td>11,0 gram</td>
<td>12 cubic centimeters</td>
</tr>
<tr>
<td>Y</td>
<td>5,5 gram</td>
<td>4 cubic centimeters</td>
</tr>
<tr>
<td>Z</td>
<td>5,5 gram</td>
<td>11 cubic centimeters</td>
</tr>
</tbody>
</table>
It is shown from the charts above that there were five test items that all students failed to answer correctly, including items no. 1, 6, 7, 8, and 12.

**Impression**

From the results of the test, it is shown that students failed to solve problems at lower order level of the Bloom’s Cognitive Taxonomy (C1 – C3). At this level, students are only required to involve the simple recall of information, memory or words, facts and concepts. This level also describes the use of generalized knowledge to solve a problem the students have not seen before.

Since their mistakes occur in the lower level of Bloom’s Cognitive Taxonomy, teacher should improve students’ ability to use rote memorization and recall certain facts. Students should be also taught to to read course content, extrapolate and interpret important information and put other’s ideas into their own words. They also have to be trained to take new concepts and apply them to another situation.

**Monitoring and Evaluation**

Monitoring and evaluation is the key to an effective measurement of the entire system and an indispensable tool of ensuring quality improvement. With the appropriate indicators, tools and processes, monitoring and evaluation develops performance standards that would
be used to track past performances and forecast future outcomes. It gives one an early warning system that tells where intervention or corrective action is needed.

The monitoring and evaluation include the supporting facilities, human resources, and recommendation and suggestions. The monitoring and evaluation are described below.

a. Supporting Facilities:
The facilities in the school were inadequate to conduct the digital class. The school were not able to provide internet connection and other essential apparatus such as computer or tablet to be used during the test. As a result, instead of using Edmodo platform, the test conducted in this school was the paper and pencil test.

b. Human resources

1) Teachers
During the implementation of the programme, there were twelve teachers involved comprising of science and mathematics teachers. Among the teachers, only two teachers that were able to speak English, but that also weren’t fluently. This language constraint was really the main problem during the implementation since the communication between the instructors and participants became hampered. This was aggravated by the inability of some teachers to write in Latin, hence, it took a long time just to fill the questionnaire.

2) Students
The students showed great enthusiasms to join the programme. It is seen from their eagerness to ask questions about the Edmodo platform. However, they also found difficulties in writing their name in Latin words. Basically, they really wanted to try to conduct the test using the Edmodo platform as they stated that this platform might be very interesting and could increase students’ motivation to learn science and mathematics. They opined that using the internet, the test could be faster than the traditional way. Nevertheless, they emphasised that it could not be implemented in the school as the internet connection in their school are not available.
3) Management/Principals
The school principal was very supportive during the programme. He also joined the class from the first session to the end. He stated that this programme could give benefits to the students, but the problem was they didn’t have the internet connection.

c. Recommendations and Suggestions:

1) Content:
The students considered the test items were very difficult, because some of the items have not been taught yet in that semester. The problem was only in terms of the item itself, but also the language of the items which is not standard. It might be caused by the translation of the items from English into Lao.
In this regards, it is recommended that the test should be conducted in the second semester so that the whole material for respective grade is completely accomplished. In addition, in terms of the language of the items, it is strongly recommended that the items are translated into local language by local experts that comprehend subject and English very well to avoid misconception and mistranslation.

2) Technical Matters
Internet connection and language were the major problem during the implementation of SEA Digital Class in Lao PDR, particularly in Sisattanak Lower Secondary School. Therefore, it is recommended that when SEAMEO Secretariat write letter to the selected school, the instructions should be very clear, for instance, what equipments or apparatus should be prepared by the school, and number of teachers and students involved. The availability of teacher with fluent English proficiency is also crucial to help the implementation run well.
Photo/Documentation in Primary School

SEAMEO Team, school managements & Teachers in Sokpaluang Primary school, Lao PDR

Team presentation on program overview, 21st Century Skills, and Edmodo Workshop
Teacher training on Edmodo helped by interpreter

5th grade students doing a science and math test through Edmodo with laptops & tablets
Photo/Documentation in Lower Secondary School

SEAMEO Team, school managements, Teachers and Students in Sisattanak Lower Secondary school, Lao PDR
Team presentation on program overview, 21st Century Skills, and Edmodo Workshop helped by interpreter.

Students work for Diagnostic test with paper and pencil (left) and teachers interview (right).
## DIAGNOSTIC TEST REPORT

### PRIMARY SCHOOL

**Country**: Malaysia

**School Name and Address**: Sekolah Kebangsaan Mohd Shah Penang, Malaysia

**Date of Implementation**: 21 – 22 October 2015

**Contact Person**: 

### Results:

1. **Level of student grade 8 readiness in each subject**

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>5</td>
<td>18%</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>9</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>14</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>1</td>
<td>8.33%</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>1</td>
<td>8.33%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>83.33%</td>
<td></td>
</tr>
</tbody>
</table>

![Pie chart showing Science Score for 5th Grade, Malaysia](chart.png)
Mathematics Score on Grade 5 Malaysia

Score <=50 83%
Score 51-69 8%
Score >=70 9%

Science Score 5th Grade, Malaysia

| Score | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
|-------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|       | 60| 65| 61| 35| 35| 50| 51| 25| 45| 35| 40| 45| 51| 55| 55| 55| 51| 45| 41| 30| 30| 81|   |   |   |   |
|       | 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10| 10|

70
There were 28 students taking part on the science diagnostic test. From the pie chart, it is shown that most of the students (50%) gained 50 and below for the science test with the highest score was 96 of 96 by one student.

In mathematics, there were 12 students participating the diagnostic test. Most students (83,3%) achieved score ranges below 50 and the highest score (75) is gained by one student.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.14 = 21% correct)

Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit?

A. his height
B. his scar on his right cheek
C. his intelligence
D. his ability to play the drums
**Impression**

Item number 14 is categorized as C4 which is Analyse. This type of question requires students to break a problem into parts and relate those parts to seek conclusion. This type of question is highly related to 21st century skills. Unable to answer this type of question shows that student still lack of the ability to seek for the relation between evidence and also science concepts to provide solutions.

**B. Mathematics**

(Q.8 = 0% correct)

The shaded area of the figure, in square units, is ...

1. 22  C. 20
2. 21  D. 19

**Impression**

The item number 8 belongs to the area measurement topic. This item asks students to find the area of the shaded regions. Grade 8 students in Malaysia had difficulties finding an area of an irregular figure. The item number 8 is rarely found in the school textbooks. Usually students work with the regular figures to find areas and perimeters. The strategies can be used to solve this problem are reshaping or combining parts and also counting one by one. So, actually, they no need to use the formula to find the area of the figure. Chose creative strategies are the follow up of creative thinking. Creative thinking is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to explore more mathematical problems.
III. Monitoring and Evaluation:

The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported:

1. Classroom or computer laboratory:

   The computer laboratory is equipped with computers and a whiteboard. It is also neat and conducive. The laboratory size is adequate for participants. The LCD is also available. Overall, the computer laboratory aspect is excellent.

2. Computer, supporting device and an internet connection

   The computer laboratory has internet connection, but the bandwidth is poor. The portable modems are adequate. The computers have proper programs/software (internet browser, picture editor, MS Office, etc.). The computers also have other supporting devices (VGA/HDMI converter, USB port, microphone and speaker, printer, etc.). Overall, the computer, supporting device and an internet connection is good.

3. Power supply and kit

   The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.

B. Human resources Supported

Teachers:

Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. Also, they are interested with Edmodo and able to operate it. The technician and supporting staff are excellent, both in numbers, skill and knowledge about handling technical problems.

Students:

The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test.
Management/Principals:

The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program.

Recommendations and Suggestions:

A. Content:

The questions in the diagnostic test should be better in accordance with the curriculum.

B. Technical Matters:

Since the school sees the promising future in learning by using Edmodo, they need a bigger bandwidth to accommodate online learning.

Photo Documentation

[Images of Mr. Azmar & Mr. Aggry speech opening ceremony]
Mr. Aggry is Delivering the IBSE in the 21st Century Curriculum

Students actively taking a diagnostic test in Science and Mathematics
Country: Malaysia

Date of Implementation: 12 – 13 October 2015

School Name and Address: Sekolah Menengah Kebangsaan Air Putih, Kuantan – Pahang

Contact Person:

Results:

1. Level of student grade 8 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>20</td>
<td>69%</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>6</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>3</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>9</td>
<td>39%</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>12</td>
<td>43%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>5</td>
<td>18%</td>
<td></td>
</tr>
</tbody>
</table>

Science Score for 8th Grade, Malaysia

- ≥70: 71%
- 51-69: 18%
- ≤50: 11%
Students' Score on Mathematics Grade 8

Science Score 8th Grade, Malaysia
There are a total of twenty nine students participated the diagnostic test. It showed from the chart that most of the participating students (71%) gain score 70 and higher. The highest score (90) is gained by one student based on the bar chart.

In mathematics, there were 28 students participating the diagnostic test. Most students (43%) achieved score ranges between 51 – 69, and the highest score (95) is gained by one student.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.2 = 37% correct)

One of the principal causes of acid rain is ...
A. waste acid from chemical factories being pumped into rivers
B. acid from chemical laboratories being pumped into rivers
C. gases from burning coal and oil dissolving in water in the atmosphere
D. gases from air conditioners and refrigerators escaping into the atmosphere
Which is an example of a chemical reaction?
A. The melting of ice.
B. The grinding of salt crystals to powder.
C. The burning of wood.
D. The evaporation of water from a puddle.

In the article of Ferwerda, refers to scientists, carbon dioxide is not the main cause of the Greenhouse effect.

Karin finds the following table showing the relative Greenhouse effect caused by four gases:

<table>
<thead>
<tr>
<th>Relative Greenhouse effect per molecule of gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

From this table Karin cannot conclude which gas is the main cause of the increase of the Greenhouse effect. The data in the table need to be combined with other data for Karin to conclude which gas is the main cause of the increase of the Greenhouse effect. Which other data does Karin need to collect?
A. Data about the absorption of the four gases by plants.
B. Data about the size of each of the four types of molecules.
C. Data about the amounts of each of the four gases in the atmosphere.
D. Data about the other gases in the atmosphere.

Impression:
For question number 2 and 17, the students said that they have not learnt about the greenhouse effect before. For question number 3, it is also assumed that the topic about chemical reaction is also not in the Form 2 curriculum.

Based on the Bloom’s taxonomy, question number 2 and 3 are C1 level (remembering). It is in accordance with the fact that the students have not learned about the greenhouse effect and
chemical reaction, because the topics are for the higher level. Number 17 is a ‘C5 level’ question. Nevertheless, it cannot be determined that the students’ thinking skills is low because the fact is they have not learned about the topics in question number 2, 3 and 17.

B. Mathematics

(Q.2 = 25% correct)

Look at the following expression:

\[
\frac{a}{b} + \frac{2}{3}
\]

That expression is equal to …

A. \( \frac{3a+2b}{3b} \)  
B. \( \frac{a+2}{b+3} \)  
C. \( \frac{3a+2}{3b} \)  
D. \( \frac{a+2b}{3b} \)

(Q.8 = 25% correct)

Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. \( \frac{2}{3} \)  
B. \( \frac{3}{5} \)  
C. \( \frac{1}{2} \)  
D. \( \frac{2}{5} \)

Impression:

Dealing with arithmetic topic in question number 2, the students asked to sum two fractions. This is the basic concept in fraction addition. The strategies to solve this problem are making sure the denominators are the same, add the numerators, put the answer over the denominator, and simplify the fraction (if needed).
The question number 8 asks students to solve the problem related to measurement of the trapezoid. The students should translate the problem into mathematical form (draw the problem) as a part to solve this problem.

He or she then decided that if \( AB = x \) then \( CD = \frac{2}{3} x \).

The area of \( ABCD \) is \( \frac{t(\frac{5}{3} \cdot x)}{2} \).

The area in \( DEC \) is \( \frac{t(\frac{2}{3} \cdot x)}{2} \).

The part of the area of \( ABCD \) is the area of \( DEC \) is \( \frac{\frac{t(\frac{2}{3} \cdot x)}{2}}{\frac{t(\frac{5}{3} \cdot x)}{2}} = \frac{2}{3} = 2 ; 3 \).

It can be concluded that by using the information on the problem and think (choose the strategy) to find the answers, the students have already applied the 21st century curriculum. So, grade 8 students in Malaysia have to improve their skills on analyse the problem by using the information and also think creatively to find the solution of the problem.

III. Monitoring and Evaluation (Summary):

A. Facilities Supported:

1. Classroom or computer laboratory:
   
   The computer laboratory is equipped with computers and a whiteboard. It is also neat and conducive. The laboratory size is adequate for participants. The LCD is also available. Overall, the computer laboratory aspect is excellent.

2. Computer, supporting device and an internet connection

   The computer laboratory has internet connection, but the bandwidth is poor. The portable modems are adequate. The computers have proper programs/software (internet browser, picture editor, MS Office, etc.). The computers also have other
supporting devices (VGA/HDMI converter, USB port, microphone and speaker, printer, etc.). Overall, the computer, supporting device and an internet connection is good.

3. Power supply and kit

The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.

B. Human resources Supported

Teachers:

Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. Also, they are interested with Edmodo and able to operate it. The technician and supporting staff are excellent, both in numbers, skill and knowledge about handling technical problems.

Students:

The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test.

Management/Principals:

The school management, especially the principal, fully supports the program and facilitates the teachers in conducting the program.

Recommendations and Suggestions:

C. Content:

The questions in the diagnostic test should be better in accordance with the curriculum.

D. Technical Matters:

Since the school sees the promising future in learning by using Edmodo, they need a bigger bandwidth to accommodate online learning.
Photo Documentation
DIAGNOSTIC TEST REPORT

Country: Myanmar
Date of Implementation: 4 to 5 November 2015
School Name and Address: No. (9) Basic Education Primary School, Pathein
Contact Person: Mr U Aung Maw (Tel: +95 094 2244 3261)

Results:

I. Level of student grade 5 readiness in each subject

A. Mathematics

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0.00%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>100.00%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0.00%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>6</td>
<td>30.00%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>14</td>
<td>66.67%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Mathematics

Percentage of Grade 5 Students' Mathematics Score at No. (9) Basic Education Primary School, Pathein

- 0.00%
- 100.00%
II. Questions that most students have the wrong answer:

A. Mathematics:

Write the questions:

1. **Question number 6**: The perimeter of the following figure is ...

![Diagram](image)

2. **Question number 12**: Ramzi buys trousers. The price attached in the trousers is $35.00, he get 35% for the cutting price. How much money does he pay?

**Number students and percentage**:

The following table shows questions that students have most wrong answer (depicted by the number and percentage of students having wrong answer)

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>19</td>
<td>95%</td>
</tr>
<tr>
<td>12</td>
<td>18</td>
<td>90%</td>
</tr>
</tbody>
</table>
Impression

The students had difficulties to find the solution for question number 6. They usually worked with a perimeter of regular figure and applied the formula to getting the answer. It is undeniable that when students faced this item, they found it difficult because no formula for this has been given. They found it difficult since they did not know how to get the lengths of other sides. They were stuck and could not find the answer. In traditional classroom teaching, students work with regular figures and find their areas and perimeters by using formulas. Rarely do they explore irregular figures to find areas and perimeters. So it’s better for grade 5 students in Myanmar practise more the problem that needs deep analyse and creative thinks to solve.

The average score for mathematics is 29.25.

B. Science:

Write the questions:

1. Question number 14: Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit?

2. Question number 2: Which is more responsible for recycling dead plants and animals in an ecosystem?

The following table shows questions that students have most wrong answer (depicted by the number and percentage of students having wrong answer)

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Number of Students</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>19</td>
<td>95%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Level</th>
<th>Correct Answer (%)</th>
<th>Incorrect Answer (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C1</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>2</td>
<td>C1</td>
<td>5%</td>
<td>95%</td>
</tr>
<tr>
<td>3</td>
<td>C1</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>4</td>
<td>C1</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>5</td>
<td>C2</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>6</td>
<td>C2</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>7</td>
<td>C2</td>
<td>70%</td>
<td>30%</td>
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<tr>
<td>8</td>
<td>C2</td>
<td>35%</td>
<td>65%</td>
</tr>
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<td>9</td>
<td>C2</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>10</td>
<td>C3</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>11</td>
<td>C3</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>12</td>
<td>C3</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>13</td>
<td>C3</td>
<td>45%</td>
<td>55%</td>
</tr>
<tr>
<td>14</td>
<td>C4</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>15</td>
<td>C4</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>16</td>
<td>C4</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>17</td>
<td>C5</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>18</td>
<td>C5</td>
<td>35%</td>
<td>65%</td>
</tr>
<tr>
<td>19</td>
<td>C3</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>20</td>
<td>C3</td>
<td>25%</td>
<td>75%</td>
</tr>
</tbody>
</table>

**Impression**

Less than half (46%) of grade 5 Students in No. (9) Basic Education Primary School, Pathein, Myanmar who participated in the test incorrectly answered C1-C3 level questions. They even need more improvement in item C4-C5 which only 35% students with the correct answer meaning they need to improve their analysing, evaluating, and creating skills.

All of the tested students could not answer question number 14. This question is categorized as C4 level question which requires students’ analysis skill. This skill requires students to break down material into its component parts in order to understand its organizational structure.

Surprisingly, most of the students (95%) had an incorrect answer for question number 2 which is C1 level question which requires students’ are expected to retrieve information from memory. The students probably have not learnt about the material asked in the question or it can be a mistranslation issue since all questions tested were translated from English into Burmese.

**III. Monitoring and Evaluation (Summary):**

**A. Facilities Supported:**

This aspect consists with several features; classroom, device (computer and internet), and power supply.

In this aspect, the overall result was “poor”. The classroom cleanliness and size is in good condition. However, it is not equipped with proper laptop and projector which are required for this program. The school was only able to provide one laptop during the programme. The school borrowed the laptop and the projector for this activity. Moreover, the school does not have an internet connection which made the test was conducted using paper and pencil and the teachers could not practically learn to implement EDMODO in their classroom activities.
B. Human resources Supported

Teachers

Teachers are interested to use EDMODO in their class activities. However, they cannot implement EDMODO due to facility constraint. In addition, they need to improve their English skill since during the programme, we need an interpreter to translate the trainer’s presentation into local language.

Students

Students are difficult to give their impressions toward EDMODO since they cannot try to use it in their classroom activities due to facility constraint.

Management/Principals

The school principal and school management fully support the programme. A representative from the Ministry of Education, Myanmar also attended the activity which shows their support toward this activity.

C. Recommendations and Suggestions:

The online test could not be conducted at the school due to the facility constraint. During the programme, the school had to borrow a computer and a projector. To conduct the programme smoothly, the school needs to improve its ICT facility. Furthermore, the teachers need to improve their English skill.
E. Photo/documentation
Country: Myanmar

Date of Implementation: 2-3 November 2015

School Name and Address: No. (3) Basic Education Middle School, Nay Pyi Taw

Contact Person: Ms Daw Phyo Thinzar Ko

Results

1. Level of student grade 8 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>1</td>
<td>2</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>18</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>24</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>10</td>
<td>23%</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>21</td>
<td>49%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>12</td>
<td>28%</td>
<td></td>
</tr>
</tbody>
</table>

Science Grade 8

- ≥ 70:
- 51-69:
- ≤ 50:
The test was unable to be conducted with online basis due to unavailability of the internet in this school. The team then conducted the test using pen and paper method. The result for science subject showed that 23% of the tested students can be categorised as ready to adopt the 21st Century Curriculum in their science subject. The highest score was 80 (1 student) and the lowest was 35 (1 student). We identified that 43 students had wrong answers for question no 1 and no 10.

For mathematics, the result shows that only 2% of the students are ready to adopt 21st Century Curriculum in mathematics. The highest score gained by students was 70 and the lowest was 30. We also identified 41 students had wrongly answered for question no 11.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were two questions that most students failed to answer correctly, as follows:

(Q.1 = 3 correct)

1. Which statement explains why daylight and darkness occur on Earth?
   A. The Earth rotates on its axis.
   B. The sun rotates on its axis.
   C. The Earth’s axis is tilted.
   D. The Earth revolves around the sun.

The question is category C1 referring to the cognitive level of the Revised Bloom’s Taxonomy that refers to Remember. As the C1 level is the lowest level, we suspect that the quality of translation into local language include to the local character that quite difficult to be uploaded. This possible influences the result.
(Q.10 = 3 correct)

10. Maria collected the gas given off by a glowing piece of charcoal. The gas was then bubbled through a small amount of colorless limewater. Part of Maria’s report stated, “After the gas was put into the jar, the limewater gradually changed to a milky white color.” This statement is ...
A. an observation  
B. a conclusion  
C. a hypothesis  
D. an assumption of the investigation

Impression
Referring to the result above, it seems that the students have a cognitive level in Remembering which is C1 category question referring to the cognitive level of the Revised Bloom’s Taxonomy. As the C1 level is the lowest level, we suspect that the quality of translation into local language include to the local character that quite difficult to be uploaded. The translation possibly had influence to the result. In the future this variable has to get considerable attention since the level of students’ proficiency in English is quite various. On the other hand, question number 10 was referred to the cognitive skill C3 that is Analysing skill. To increase the skill in level C3, teachers can create science laboratory works more often.

B. Mathematics:

(Q.8 = 0 correct)

Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. $\frac{2}{3}$  
B. $\frac{3}{5}$  
C. $\frac{1}{2}$  
D. $\frac{2}{5}$

Impression:

This question asks students to solve the problem related to measurement of the trapezoid. The students should translate the problem into mathematical form (draw the problem) as a part to solve this problem.
He or she then decided that if \( AB = x \) then \( CD = \frac{2}{3} x \).

The area of \( ABCD \) is \( \frac{1}{2} \cdot t \cdot (x + \frac{2}{3} x) = t \cdot \left(\frac{5}{3} x\right) \).

The area in \( DEC \) is \( \frac{1}{2} \cdot t \cdot \left(\frac{2}{3} x\right) \).

The part of the area of \( ABCD \) is the area of \( DEC \) = \( \frac{\frac{1}{2} \cdot t \cdot \left(\frac{2}{3} x\right)}{\frac{1}{2} \cdot t \cdot \left(\frac{5}{3} x\right)} = \frac{2}{3} \approx 0.67 \).

It can be concluded that by using the information on the problem and think, especially High Order Thinking skills, the way to find part of the area of \( ABCD \) is the area of \( DEC \), the students have already applied the 21st century curriculum. So, grade 8 students in Myanmar have to improve their skills on analyse the problem by using the information and also think creatively to find the solution of the problem.

The average score for mathematics is 52.09

I. Monitoring and Evaluation:

Infrastructure:

- Having one computer laboratory with poor condition
- 5 PCs with specification: Pentium 3 and 1 Giga RAM (4 is supplied by the private sector, only one from the ministry of education)
- The school does not have the technical personnel in IT field
- The school rarely uses its computer laboratory
- There is only 1 computer that can be turned on and work fine, the others seem to be broken (maybe caused by viruses, error operating system, etc.)
- **The school does not have any internet connection** (only one local host for administration purpose).

Human Resources

- There is a teacher with IT background. Her skill in IT field is quite good. However, her tasks are mostly administrative tasks. In addition, she needs to improve her English skill.

Recommendations:

- It is recommended for the school to add at least 20 Pentium 4 computers.
- The school needs to hire more teachers with IT background (2 or 3 persons) and create a schedule for disseminating basic computer usage to all teachers.
• As internet connection is a vital aspect of the realising 21st century curriculum through SEA Digital Class, the school is highly recommended to plug internet connection in the school and add IT as a subject into school curricula.
The nominated school where the team conducted the program in Nay Pie Taw

Even though an internet facility relatively poor, but the teacher is still enthusiastic to learn Edmodo through laptop facilitator
Pen and paper method was implemented to conduct the test to the 43 students both science and mathematics.

School Computer Facility, only one computer can operate properly with its specification would be not fit for running Edmodo.
DIAGNOSTIC TEST REPORT

PRIMARY SCHOOL

Country: Philippines

Date of Implementation: 11 – 14 October 2015

School Name and Address: Tañong Integrated School, No. 2 Leoño St. Tañong, Malabon City

Contact Person: Dr Emelbon S. Mayrina and Imelda G. Guerin

Results

I. Level of student grade 5 readiness in each subject

A.

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>5</td>
<td>25%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>4</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>11</td>
<td>55%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>9</td>
<td>45%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>4</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>7</td>
<td>35%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Science

Score Percentage in Science Grade 5th
Tañong Integrated School, Malabon, Philippines

- ≤ 50
- 51-69
- ≥ 70
Score Percentage in Mathematics Grade 5th
Tañong Integrated School, Malabon, Philippines

Science Score for 5th Grade, Philippines
There are a total of twenty students participated the diagnostic test for grade 5. It is shown from the chart that most participants (55%) ranged on below fifty on the science score and the highest (85) is gained by four students based on the bar chart.

For mathematics, most students (45%) achieved score ranges above 70 and the highest score (86) is gained by two students.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.1 = 15% correct)

Which has the greatest effect on wind speed?
A. precipitation
B. cloud cover
C. wind direction
D. air pressure

Impression:
The most wrong answered question is question number 1 with level C1 (remember) in bloom taxonomy, this question intended to retrieve the knowledge from long-term memory, Since their mistakes occur in the lower level of Bloom’s Cognitive Taxonomy, teacher should improve students’ ability to use rote memorization and recall certain facts.
B. Mathematics

(Q.10 = 15% correct)

Amin folds this net to make a cube. What face is opposite face C?

Impression:
The question number 10 related to the spatial visualization ability or visual-spatial ability. This ability relates to mentally manipulate 2-dimensional or 3-dimensional figures. It is typically measured with simple cognitive tests and is predictive of user performance with some kinds of user interfaces. With 17 students out of 20 answered incorrectly in question #10 (85%), then it can be concluded that the sample students have difficulty with the spatial visualization ability or visual-spatial ability.

III. Monitoring and Evaluation:
The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported
This aspect consists with several features; classroom, device (computer and internet), and power supply to assess. The school was not provided a classroom for this program, they were used principal room instead, since the facilities were only available there.
The school also did not provide any computer, so the students bring their own gadget (laptop and tablet). The Wi-Fi connection was available, but it was limited speed and not adequate to provide 20 students.
B. Human resources Supported

Teachers
The overall observed teachers were good in internet and browser familiarities, and they were also giving a positive reaction on Edmodo, it means that overall teachers were interested in the subjects; they think that Edmodo will help them in learning and assessing process. The school PIC also showed a good performance in helpfulness and responsiveness.

Students
The students showed their enthusiast doing a test using Edmodo, they stated that Edmodo appearance is similar to Facebook. They are also familiar with Quipper (same with Edmodo), some of them were prefer Quipper because they are always using it before, and some of them choose Edmodo because its simplicity and student-friendly.

Management/Principals
The Principal was very supportive to this programme implementation; he provides all facilities in this program even in limited condition. He thinks that Edmodo is an appropriate tool for the 21st century learner, the students can be independent learner and the teachers can be less in working load (no more manual correction in test).

C. Recommendations and Suggestions

Content
Based on the result of the diagnostic test, 55% of students acquired score ≤50 for science subjects, but 45% of students acquired score ≤ 70 in mathematics, although in interview session the students stated that science is easier than math, but it is contrary in the result. In that case, it is recommended that the students may need more understanding of the knowledge they gain.

Technical Matters
Facilities and technical matters at least give an effect, variable and affected in test result. Slow internet connection and differences of gadget features will affect concentration and focus of students in doing the test. Low bandwidth of connection will not load the
Edmodo page perfectly, and also students would get a problem in reviewing a question with a picture. To work a test digitally, it is recommended that the school should provide appropriate facilities. The facility and equipment should be standardised with minimum requirements, from this program, we can conclude the minimum requirements to conduct future program: every classroom should provide with standard computer or laptop with at least one internet browser, the internet connection should adequate to serve more than 20 devices at once, Wi-Fi connection is strongly recommended for laptop or mobile gadget users.
Photo/Documentation in Primary School

SEAMEO Team and school managements in Primary school, Philippines

Team presentation on program overview, 21st Century Skills and Teacher training on Edmodo
5th grade students doing a science and math test with Edmodo & student interview

Overview of school facilities (with a limited size, this school can provide an LCD projector, screen, tablets, and internet connection)
DIAGNOSTIC TEST REPORT
SECONDARY SCHOOL

Country: Philippines

Date of Implementation: October 22 – 23, 2015

School Name and Address: Marikina Science High School, Juan Changyungco St, Sta. Elena, Marikina City, Philippines

Contact Person: Mr. Alberto D. Villamor (Principal III)
Ph:+6326479457Email: albertduclaynavillamor72@gmail.com

Results:
1. Level of student grade 8 readiness in each subject

Score Percentage for Science

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>22</td>
<td>56,42%</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>12</td>
<td>30,77%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>5</td>
<td>12,83%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>11</td>
<td>28,21%</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>13</td>
<td>33,34%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>15</td>
<td>38,47%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Science

SCORE PERCENTAGE IN SCIENCE GRADE 8TH
MARIKINA SCIENCE HIGH SCHOOL, PHILIPPINES

- ≥ 70: 56,42%
- 51 - 69: 30,77%
- ≤ 50: 12,83%
Diagrams (pie chart) for Mathematics

SCORE PERCENTAGE IN MATHEMATICS GRADE 8TH
MARIKINA SCIENCE HIGH SCHOOL, PHILIPPINES

≥ 70
28.21%

≤ 50
38.47%

51 - 69
33.34%

Science Score for 8th Grade, Philippines
There are a total of thirty nine students participated the diagnostic test for grade 8. It showed from the chart that most participants (56,43%) have reached above 70 and the highest (90) is gained only by one student based on the bar chart.

In mathematics, there were thirty seven students participated. Most students (38,47%) achieved score ranges below 50 and the highest score (91) is gained by one student.

II. Questions that most students have the wrong answer:

A. Science

(Q.8 = 18% correct)

What do you think about the relationship between the freezing and melting point of the substance based on the graph below?
A. The freezing point is less than the melting point
B. The freezing point is more than the melting point
C. The freezing point is the same as the melting point
D. Both has no relation

(Q.17 = 8% correct)

In the article of Ferwerda, refers to scientists, carbon dioxide is not the main cause of the Greenhouse effect.

Karin finds the following table showing the relative Greenhouse effect caused by four gases:

<table>
<thead>
<tr>
<th>Relative Greenhouse effect per molecule of gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

From this table Karin cannot conclude which gas is the main cause of the increase of the Greenhouse effect. The data in the table need to be combined with other data for Karin to conclude which gas is the main cause of the increase of the Greenhouse effect. Which other data does Karin need to collect?
A. Data about the absorption of the four gases by plants.
B. Data about the size of each of the four types of molecules.
C. Data about the amounts of each of the four gases in the atmosphere.
D. Data about the other gases in the atmosphere.

Impression:

Item question number 8 is classified to C3, which is Apply. This type of question requires student to apply science concept they have learned to a new situation/problem. In the perspective of 21st century skill, this C3 skill is related to student ability to reason effectively and problem solving. Unable to answer this type of question means that the student still needs more time in problem solving activities.

Question number 17 is categorized in the C5 which is Evaluate. This skill requires students to be able to make informed judgements based on some set of criteria. Evaluate skill is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question in science topic showed that the students still need to experience more activities regarding science process skill in their science lesson.
B. Mathematics

(Q.3 = 18% correct)

The graph of equation: $2x - 3y = 6$ is ...

**Impression:**
To solve the question #3 students can find the intersection of the graph of the line with the two axes (x and y).

For $x = 0 \rightarrow y = \cdot 2$, so the intersection of the graph of the line with the y axes is (0, -2).

For $y = 0 \rightarrow x = \cdot$, so the intersection of the graph of the line with the x axes is (3, -).  

With 32 students out of 39 students answered incorrectly in question number 3 (82.06%), then it can be concluded that the sample students have difficulty with graph ability. 

Thinking creatively using the strategies to solve the problem is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to explore more mathematical problems.
III. Monitoring and Evaluation
The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported
This aspect consists with several features; classroom, devices (computer and LCD projector performance and internet connection), and power supply to assess.
In this aspect, the overall result was “good”. The host school provides a computer laboratory room. The room cleanliness and size are in good condition and also equipped with adequate 50 computers, 1 laptop and 1 projector, as well as the softwares inside (especially internet browser) which are required for this program. All of the provided devices were good performed. For the internet connection, this feature is on good set and stable during the teacher training and student’s exam sessions. The host also provides the supporting device such as speaker-microphone, and camera.

B. Human resources Supported
Teachers
The overall 23 observed teachers were good in internet and browser familiarities, and they were also given a positive response on Edmodo, it means that overall teachers were interested in the subjects, they think that Edmodo is a good program to support the learning process, it is very useful, interesting, and easy access for students and teachers, it gives teachers assistance on improving and applying e-learning. The principal is fully supporting these activities, and hope that Edmodo training will be conducted and improved periodically. The host school provides a class PIC and technician that show a good performance in helpfulness and responsive to make this program run well.

Students
The students show their enthusiast doing a test using Edmodo, they stated that Edmodo appearance is similar to Facebook. They are also familiar with Quipper (same with Edmodo), and easy to use. Another positive impact is it would be very effective, especially
in being an alternative to the traditional written test. It helps the students learn in a modernized way. Quizzes and other activities can more accessible because receiving and submitting is just one click away.

Management/Principals
The Principal was very supportive to this program implementation, he provides all facilities in this program. She thinks that Edmodo is an appropriate tool for the 21st century learner, the students can be independent learner and the teachers can be less in working load (no more manual correction in test), and also eco-friendly (paperless).

IV. Recommendations and Suggestions

Content
Based on the result of the diagnostic test, 56.47% of students acquired score ≥70 for science subjects, and 28.21% of students acquired score ≥70 in mathematics. In that case, it is recommended that the students need to improve their knowledge in mathematics beside science. It accordance with the core subject science high school.

Technical Matters
Facilities and technical matters at least give an effect, variable and affected in test result. The overall technical matters are the internet connection only can be accessed in the principal’s room and computer laboratory room. Then, if the program will be applied in host school, the facilities and equipments should be standardize with minimum requirements, from this program, we can conclude the minimum requirements to conduct future program: every classroom should provide with standard computer or laptop with at least one internet browser and provide with internet connection. To work a test digitally, it is recommended that the school should provide appropriate facilities.
Photo/Documentation in Secondary School

SEAMEO Team and school managements in Marikina Science High School, Philippines

Team presentation on program overview, 21st Century Skills and Teacher training on Edmodo
8th grade students doing a science and math test with Edmodo

SEAMEO Team, the students, and IT Staff of Marikina Science High School
DIAGNOSTIC TEST REPORT

PRIMARY SCHOOL

Country : Thailand
Date of Implementation : 4 November 2015
School Name and Address : Rachawinit Primary School, Rachasrima Road, Dusit, Bangkok
Contact Person : Ms. Jeab Jaroomsri

Results

I. Level of student grade 5 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
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<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>8</td>
<td>35%</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>9</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>6</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>15</td>
<td>65%</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>5</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>3</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>

Diagrams (pie chart) for Science

Score Percentage in Science 5th Grade Rachawinit School, Bangkok

- 35% ≥ 70
- 26% 51-69
- 39% ≤ 50
- 13% ≤ 50
Diagrams (pie chart) for Mathematics

Mathematics Score Grade 5 Thailand

- Score <=50: 65%
- Score 51-69: 22%
- Score >=70: 13%

Science Score Grade 5, Thailand

Scores: 45, 50, 75, 75, 75, 70, 75, 65, 70, 65, 70, 40, 60, 60, 65, 75, 65, 65, 55, 55, 50, 35
There are a total of twenty three students participated the diagnostic test for grade 5 both for science and mathematics. It is shown from the chart that most participants (39%) ranged from 59 - 61 on the science score and the highest (75) is gained by five students based on the bar chart.

For mathematics, most students (65%) achieved score ranges above 70 and the highest score (85) is gained by one student.

II. Questions that most students have the wrong answer:

From the 20 science item being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.10 = 13% correct)

While hiking last year, Mike saw a large boulder next to a mountain trail. The boulder had no cracks. While hiking on the trail this year, he saw two large cracks in the boulder. Which of the following most likely caused these cracks to form?
A. shaking from high winds
B. pressure from flowing water
C. erosion due to falling rain and snow
D. weathering due to freezing and thawing
A girl had an idea that plants needed minerals from the soil for healthy growth. She does the experiment with a plant which is given plenty of sand, sunlight, water and minerals. In order to check her idea she also needed to use another plant. Which of the following should she use?

A. Give the other plant water, sunlight and minerals
B. Give the other plant minerals, water and sand
C. Give the other plant sunlight, sand and water
D. Give the other plant sun, sunlight and minerals

Impression:

Item question number 10 is classified to C3, which is Apply. This type of question requires student to apply science concept they have learned to a new situation/problem. In the perspective of 21st century skill, this C3 skill is related to student ability to reason effectively and problem solving. Unable to answer this type of question means that the student still needs more time in problem solving activities.

Question number 18 is categorized in the C5 which is Evaluate. This skill requires students to be able to make informed judgements based on some set of criteria. Evaluate skill is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question in science topic showed that the students still need to experience more activities regarding science process skill in their science lesson.

B. Mathematics

(Q.12 = 0% correct)

Ramzi buys trousers. The price attached in the trousers is $35.00, he get 35% for the cutting price. How much money does he pay?

A. $12.25  C. $ 25.00
B. $ 22.75  D. $ 47.25

Impression:

The question number 12 is belongs to social arithmetic close to the daily life problem. They should identify that “cutting price” in this question means price discount. If the students have a meaningful understanding of price discount, they can solve this problem easily. There are only two procedures to determine the sale price: calculate the discount by multiplying
the rate by the original price and calculate the sale price by subtracting the discount from original price.

Identified the problem followed by using the strategy to solve the problem is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to experience more mathematics problems.

III. Monitoring and Evaluation:

The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported

The diagnostic test was conducted in the school computer laboratory. From the observation conducted, the facilities are adequate for conducting the online test and the internet was quite capable to handle Edmodo application to be used by 20 students at the same time.

B. Human resources Supported

Teachers

There are 20 teachers participated in the workshop, but only few persons who able communicate in English, for that case, we were helped by interpreter to translate our English presentation, although they showed their enthusiasm in learning Edmodo.

Students

There were no problem met in conducting the diagnostic test and all the students could follow the instruction given to do the test.

Management/Principals

At that moment we did not have the opportunity to meet the principal due to another agenda that he was attending at the same time as the program run.
C. Recommendations and Suggestions

The language used is one of the very important aspects that could affect the result of the test. So it is recommended that before the test is take place, the item questions are reviewed by the teacher to avoid ambiguous statements or other misunderstanding in reading the question.
Photo/Documentation in Primary School
DIAGNOSTIC TEST REPORT
LOWER SECONDARY SCHOOL

Country: Thailand
Date of Implementation: 6 October 2015
School Name and Address: Bodindecha (Sing Singhaseni) School,
Soi Ramkhamhaeng 43/1, Phlabphla Sub Distrcit,
Wang Thonglang District, Bangkok
Contact Person: Ms. Jaroomsri

Results
The result of the diagnostic test is presented below.

I. Level of student grade 8 readiness in each subject

Score percentage for Science

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>18</td>
<td>90%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>2</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>18</td>
<td>90%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>2</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Pie Chart Diagram for Science Score

Score Percentage in Science 8th Grade Bodindecha School, Bangkok

- 90% ≥ 70
- 10% 51-69
- 0% ≤ 50
- 0% ≤ 50
There are a total of twenty students participated the diagnostic test for grade 8 both for science and mathematics. It is shown from the chart that most participants (90%) ranged from 70 and above on the science score and the highest (95) is gained by one student based on the bar chart.

For mathematics, most students (90%) achieved score ranges above 70 and the highest score (100) is gained by three students.

II. Questions that Most Students Had the Wrong Answer

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

A. Science

(Q.17 = 15% correct)

In the article of Ferwerda, refers to scientists, carbon dioxide is not the main cause of the Greenhouse effect.

Karin finds the following table showing the relative Greenhouse effect caused by four gases:

<table>
<thead>
<tr>
<th>Relative Greenhouse effect per molecule of gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>
From this table Karin cannot conclude which gas is the main cause of the increase of the Greenhouse effect. The data in the table need to be combined with other data for Karin to conclude which gas is the main cause of the increase of the Greenhouse effect.

Which other data does Karin need to collect?
A. Data about the absorption of the four gases by plants.
B. Data about the size of each of the four types of molecules.
C. Data about the amounts of each of the four gases in the atmosphere.
D. Data about the other gases in the atmosphere.

Impression:

Question number 17 is categorized in the C5 which is Evaluate. This skill requires students to be able to make informed judgements based on some set of criteria. Evaluate skill is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question in science topic showed that the students still need to experience more activities regarding science process skill in their science lesson.

A. Mathematics

(Q.3 = 30% correct)

The graph of equation: $2x - 3y = 6$ is ...

![Graph options]

A. 

B. 

C. 

D.
Impression:
The question number 3 asks students to choose a graph of a linear equation. The first strategy to solve this problem is to look for the intercepts of the graph on the abscissa and ordinate. The intercepts of the graph on the abscissa happened if the value of $y$ is 0 and ordinate the intercepts of the graph on the ordinate happened if the value of $x$ is 0. And then they should connect both intercept point to be a graph. Thinking creatively using the strategy to solve the problem is classified into one of the high order thinking skill which is related closely to the 21st century skill. Unable to solve this type of question showed that the students still need to explore more mathematical problems.

III. Monitoring and Evaluation:
The monitoring and evaluation is expected to seek information concerning the effectiveness and the impacts of the program. By direct observation and using evaluation instrument, it is obtained data as follows.

A. Facilities Supported
The diagnostic test was conducted in the school computer laboratory. From the observation conducted, the facilities are adequate for conducting the online test and the internet was quite capable to handle Edmodo application to be used by 20 students at the same time.

B. Human resources Supported
Teachers
There are 20 teachers participated in the workshop, but only few persons who able communicate in English, for that case, we were helped by interpreter to translate our English presentation. There are several teachers have already know and also use EDMODO in their class.

Students
There were no problem met in conducting the diagnostic test and all the students could follow the instruction given to do the test.
Management/Principals
At that moment we did not have the opportunity to meet the principal due to another agenda that he was attending at the same time as the program run

C. Recommendations and Suggestions

Based on the result, many students could achieve high score on the diagnostic test. Based on the interview conducted with program coordinator there, these are the high achieving students from the schools. For the next diagnostic test, it is also better to have a broader level of students to join the test.

The language used is one of the very important aspects that could affect the result of the test. So it is recommended that before the test is take place, the items question is reviewed by the teacher to avoid ambiguous statements or other misunderstanding in reading the question.
Photo/Documentation in Lower Secondary School
DIAGNOSTIC TEST REPORT
PRIMARY SCHOOL

Country: Timor Leste
Date of Implementation: 9-10 November 2015
School Name and Address: Escola Basica Villa Verde, Dili, Timor Leste
Contact Person: Ms. Maria Pinto

Results:

I. Level of student grade 5 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>1</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>21</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Score Percentage 5th grade in Science, Villa Verde, Dili, Timor Leste

- Data Science ≥70: 0%
- Data Science 51-69: 5%
- Data Science ≤50: 95%
There are a total of twenty one students participated the diagnostic test for grade 5. The test was conducted by pencil and paper method due to the lack of internet and computer facilities. It showed from the chart that most of the participants (95%) ranged on below fifty on the science score and the highest (55) is gained only by one student based on the bar chart.

For mathematics, most students (100%) achieved score ranges below 50 and the highest score (35) is gained by seven students.

II. Questions that most students have the wrong answer:

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

(Q.14 = 2% correct)

Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit?

A. his height  
B. his scar on his right cheek
C. his intelligence  
D. his ability to play the drums

(Q.18 = 2% correct)

A girl had an idea that plants needed minerals from the soil for healthy growth. She do the experiment with a plant which is given plenty of sand, sunlight, water and minerals. In order to check her idea she also needed to use another plant. Which of the following should she use?

A. Give the other plant water, sunlight and minerals  
B. Give the other plant minerals, water and sand
C. Give the other plant sunlight, sand and water  
D. Give the other plant sun, sunlight and minerals

Impression:

For question number 14, it is associated with C4 of Bloom’s Taxonomy (analyse), while question number 18 is associated with C5 of Bloom’s Taxonomy (Evaluate). However, both indicate that most students in Timor Leste still not mastery such type of items, because starting from C4 we may say that difficulties hierarchies of the item is increasing. If we can
say for the conclusion in science where there is only one student achieve scores in the range 51-69, then the conclusion expressed that most students in Timor Leste still need guidance.

B. Mathematics

(Q.7 = 0% correct)

What is the area of the rectangle in triangular units?

[Diagram of a rectangle divided into triangles]

A. 9  
B. 18  
C. 20  
D. 40

Impression:

Item number 7 belongs to measurement topics related to the area. In this item, students had to determine the number of tiles (triangles) to find the area of the rectangle. The meaningful understanding about the area of a figure helps so much to find the answer. But, none students find the correct answer. Hardly did students see that there are ten triangles in the horizontal edge. If students saw this, they would multiply this number four times or added them, ten by ten to get 40.

Analysing the problem and think creatively to solve the problems are classified into high order thinking skill which is related closely to the 21st century skill. Unable to solve these types of questions showed that the students still need to explore more mathematical problems.

III. Monitoring and Evaluation (Summary):

A. Facilities Supported:

1. Classroom or computer laboratory:
   Not Available.

2. Computer, supporting device and an internet connection
   Not Available.
3. Power supply and kit

Not Available.

B. Human resources Supported

Teachers:

Teachers in Timor Leste are very rarely know about computer skills.

Students

Student test using Paper and Pencil

Management/Principals

The school management, especially the principal, fully supports the program of Diagnostic test, however the lack infrastructure for running an Edmodo is the main obstacle

IV. Recommendations and Suggestions:

A. Content:

Student’s still needs intensive exercise and guidance in order to increase their understanding in science and more secure

B. Technical Matters:

More support from the Timor Leste government to provide infrastructure in order to run Edmodo for next year.
V. Photo/Documentation
DIAGNOSTIC TEST REPORT
LOWER SECONDARY SCHOOL

Country: Timor Leste
Date of Implementation: 10 November 2015
School Name and Address: Escola Basica Central Farol, Dili
Contact Person: Mr. Nicolau Ximenes

Results

1. Level of student grade 8 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Science</td>
<td>≥ 70</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>100%</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>0</td>
<td>0%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>0</td>
<td>0%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>20</td>
<td>100%</td>
<td>20</td>
</tr>
</tbody>
</table>

Score Percentage in Science of 8th Grade Students in Escola Basica Central Farol, Timor Leste

0% 100%

≥ 70 51 - 69 ≤ 50
Students' Score on Mathematics Grade 8

- Score >=70: 0%
- Score 51-69: 0%
- Score <=50: 100%

Science Score for 8th Grade, Timor Leste

Bar chart showing the distribution of scores from 1 to 20, with scores ranging from 20 to 50.
There are a total of twenty students participated the diagnostic test. The test was conducted by pencil and paper method due to the lack of internet and computer facilities. It showed from the chart that all of the participating students could not gain score higher than 50 and the highest score (50) is gained by two students based on the bar chart.

For mathematics, most students (100%) achieved score ranges below 50 and the highest score (40) is gained by one student.

II. Questions that Most Students Had the Wrong Answer

From the 20 test items being tested, there were several items that most students failed to answer correctly, as follows:

(Q.3 = 10% correct)

Which is an example of a chemical reaction?

A. The melting of ice.
B. The grinding of salt crystals to powder.
C. The burning of wood.
D. The evaporation of water from a puddle.
(Q.7 = 5% correct)

The diagram below represents the Sun, Earth, and the Moon as viewed from space. Letter X is a location on Earth’s surface.

Which diagram best represents the phase of the Moon as viewed from X?

A.  
B.  
C.  
D.  

(Not drawn to scale)

(Q.12 = 0% correct)

Which object listed in the table has the greatest density?

<table>
<thead>
<tr>
<th>Object</th>
<th>Mass of the object</th>
<th>Volume of the object</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>10,0 gram</td>
<td>10 cubic centimeters</td>
</tr>
<tr>
<td>W</td>
<td>11,0 gram</td>
<td>24 cubic centimeters</td>
</tr>
<tr>
<td>X</td>
<td>11,0 gram</td>
<td>12 cubic centimeters</td>
</tr>
<tr>
<td>Y</td>
<td>5,5 gram</td>
<td>4 cubic centimeters</td>
</tr>
<tr>
<td>Z</td>
<td>5,5 gram</td>
<td>11 cubic centimeters</td>
</tr>
</tbody>
</table>

A.  
B.  
C.  
D.  

III. Impression

Item question number 3 is classified to C1 which is Remember. This type of question requires students to recall information they have read or heard. Unable to answer this type of cognitive skill question might mean that the student has not yet learnt about the topic.
Item question number 7 is classified to C2, which is Understand. This type of question requires students to be able to express science concepts in their own words. Lacking to answer this type of question means that the student is not yet able to determine the meaning of the related science concept.

Item question number 12 is classified to C3, which is Apply. This type of question requires student to apply science concept they have learned to a new situation/problem. In the perspective of 21st century skill, this C3 skill is related to student ability to reason effectively and problem solving. Unable to answer this type of question means that the student still needs more time in problem solving activities.

IV. Monitoring and Evaluation (Summary):

A. Facilities Supported:

1. Classroom or computer laboratory:
   The school does not have any computer laboratory.

2. Computer, supporting device and an internet connection
   The school does not have any internet connections.

3. Power supply and kit
   The school does not have any power supply unit.

B. Human resources Supported

Teachers:

Teachers have limited opportunity to use ICT in class.

Students

Student test using Paper and Pencil

Management/Principals

The school principal supports the program, although there was lack of ICT infrastructure for implementing the digital class. The government has not yet given adequate support in term of ICT facilities for the school.
V. **Recommendations and Suggestions:**

A. **Content:**

Based on the evidence, students still need to get enhancement from low order thinking skill (C1 – C3) since these are the basic skills to reach the 21\textsuperscript{st} century skills.

B. **Technical Matters:**

More support from the Timor Leste government to provide infrastructure in order to run Edmodo for next year.

VI. **Photo/Documentation**
DIAGNOSTIC TEST REPORT OF GRADE 5

School Name and Address : Doan Thi Diem Primary School

Contact Person: Ms. Dao Thi Thuy

Phone : +84913037707

Email: daothuydtd@yahoo.com.vn

Results:

1. Level of student grade 5 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total student involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>8</td>
<td>29.63%</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>9</td>
<td>33.33%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>37.04%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>6</td>
<td>22.22%</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51-69</td>
<td>11</td>
<td>40.74%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>10</td>
<td>37.04%</td>
<td></td>
</tr>
</tbody>
</table>

Students' Score on Mathematics
Grade 5

![Pie chart showing students' scores on mathematics](image-url)
Students' Score on Mathematics Grade 5

Students' Score on Science Grade 5

Students' Score on Science Grade 5
II. Questions that most students have the wrong answer:

A. Mathematics:

Most students have the wrong answer to question number 12. Only one student successfully answers this item. It means that 96% students failed to find the correct answer.

The question is:

Ramzi buys trousers. The price attached in the trousers is $35.00, he get 35% for the cutting price. How much money does he pay?

A. $12.25  
B. $22.75  
C. $25.00  
D. $47.25

Impression:

This question asks the students to solve the problem related to number operations specific in social arithmetic. The students should analyse the discount given and think the price that Ramzi must pay after the discount. Might be they are not familiar with this question type. So, the students need to practice more by the question of analyse type to applied the 21st century curriculum.

The average score for mathematics is still poor, 56.8. The teacher should improve their teaching in mathematics by facilitated them to the activity to develop their thinking and creativity.

B. Science:

Write the questions:

The questions that most students answered incorrectly is number 14. 93% students incorrectly answer the question, it means that only two students successfully answer this item.

The question is described below.

14. Matt is a tall, eleven-year-old boy. He has a scar on his right cheek. He is intelligent and an excellent drummer. Which of his traits did he most likely inherit?

A. his height  
B. his scar on his right cheek  
C. his intelligence  
D. his ability to play the drums
**Impression:**

Based on the Bloom’s taxonomy, this question needed analyse skill. So, the students need to practice more by the question of the analyse to applied the 21st century curriculum.

**A. Facilities Supported:**

1. **Classroom or computer laboratory:**
   The computer laboratory is equipped with computers and a whiteboard. It is also neat and conducive. The laboratory size is adequate for participants. The LCD is also available. Overall, the computer laboratory aspect is excellent.

2. **Computer, supporting device and an internet connection**
   The computer laboratory has a good internet connection. The computers have proper programs/software (internet browser, picture editor, MS Office, etc.). The computers also have other supporting devices (VGA/HDMI converter, USB port, microphone and speaker, printer, etc.). Overall, the computer, supporting device and an internet connection is good.

3. **Power supply and kit**
   The power supply is stable and sufficient. The plug extensions are also sufficient. There were no UPS or fire extinguisher in the computer laboratory.

**B. Human resources Supported**

**Teachers:**
Overall, the teachers’ knowledge about computer is good. They are familiar with the internet. Also, they are interested with Edmodo and able to operate it. The technician and supporting staff are excellent, both in numbers, skill and knowledge about handling technical problems.

**Students:**
The students enjoy the test using Edmodo. They prefer online test rather than paper-and-pencil test.
Management/Principals:
The school management fully supports the program and facilitates the teachers in conducting the program.

Recommendations and Suggestions:

A. Content:

The language structure of the translation is not good. The questions in the diagnostic test should be better in accordance with the curriculum.

B. Technical Matters:

Since the school sees the promising future in learning by using Edmodo, they need a bigger bandwidth to accommodate online learning.

C. Photo/Documentation (that’s showing):

1. School Name Board

1. Teacher Training
2. Some supported facilities

3. Student during the test
DIAGNOSTIC TEST REPORT OF GRADE 8

Country : Vietnam

Date of Implementation : 21-22 October 2015

School Name and Address : Nguyen Tat Thanh Secondary School

Contact Person : Ms. Nguyen Thi Thu Anh

Tel : +84903297961

Email : thuanhntt@gmail.com

Results :

I. Level of student grade 8 readiness in each subject

<table>
<thead>
<tr>
<th>No</th>
<th>Subject</th>
<th>Score</th>
<th>Number of students</th>
<th>Percentage</th>
<th>Total students involve</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mathematics</td>
<td>≥ 70</td>
<td>39</td>
<td>95.12%</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51- 69</td>
<td>2</td>
<td>4.88%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>0</td>
<td>0.00%</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>≥ 70</td>
<td>13</td>
<td>31.71%</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51- 69</td>
<td>22</td>
<td>53.66%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 50</td>
<td>6</td>
<td>14.63%</td>
<td></td>
</tr>
</tbody>
</table>

Students' Score on Science Grade 8

- ≥70: 32%
- 51-69: 54%
- ≤50: 14%
Students' Score on Science Grade 8

Students' Score on Mathematics Grade 8

Students' Score on Mathematics Grade 8
II. Questions that most students have the wrong answer:

A. Mathematics

Write the questions:

The questions that most students have wrong answer is number 8. 20 from 41 students failed to answer this question. It means that only 51% students successfully answer the question number 8. The question is:

Given a trapezoid ABCD with AB//DC, and E is a point on the side AB. If the length of DC is two third of the length of AB, what part of the area of ABCD is the area of DEC?

A. $\frac{2}{3}$  
B. $\frac{3}{5}$  
C. $\frac{1}{2}$  
D. $\frac{2}{5}$

This question asks the students to solve the problem related to measurement of the trapezoid. The students should translate the problem to mathematical form (draw the problem) as a part to solve this problem. By using the information on the problem and think the way to find part of the area of ABCD is the area of DEC, the students have already applied the 21\textsuperscript{st} century curriculum. So, grade 8 students in Vietnam have to improve their skills on analyse the problem by using the information and also creative thinking to find the solution of the problem.

Based on students’ interview, they feel mathematics question is quite easy, so that most of them got a good score. The average score for mathematics is 86.83.

B. Science:

Most students have the wrong answer to question number 11. 36 from 41 students failed to answer this question. It means that only 12% students successfully answer the question number 11. The question is:
Question Number 11:

Which statement correctly compares the potential energy of the balls?

A. C has more potential energy than B
B. E has more potential energy than F
C. D has less potential energy than E
D. B has less potential energy than A

Impression:

Students feel that science items are more difficult than mathematics.

This question needed analyse skill because it asks the students to compare the potential energy of the balls. By using the information on the problem and think the way to find which balls have the most potential energy of the balls. The students must trained by the question of the analyse to applied the 21st century curriculum.

Based on students’ interview, they feel that science items are more difficult than mathematics. The average score for science is 59.85.

III. Monitoring and Evaluation (Summary):

The teachers are familiar with Edmodo since they have already learned it. The teachers, however, rarely used Edmodo, so they forgot to use some of the features. During the training, the teachers actively participated by asking questions about the problems they encountered. For example, some mathematics teachers asked the facilitator about how to
use equations in Edmodo and how to upload pictures they need to complete assignments or quizzes.

The participants also enjoyed the training because they realized that using Edmodo in the classroom is very beneficial in teaching and learning process. In this training, they learned how to develop test-items based on bloom’s taxonomy and make them appropriate with 21st century skills. In addition, they realized that being creative in making a joyful classroom situation and creating an enjoyable atmosphere in the classroom is essential. As a result, they hope that the school stakeholders will support them to use Edmodo by providing a good internet access for every teacher.

C. **Facilities Supported:**

This aspect consists with several features: computer laboratory, device (computer and internet), and power supply to assess.

In this aspect, the overall result was “good”. The computer laboratory cleanliness and size is in good condition and also equipped with the good condition of computers, laptops, and projectors, as well as the software inside (especially internet browser) which are required for this program. For the internet connection, this vital feature is on good set and should stable during the sessions, but the participants are expected to bring their own portable modem in case the internet is down.

D. **Human resources Supported:**

There are 21 teachers, including principal joint the training and 41 students who did the test. The school stakeholders ask an English teacher as a translator during the training and test since most of the participants, both the teachers and the students, find it difficult in understanding English instructions. The teacher has good ability in using EDMODO. For students, they also have good ability in using computers.
Recommendations and Suggestions:

A. Content:

- All of the teachers actively participated in the training. They were very interested in using *Edmodo* as a platform to develop their quality of teaching and learning process. They also want to participate in the other SEAMEO programs that help them improve their teaching skills. SEAMOLEC suggested the teachers to join the program using *D-Book (Digital Book) software*.

- At the end of the training, there was an agreement between the teachers and SEAMEO team to make a “Whatsapp group” as a medium of knowledge sharing.

- There is a translation problem for mathematics items. The teachers suggested to recheck the translation from English to Vietnamese.

B. Technical Matters: The schedule did not run well and the teachers almost did not have time to check the questions before distributing the test-items.

C. Photo/documentation:

School Name Board
Teacher Training
Students during the test
3. Some supported facilities