Achieving World-Class Targets with the CVIF Dynamic Learning Program

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DepEd Bohol DLP Writeshop
Tagbilaran City
8-9 February 2011; 14-15 February 2011
There is a need for new pedagogical perspectives given the global realities:

- A new generation of learners whose brains are wired differently.
- Information now readily accessible to learners (internet, cell phones, etc.)
- New results from Neuroscience
- An emerging worldwide lack of qualified teachers in the STEM disciplines.
- Political pressure of international assessments
Addressing the whole spectrum:

- Slow learners
- Average students
- Bright to brilliant students

Number Of students

Performance scores

Central Visayan Institute Foundation
Jagna, Bohol, November 2006
TRADITIONAL TEACHER-CENTERED METHODS:

- Generally boil down to lecture style
- Foster passive learning
- Learning too dependent on abilities of the teacher
- Unprepared teachers indulge in homilies, stories and even vulgar jokes
Bridging scientific research and the classroom

The CVIF Dynamic Learning Program (DLP)

(Implemented since 2002)
Lecture Class Discussion (70-80%)

Student Activity

Conventional

Independent Student Activity (70-80%)

Lecture Class Discussion

CVIF DLP
For all subjects, there is *no introductory lecture* before CVIF students do the learning activities (questions, problems, etc.).
Editors: Eric R. Kandel, James H. Schwartz and Thomas M. Jessell
Writing the Activities activates both the psychomotor and visual faculties of the brain.

• “Neurons that fire together are wired together.”

• “Neurons that fire out of sync, lose their link.”
The CVIF DLP Components

- Parallel Learning Groups (*Modified Aronson Jigsaw Strategy*)
- Activity-based Multi-domain Learning
- In-school Comprehensive Student Portfolio (*instead of notebooks*)
- Strategic Study / Rest Periods
- Integrated Spiritual-Cultural Formation and Nationhood
Parallel Learning Groups
(Simultaneous Classes)

Section 1
Facilitator

Section 2
Facilitator

Section 3
Facilitator

Expert Teacher
<table>
<thead>
<tr>
<th>Time</th>
<th>Min</th>
<th>First Year (3 classes)</th>
<th>Second Year (3 classes)</th>
<th>Third Year (3 classes)</th>
<th>Fourth Year (2 classes)</th>
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<tbody>
<tr>
<td>7:30-7:40</td>
<td>10</td>
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<td>MORNING PRAYERS and FLAG CEREMONY</td>
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<td>7:40-9:10</td>
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<td>MATH/CS</td>
<td>SCIENCE</td>
<td>MATH/CS</td>
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<td></td>
<td>RECESS</td>
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<td>SCIENCE</td>
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<td>SCIENCE</td>
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<td>11:00-12:00</td>
<td>60</td>
<td>TECHNOLOGY &amp; LIVELIHOOD EDUCATION / ENGLISH LABORATORY</td>
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<td></td>
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<td></td>
<td>LUNCH BREAK</td>
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<td>1:30-2:30</td>
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<td></td>
<td>LANGUAGES (ENGLISH &amp; FILIPINO)</td>
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<tr>
<td>3:30-5:00</td>
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<td></td>
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<td>ARALING PANLIPUNAN AND VALUES EDUCATION</td>
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### Class Schedule (Wednesday)
#### SY 2010-2011

<table>
<thead>
<tr>
<th>Time</th>
<th>Min</th>
<th>First Year (3 classes)</th>
<th>Second Year (3 classes)</th>
<th>Third Year (3 classes)</th>
<th>Fourth Year (2 classes)</th>
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</thead>
<tbody>
<tr>
<td>7:30-7:40</td>
<td>10</td>
<td>MORNING PRAYERS and FLAG CEREMONY</td>
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<tr>
<td>7:40-9:40</td>
<td>120</td>
<td>Field Exercises; Theory and Practicum</td>
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<td>9:40-10:00</td>
<td>20</td>
<td>RECESS</td>
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<tr>
<td>10:00-11:00</td>
<td>60</td>
<td>Theory</td>
<td></td>
<td></td>
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<tr>
<td>11:00-12:00</td>
<td>60</td>
<td>Health / Homeroom</td>
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<tr>
<td></td>
<td></td>
<td><strong>LUNCH BREAK</strong></td>
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<tr>
<td>1:30-2:30</td>
<td>60</td>
<td>No classes</td>
<td>Values</td>
<td>CAT</td>
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</tr>
<tr>
<td>2:30-3:30</td>
<td>60</td>
<td>No classes</td>
<td>No classes</td>
<td>Values</td>
<td></td>
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<tr>
<td>3:30-5:00</td>
<td>90</td>
<td>Meetings and remediation</td>
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**ACTIVITY SHEET**

<table>
<thead>
<tr>
<th>Name: ________________________</th>
<th>Grade/Score: ____________</th>
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<tbody>
<tr>
<td>Year and Section: ______________</td>
<td>Date: ________________</td>
</tr>
</tbody>
</table>

Please check the appropriate box.

**Subject**

- Religion/Values Ed.
- General Science
- Biology
- Chemistry
- Physics
- Math
- English
- Filipino
- TLE / IT
- MAPEH
- Araling Panlipunan
- CAdT

**Type of Activity**

- Concept Notes
- Skills / Exercise / Drill
- Laboratory Report
- Drawing / Art
- Formal Theme
- Informal Theme
- Others: _________________

**Activity Title:**

**Learning Targets:**

**Reference:**

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Page Numbers</th>
</tr>
</thead>
</table>
**MOTIVATION:**
Clear Learning Targets

- Written on the daily Activity Sheet
- Simple
- Specific
- Attainable
• Learning by doing
• Discovery approach
• Problem-solving
• Active, not passive, learning
• In-school activity policy
Designing Learning Activities

Concept Notes (Introductory Material)

Example/illustration

Questions Problems Exercises
A **simple machine** helps us do our work by reducing the force needed to carry out a task. Some simple machines help us do work by changing the direction of the force one has to apply.
• **The Lever**

A lever is a long plank or bar that is free to move about a fixed point whenever an effort force is applied. The following figure shows the different parts of a lever.
• **Fulcrum** – is the point where the lever is supported. The lever moves about the fulcrum.

• **Effort** – is the force exerted on one end of the lever.

• **Resistance** – is the force that the lever acts against – that is, the weight of the object or the load.

• **Effort arm** – is the distance from the fulcrum to the point where the effort is exerted.

• **Resistance arm** – is the distance from the resistance force to the fulcrum.

Note: The effort arm is the same as the effort distance, while the resistance arm is the same as the resistance distance.
Vocabulary:
• reducing
• plank
• resistance

Classroom Activity: Construct your own mini-lever with a wooden bar or ruler. Identify the different parts of your lever. Measure the effort distance and resistance distance for each load you place on your lever.
CONFIDENCE and COMPOSURE:

These are developed through progression from doable familiar activities to more complex tasks.
Instead of notebooks, the Comprehensive Student Portfolio

- Compilation of all activities, exams, quizzes, concept notes
- Color-coded for subject areas
- Cumulative scholarship (typical of scientists’ works)
- In-school Portfolio Policy
2008 National Career Assessment Examination (NCAE):

- 2 students got a percentile rank of 99+
- 1 student got a percentile rank of 99
- 2 students got a percentile rank of 98
- Etc...

19.1% of the CVIF seniors belong to the top 10% nationwide
(or 21 students out of 110 seniors got a percentile rank of 90 and above.)
2008 National Career Assessment Examination (NCAE):

25.45 % of the seniors belong to the top 10% nationwide in Reading Comprehension. (28 out of 110 students)

7 students got 99 % - tile Rank in Reading Comprehension.
## Improved Performance in Nationwide Exams conducted by the Department of Education

<table>
<thead>
<tr>
<th>Math</th>
<th>NSAT 2001</th>
<th>NCAE 2007</th>
<th>NCAE 2009</th>
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</thead>
<tbody>
<tr>
<td>Students with %-tile 90 &amp; above</td>
<td>1/66 (1.5%)</td>
<td>13/106 (12.3%)</td>
<td>21/115 (18.3%)</td>
</tr>
</tbody>
</table>

Central Visayan Institute Foundation  
Jagna, Bohol
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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td>Verbal Ability</td>
<td>Verbal Ability</td>
<td>Reading Comprehension</td>
<td>Reading Comprehension</td>
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<tr>
<td><strong>Mean</strong></td>
<td>40.2</td>
<td>52.5</td>
<td>63.9</td>
<td>60.3</td>
<td>69.2</td>
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<tr>
<td><strong>Median</strong></td>
<td>38</td>
<td>49</td>
<td>66</td>
<td>63</td>
<td>75</td>
</tr>
<tr>
<td><strong>90 to 99 % -tile</strong></td>
<td>2/66 (3 %)</td>
<td>10/106 (9 %)</td>
<td>20/115 (17 %)</td>
<td>18/106 (17 %)</td>
<td>26/115 (23 %)</td>
</tr>
<tr>
<td>Overall General Scholastic Achievement</td>
<td>NSAT 2001 No. of students</td>
<td>NCAE 2008 No. of students</td>
<td>NCAE 2009 No. of students</td>
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</tr>
<tr>
<td>99 - 99+</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>97</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90 - 99 %tile</td>
<td>1 of 66 (2%)</td>
<td>21 of 110 (19%)</td>
<td>27 of 115 (23%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
University of the Philippines College Admission Test (UPCAT)

Up to about 10% of CVIF seniors
What may be remarkable is that:

• The CVIF students have lectures and discussion only $1/4$, or even $1/5$ of the time (typically equivalent to one period a week, the rest being allotted for written activities);

• They have no homework throughout their 4 years in high school;

• The portfolios and all activities cannot be brought home (returned to the students at the end of the year).
Pedagogical insights from the CVIF DLP experience

**Process-induced learning** can be a more efficient pedagogical paradigm than teacher-induced learning.
EXAMPLE: the problem of motivation:

Conventional
- Games
- Stories
- Group work
- Recitation
- Board work
- Etc.

CVIF-DLP
- Daily protocol for writing of activities on the Activity Sheet
- Habit-forming (biological)

external  internal
THANK YOU