

# *Implementing Problem-based Learning in Higher Education:*

## *A Case Study of Challenges and Strategies*



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# *Purposes of the Study*

- To assess implementation of PBL in the management curriculum of CMMU over a 4-term period.
- To identify strengths and limitations of our implementation effort.
- To identify key factors impinging on the effectiveness of PBL implementation.

# *Background on C.M.M.U.*

- Started five years ago
- Semi-private University
- Currently graduating its 3rd class of Master of Management students
- Grown from 3 to 8 Program Areas
- Currently 750 M.M. students
- English instruction
- International Program

# *Mission of the College of Management, Mahidol University*

- *Create knowledge through research*
- *Adapt global knowledge*
- *Design knowledge-rich products and tools*
- *Develop knowledge-able students*



# *Student-Centered Instructional Philosophy*

- Personal learning & small classes
- Flexible purpose-built facility to support team-based learning
- Top-rated IT: Internet access, multi-media projectors, and stereo sound in all classrooms
- Student-centered learning focused on application of knowledge



# *Goals of Professional Education*

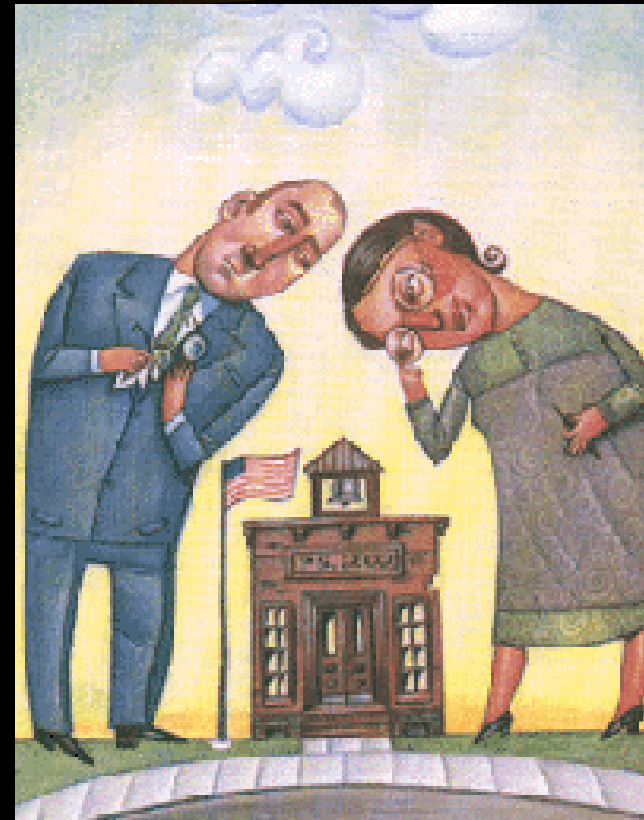
“Education in the  
professions should  
prepare students for  
action.”

Charles Gragg, 1940  
Harvard Business  
School



# *Results of Quality Audit, Sept. – Dec. 2000*

- Instruction at CMMU was teacher-centered
  - Desks lined up in rows
  - Technology not in working order
  - Instructors using m-m projectors to show “expensive” o-heads
- Learning still focused on reproduction rather than application of knowledge



# *General Research on the Outcomes of PBL*

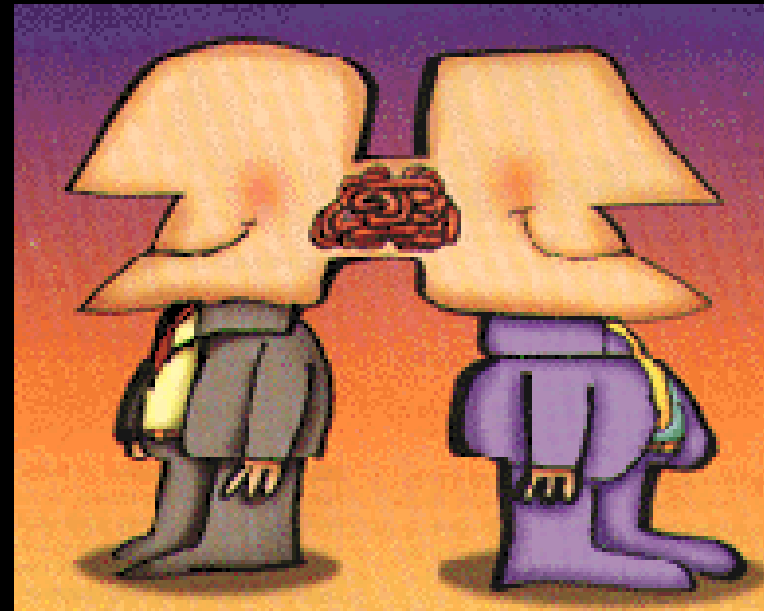


- Results on most cognitive outcomes are comparable to those from traditional curriculum.
- Students enjoy the PBL curriculum more , and demonstrate higher motivation and more productive attitudes towards their learning.
- Students complete their programs at a higher percentage and in less time.
- PBL curricula cover less content but in more depth.



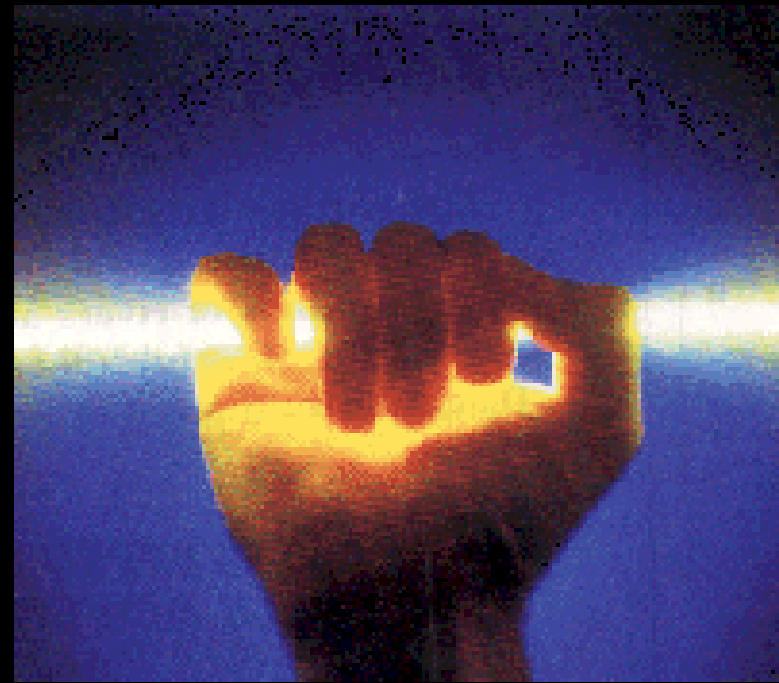
# *Decision Taken by Management and Faculty to Implement PBL*

- To align practice with the mission
- Voluntary participation
- 3-month timeline
- Implement a PBL track in the Capstone portion
- 6-credit, 2-term sequence of PBL projects as alternative to *Thesis/IS*



# *Implementation Strengths*

- In-house PBL expertise
- One PBL Project ready
- Strong faculty interest
- Management support
- Culture of innovation
- Shared vision of learning
- Small class size (< 30)
- Suitable class facilities



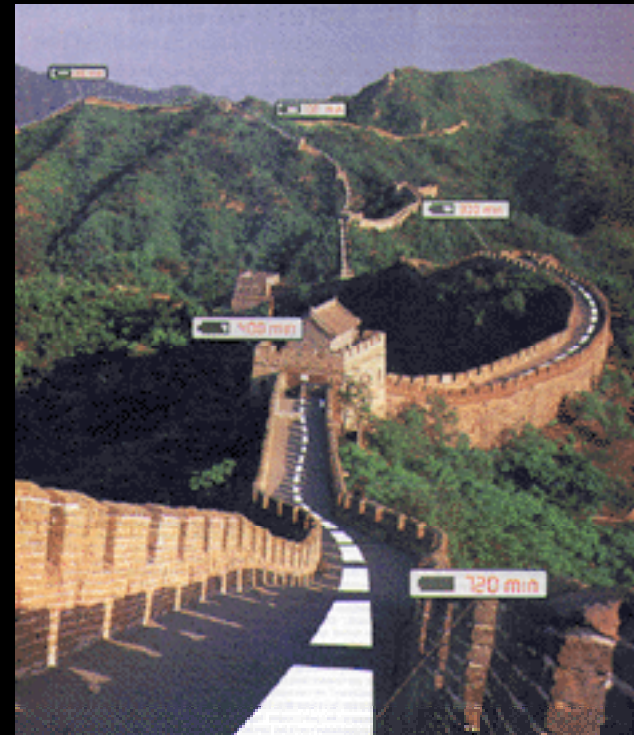
# *Potential Implementation Obstacles*

- Time for design of the curriculum
- Lack of instructor knowledge and skills
- Culture of student dependency on teachers
- Culture of VERY LOW teacher interdependency
- Potential popularity could make it a victim of success



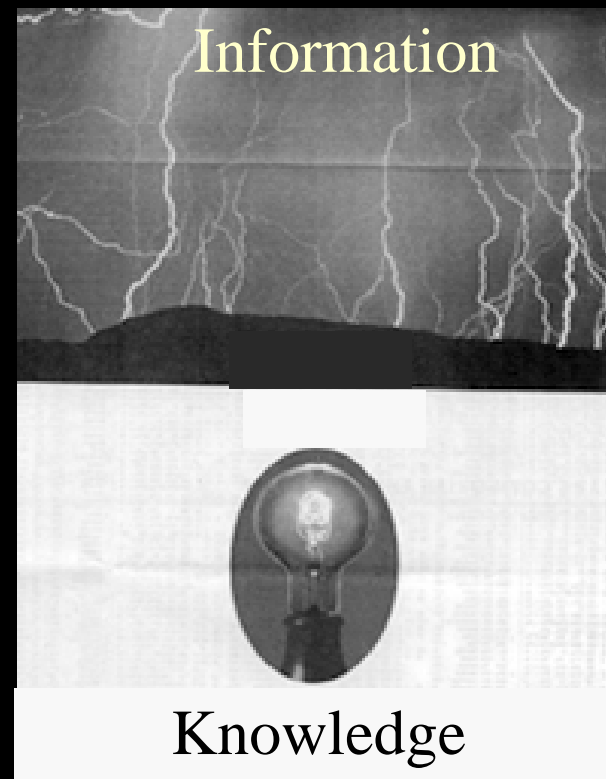
# *Implementation Process*

- Implemented in June 2001 with 110 students
- Instructors teams of 2 to 5
- Almost 300 students completed the 2-term course in the 1<sup>st</sup> year
- 2-Term sequence to consist of 5 modules or projects
- Topics covered range of MM specializations
- 27 instructors in 1st year



# *Features of PBL at CMMU*

- We use **problem-stimulated** PBL projects
- Students study in teams of 3 to 6 per project
- Assessment covers both individual and team **products**
- All of our projects use technology



# *Projects Used in Year One of PBL Implementation*

1. Making Change Happen!
2. Retail to e-tail
3. Strategies for Success
4. D2I (Data to Intelligence)
5. Managing Across Cultures
6. Projects and People



Gliding Towards the  
Unfamiliar

Rating

### Instructor Rating: CP vs Core Course

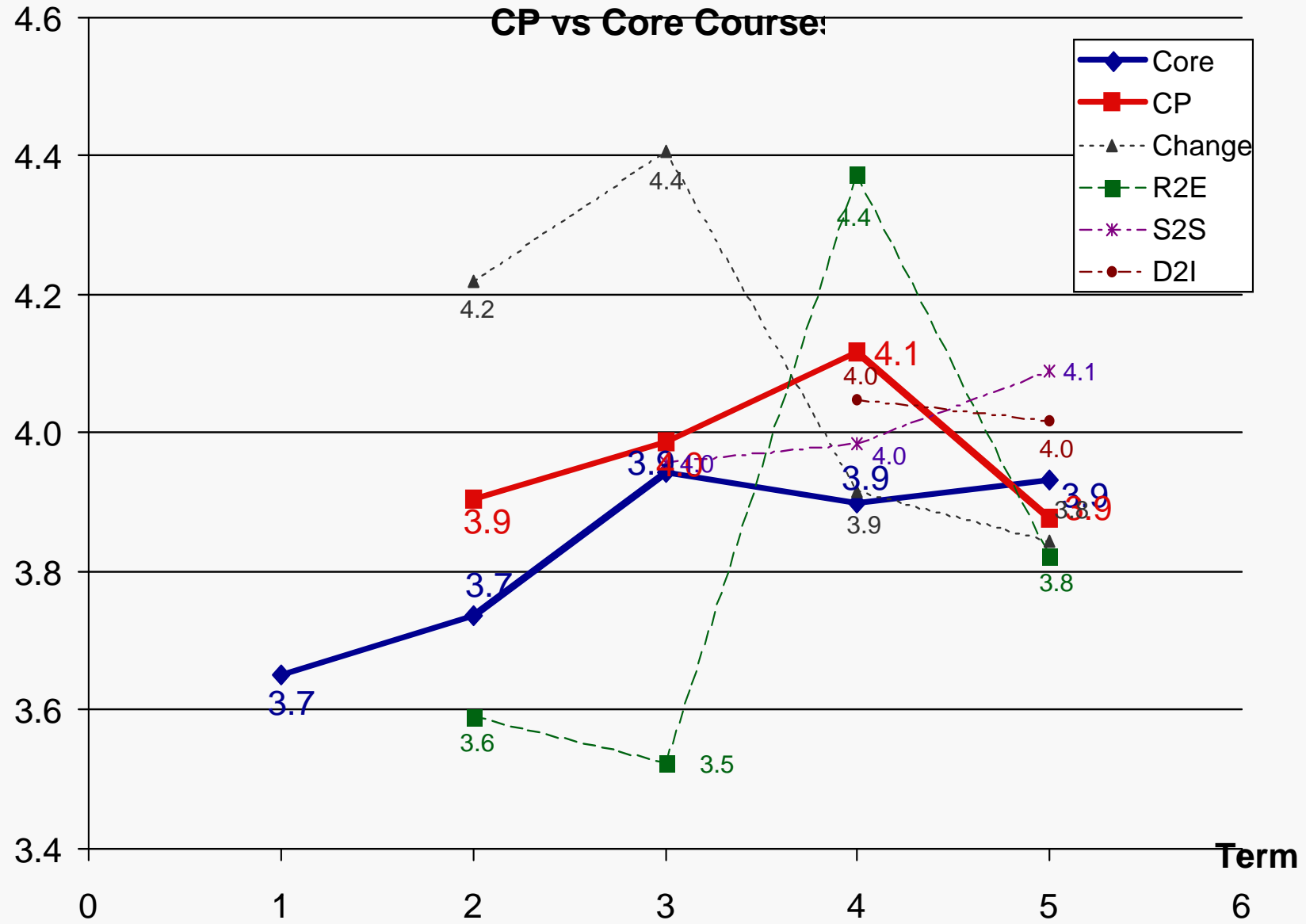
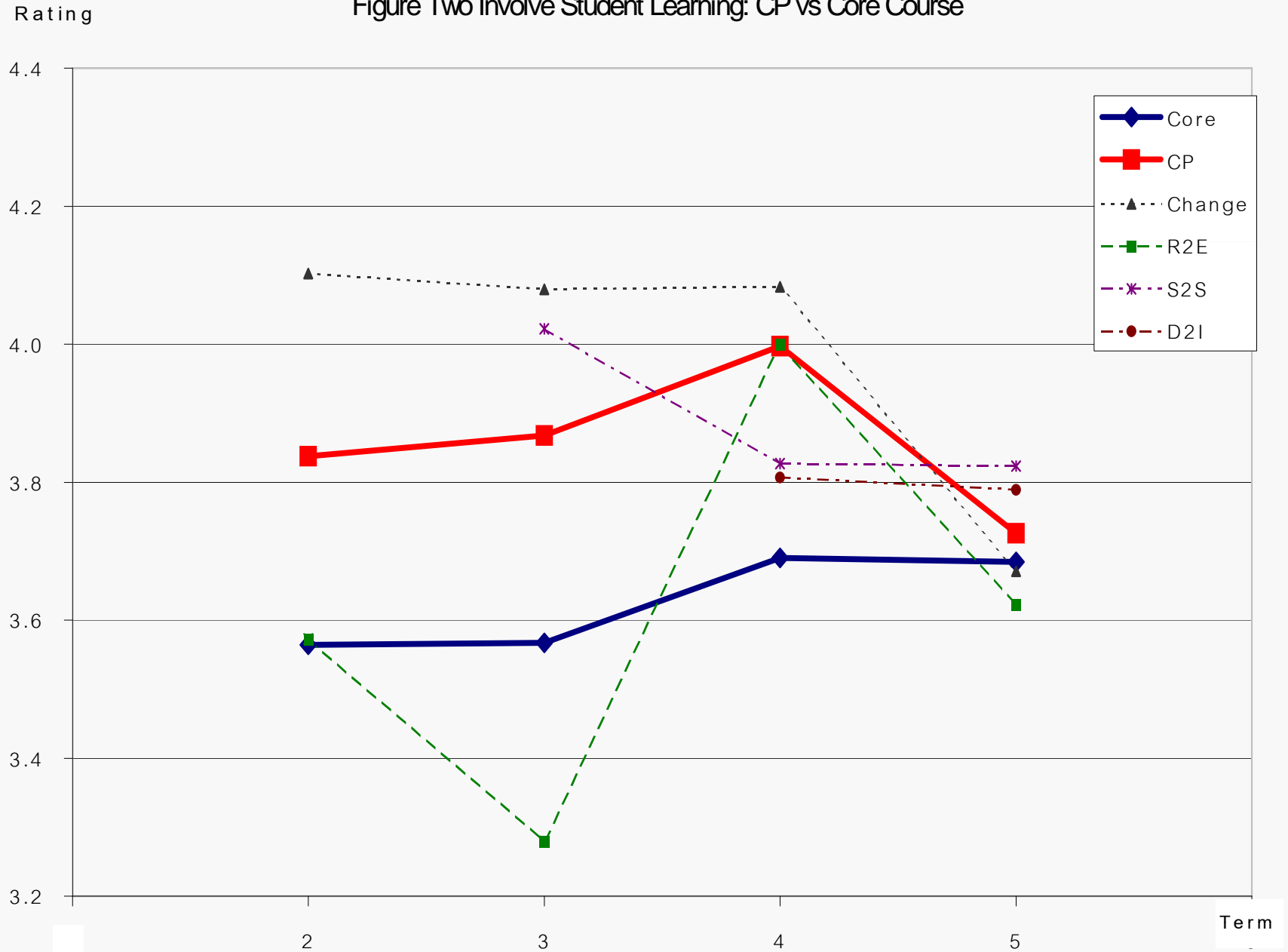


Figure Two Involve Student Learning: CP vs Core Course





# *Positive Results*

- CP has been implemented over a 4-term period with almost 600 students taking the 2 class sequence.
- Comparison to traditional Core Courses has been highly positive in the perception of students.
- Students see the PBL sequence as focused on practical application of knowledge and actively involving them in learning.
- PBL projects have been challenging and are forcing students to *demonstrate* their learning.
- Positive PBL attributes are migrating to other courses.

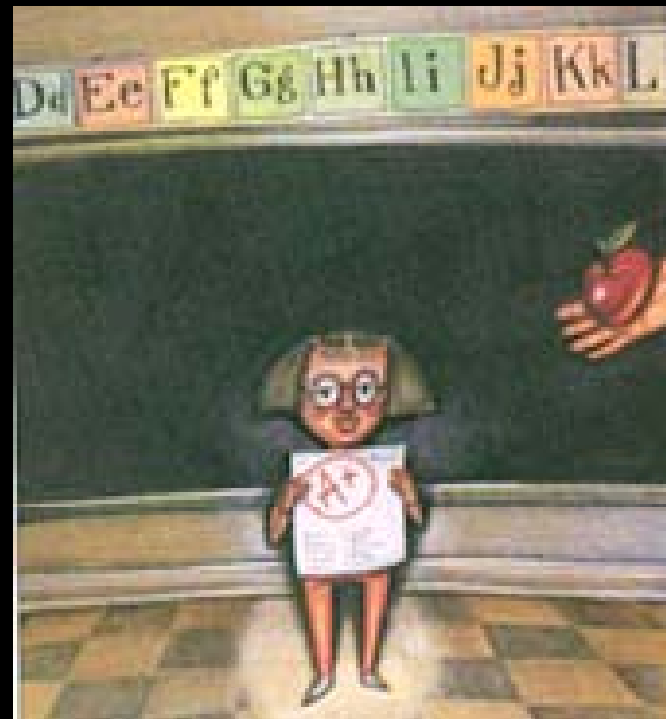
# *Limitations of the PBL Effort*

- Highlighted weaknesses in assessment in the college
- Required much higher instructor interdependency
- Heavy time commitment on assessment of student “products”
- High variance in quality/skill among instructors within a project team



# *What We Have Learned*

- Local factors are critical in pace of implementation
- Keep class size under 30
- Develop instructor skills, especially in assessment
- Smaller instructor teams are better (< 4)
- Use continuous formative assessment of the projects
- Thai students can adjust



# *Recommendations for Implementing PBL in Other Institutions*

- PBL can be a productive force for improvement of teaching and learning.
- Don't view PBL as the only way, but as one useful approach to learning – **many useful approaches to create active learning**
- PBL will not be suitable for all instructors and students.
- Assess your strengths and limitations in advance to set the pace of implementation.
- Assess frequently and be prepared to adjust.

*“Seeing and hearing is believing, but eating is knowing”*



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