

IMPROVING EFFECTIVENESS OF LEARNING THROUGH CLASS ACTIVITY ASSESSMENT: A CASE STUDY

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ABSTRACT

Most education reformers agree that effective learning in the classroom is based on both teachers' and students' co-operation and creativity in generating a good learning atmosphere. Many educational institutions are exploring new dimensions in class activity and assessment which not only complement the curriculum but form an integral part of it. Reports have shown that in today's environment, scoring straight As will not necessarily guarantee a student a place in university or in the working sector. Rather, students require greater exposure especially through having class activities and assessments inside and outside the classroom such as talks, workshops, seminars, forums and field trips. Such activities can improve the effectiveness of the students' learning process, and will not only contribute towards a higher final subject grade, but also better prepare the pre-university students for their next stage of education in the university.

This paper therefore focuses on the steps that could be taken to improve the effectiveness of learning through class activities and assessments. Specifically, it aims to gain feedback from students and lecturers at the pre-university level on how such activities can be conducted and assessed to improve the learning and teaching processes. The authors also investigate some possible activities that can fulfill this purpose such as the methods of assessment, challenges encountered by lecturers and students, and possible solutions. The information is mainly distilled from a survey conducted on students and staff involved in the Mathematics-Science and Social Sciences subjects taught in the Canadian International Matriculation Programme (CIMP).

Key words: Activities, assessment, teaching, learning, challenges.

INTRODUCTION

“Co-curriculum involvement to count for 10% in varsity intake” (The Star, 2006). This announcement in one of our local newspapers underscores the point that scoring straight As may not necessarily guarantee students a place in university, but being active in sports and taking part in competitions may, however, provide them an edge. This arises from The Malaysian Education Ministry announcement that assessment of applicants for public university intakes will be based on their academic achievement (90%) and activities (10%). These activities are known essentially as co-curriculum activities, defined as any event conducted outside the classroom that complements lessons (planned according to the curriculum) learnt within the classroom. Examples of such activities include National Service, involvement in sports and in community organizations such as Boy Scouts/Girl Guides and St. Johns' Ambulance. Today, many educational institutions are beginning to explore a further dimension to class activity assessment (CAA). Activities would not be limited to co-curricular activities outside the classroom, but include any form of assignments and projects conducted within or outside the campus that complement the

curriculum (besides the traditional mode of teaching which is more lecture and examination oriented).

THE FUNCTIONS OF CLASS ACTIVITY ASSESSMENT

How do class activities play a role in enhancing a student's pre-university (Pre-U) education? What are the benefits of incorporating these activities into a student's overall assessment? These may be summed up as follows:

- a. CAA allows students to engage in real-life activities. Instead of just memorizing theories, students are able to experience how these theories relate to the real world.
- b. It creates opportunities for students to acquire practical skills, such as leadership, time management, public speaking, research and communication skills.
- c. CAA helps students to gain a better understanding of a topic, leading to higher retention of what they have studied. As an ancient Chinese proverb says, *"I hear, and I forget. I see, and I remember. I do, and I understand."*

Studies by the National Training Laboratory (NTL) Institute (2009) also concluded that students retain 90% of what they learn when they teach someone else, and/or practice (apply) what they have learnt immediately; as compared to only 5% retention for students who learn from lectures alone (Figure 1).

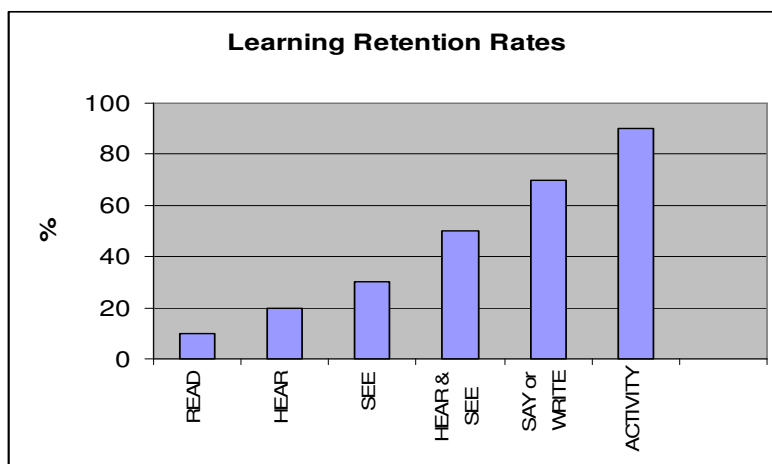


Figure 1. The Learning Pyramid (NTL Institute for Applied Behavioral Science, 2009)

- d. CAA provides a platform of various learning styles to accommodate multiple intelligences and the different learning styles of students today. This is confirmed through interviews with CIMP lecturers and depicted in Figure 2 (with regards to Howard Gardner's Multiple Intelligence Model). It summarises the various activities that they undertake in the courses they teach. Almost 77% of these activities are assessed and the marks contribute towards the final grade of the student. While other activities such as Community Service, Trekking, Earth Hour,

Recycling Campaign and Talent Contest are not assessed, they indirectly contribute towards the student’s final performance. Students who do not complete 10 hours of community service will not receive the Ontario Secondary School Diploma. Students who take part in various activities that benefit CIMP or Sunway University College will receive Certificates of Recognition which are commendable references for university or job applications. Figure 2 shows the types of activities and projects conducted in CIMP as part of the learning process which involve indoor and outdoor activities.

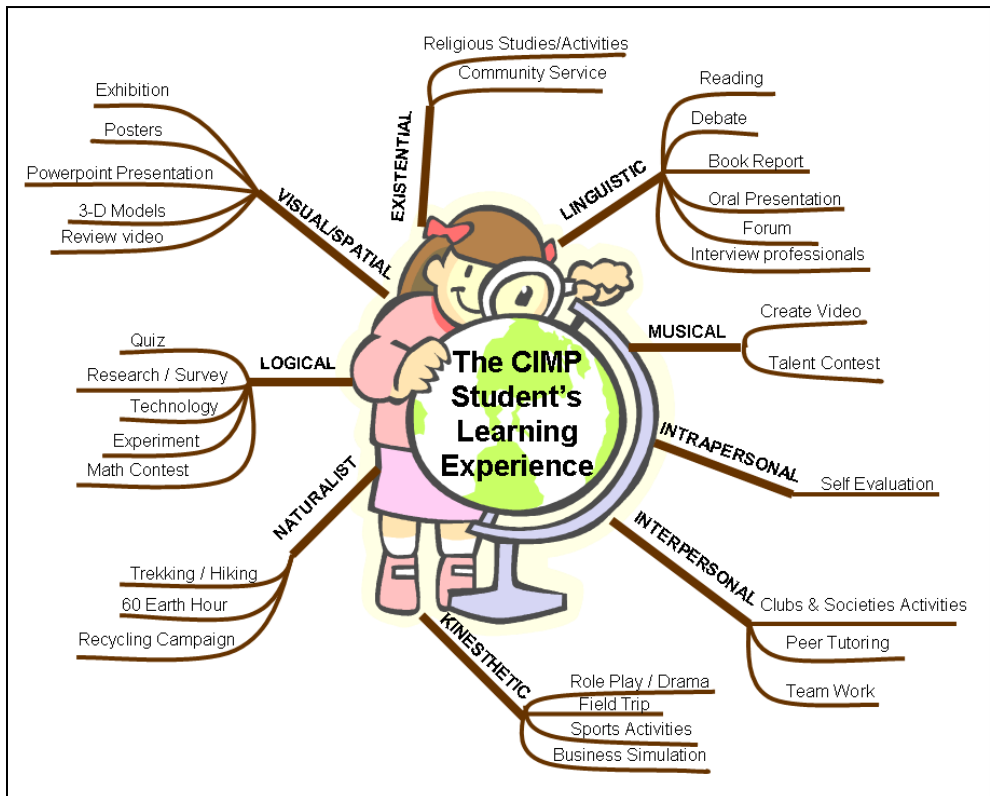


Figure 2. CIMP Activities /Project

THE SURVEY

Objective

In this study, the authors investigated some possible activities that can enhance the effectiveness of the class activity assessment. These include the methods of assessment, challenges encountered by teachers and students and possible solutions to the problems. The survey was carried out on students and lecturers of the Mathematics-Science and Social Sciences subjects in the CIMP curriculum.

Study Approach

Questionnaires were distributed to students, while qualitative data was collected from lecturers via direct interview approach.

Students' Feedback on Activity-based Assessment

The survey was conducted among 190 Pre-U students from two colleges in the Klang Valley to evaluate their perceptions of activity-based assessment. Students were asked to rate the following four statements from 1–5 (where 5 is 'strongly agree' and 1 is 'strongly disagree'):

- A. Activities with assessment can improve an individual's skills in the related subject.
- B. Activities which are assessed can improve a student's overall performance in the related subject.
- C. A Pre-U Programme with activity-based assessments will help a student to be better prepared for university.
- D. Activities with assessments will help us deal with issues in our working life.

The responses are tabulated in Table 1.

Table 1. Students' Perception of Activity-based Assessment

Statement/Rating	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
A	4	8	35	93	50
B	10	2	60	76	42
C	11	17	47	88	27
D	9	16	46	90	29

- 75% students agree that activities can improve their application skills in the particular subject.
- 62% agree that if activities are assessed, their overall performance (hence, grades) in the particular subject will improve.
- 61% agree that activity-based assessments will better prepare them for university.
- 63% students agree that activities will help them deal with issues in their future working lives.

In summary, the responses are skewed towards the higher ratings of 4 and 5, which are the “Agree” categories. The same group of students was also asked how working in a project group has helped them. Their experiences include:

- Builds confidence.
- Learn to be more open-minded to others’ ideas.
- Makes students more responsible in completing tasks allocated.
- Learn to be more tolerant/ patient towards team mates.
- Students learn to be cooperative and work together as a team (the most common response to this question).

We can therefore conclude that Pre-U students are receptive to incorporating activities as part of their course assessment. It also fulfils the functions of Pre-U education which is to equip students with not only intellectual knowledge but also to improve their skills in other areas such as leadership, social interaction, responsibility, discipline and self-confidence. These skills are not only applicable to life in university, but will extend to their working lives as well.

CIMP Lecturers’ Feedback on Activity-based Assessment

CIMP Lecturers were asked to comment on the effectiveness of conducting activities in the subjects they teach. Questions asked include:

- What are the main challenges in teaching your course?
- What are the solutions you have undertaken to overcome the challenges mentioned?
- Are activities included as part of your solutions? If “Yes”, what sort of activities have been used?
- Are these activities assessed? If “Yes”, how?

Their feedback is summarized under two categories based on their field of specialisation, that is, Mathematics/ Science or Social Science.

a) Mathematics/Science

- Helps students learn to make logical conclusions based on first-hand observations (from experiments and surveys).
- Helps students to have better retention of what they have learnt. For example, instead of memorizing a formula or theory word for word, students can sing or act out the concepts.

b) Social Science

- Makes learning more fun and interesting to the students. Instead of reading about a historical event from a book, students enjoy field trips that are relevant to the topic.

- Students learn that what they hear in class also applies to the world outside. Supplementing a class lesson with a talk/forum from a professional in a particular field of study enhances theoretical facts to the student.
- Expands awareness of current issues, both local and world-wide.

Lecturers of both categories also agree that the activities not only help students to work together as a team, but also provide opportunities for weaker students to interact with their peers and therefore learn from them.

Challenges in Activity-based Assessment

Although students and lecturers recognize the effectiveness of activity assessment, it does however come with many challenges. These include problems encountered by both students and lecturers:

The challenges faced by students include the following:

- Language problems – Especially low proficiency in English. As many students come from non-English medium schools, it can be a challenge for them to understand the lesson and comprehend the language at the same time.
- Lack of interest in certain subjects (wrong choice of subjects) – Selection of subjects may not be the student's choice but is influenced by family or peers. Students also do not see the connection between the subject taken and the real world.
- Adaptation to a different style of assessment – Malaysian secondary schools place more focus on examinations for assessment, while at CIMP, 70% assessment is based on course work and only 30% on final examinations.
- Time management – While it is effective to incorporate activities such as music, sports, drama into the learning system, students need to be able to balance the time involved in these activities with time required for classroom lectures, homework and revision.

The challenges faced by the lecturers include:

- Language problems among students – Lecturers may use terms which are not familiar to students.
- Time constraints – A lot of time is required to organize activities, especially those conducted off-campus. Although activities are effective, they should not be overly emphasized and teaching time should not be compromised.
- Budget constraints – Transport costs, entrance fees, speakers' costs, material costs in producing videos are just some of the costs that need to be budgeted for.
- Supervision – For off-campus activities, lecturers are required to be present to supervise and to ensure safety of students. More than one lecturer may be

needed for bigger groups, thereby requiring lecturers from other subjects to be roped in as well.

- Fair assessment – In group activities, there is a tendency for some students to put in a lot of effort in their project, while others may just take a “free ride” on their peers’ work. As such, individual assessment may be required.
- Stimulate interest of students by employing appropriate teaching strategies – The lecturer has to decide which strategy is best to effectively bring lessons across to students.
- Classroom participation – Quieter students need to be given a chance and encouraged to participate in classroom activities.

Efforts to Overcome the Challenges

Various efforts (activities) have been utilized in the CIMP to overcome the above mentioned challenges. Assessments are also constantly conducted to enable students to measure their performance and work at improving in their various skills.

Linguistically, placement tests are conducted at the beginning of the student’s first semester, to determine their level of English Literacy. They are then positioned into one of the four levels of English classes, matched to their level of proficiency. Activities to improve language skills include reading, oral presentations, report writing, drama, viewing and evaluating movies, and debates.

Activities that take up much time and require budget allocations include class field trips, creating movie clips (broadcasting & advertisement), conducting surveys, forums, talks, seminars, and exhibitions (setting up of booths). To assist students in managing their time in such projects, progress checks are conducted as part of the assessment so that students are guided by a project schedule. At the same time, students can also improve their financial management skills in the process. It has also been helpful that costs incurred for some major activities have been subsidized by CIMP’s funds.

To stimulate the students’ interest in classes, lecturers have to utilize a variety of teaching methods besides the conventional text book and lecture mode. This makes the learning process more interesting and fun for the students. Students also gain a wider perspective, realizing that what they learn in the classrooms is applicable to the world outside. Activities that serve this purpose include role playing (mock elections, court hearing, cultural celebrations), business simulations, attending and/or participating in exhibitions and Non-Government Organisation (NGO) fairs, watching and/or reading the current news and utilising technology (such as Smartboard and Blackboard) for presentations and discussions.

Most of these activities require group work. Hence there are ample opportunities for all students to participate. In major projects known as ISUs (Independent Study Units), students work together as a team to prepare, present and report their projects. Students who tend to be reserved in normal class sessions will be more vocal in oral presentations, more so if their marks are at stake!

How then can lecturers assess an individual student’s performance fairly? According to Lambert and Lines (2000), assessment involves formal contexts and procedures, including written, timed tests marked under strict conditions; and less formal settings

including listening and reading students' work. Continuous assessments are conducted throughout the course, whereby lecturers can determine a student's understanding of the subject. Formal assessments include quizzes, unit tests and the final examination. Informal assessments would be marks allocated to activities and projects. For informal assessments, to ascertain the level of contribution of a student in group work, team members can give an evaluation of their peers' input by using a rubric. The rubric is also utilized by lecturers for informal assessments. Samples of rubric adapted from Nelson's "Mathematics of Data Management – Teacher's Resource" (Zimmer et al., 2003) are shown in Appendix 1 and 2.

CONCLUSION

Foundation studies or Pre-University studies play a very important role in providing knowledge, skills and experience to students as early preparation to pursuing their studies at University level. The challenges encountered by students and the methods utilized in solving these issues at Pre-U level will provide them with higher motivation to excel at the next level of studies. Pre-university lecturers are confronted with a huge task in educating students not only to excel with good grades but to be well-rounded students who can share their knowledge, skills and experience with other people. According to the Arabic proverb, "*the knowledge without being practiced is like a tree without fruit*". Simply put, if the knowledge gained by students is not practiced or used for the good of people, then the knowledge is rendered almost useless.

According to our findings, using a variety of methods in the learning process, which involve inside and outside classroom activities would help students to understand a subject better. Creative strategies would create a harmonious class where there is contribution and participation from both lecturers and students. Therefore, the authors believe that the process of learning which involves activities-based assessment would help lecturers to deliver applicable information while students are able to understand the given information better. This would indeed make the process of Pre-U education much more meaningful and fun.

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REFERENCES

- Bell, J. H. & Short, S. (2003). Buckling down: Achieving and underachieving in the first year of university. *Journal of College Reading and Learning*, 34(1), 6-25.
- Lambert, D., & Lines, D. (2000). *Understanding assessment: Purposes, perceptions, practice*. Routledge Falmer, London.
- Leo, A.N. & Chan, F.M. (2009). *Multiple Intelligences & Learning Styles, Sunway University College Workshop*. Sunway Resort Hotel & Spa, 7th March, 2009.

- NTL Institute for Applied Behavioral Science. (2009). *The Learning Pyramid*. Retrieved 5th June, 2009 from <http://homepages.gold.ac.uk/polovina/learnpyramid/about.htm>
- The Star. (2006). Co-curriculum involvement to count for 10% in varsity intake. *The Star*, Tuesday 20th June, 2006
- Zimmer, D., Cooke, G., Craven, S., Farahani, B., Steinke, T., Kirkpatrick, C., Hill, J., Smith, S.K., & Steele, M. (2003), *Mathematics of data management-Teacher's resource*. Nelson, Ontario.

**APPENDIX 1. Rubric for Student's Self and Peers (Team Members) Evaluation
(Zimmer et al., 2003)**

SELF/ PEER ASSESSMENT

CATEGORIES	Level 1 Never	Level 2 Sometimes	Level 3 Always
Contributed ideas to group discussion			
Sourced and researched materials required			
Listened carefully to what others had to say			
Offered assistance to team members			
Stayed focused at the task			
Completed each task on time			
Contributed a fair share of effort to produce the group's final product			
Helped the group come to a decision about the final report			
TOTAL SCORE			

**APPENDIX 2. Rubric for Project Presentation Evaluation by Lecturer
(Zimmer et al., 2003)**

PROJECT PRESENTATION EVALUATION

CATEGORIES	LEVEL 1 50-59%	LEVEL 2 60-69%	LEVEL 3 70-79%	LEVEL 4 80-100%
KNOWLEDGE	<ul style="list-style-type: none"> • Limited resources • Limited evidence/example of proof/support 	<ul style="list-style-type: none"> • Some resources • Some evidence/example of proof/support 	<ul style="list-style-type: none"> • Considerable resources • Considerable amount of evidence/example 	<ul style="list-style-type: none"> • Thorough and highly effective research evidence • High degree of evidence or example
THINKING	<ul style="list-style-type: none"> • Limited evidence of purpose • Limited appeal to/awareness of audience • Limited planning • Limited degree of citing/crediting 	<ul style="list-style-type: none"> • Some evidence of purpose • Some appeal to/awareness of audience • Some planning • Some degree of citing/crediting 	<ul style="list-style-type: none"> • Strong evidence of purpose • Considerable appeal to/awareness of audience • Strong planning • Appropriately cited/credited 	<ul style="list-style-type: none"> • Highly aware of purpose • Highly effective in appeal to/awareness of audience • Thoroughly planned • Thoroughly cited/credited
COMMUNICATON	<ul style="list-style-type: none"> • Limited visual appeal • Limited clarity in articulation of ideas • Limited use of presentation skills – voice, gestures, facial expression, eye contact 	<ul style="list-style-type: none"> • Some visual appeal • Some clarity in articulation of ideas • Some use of presentation skills – voice, gestures, facial expression, eye contact 	<ul style="list-style-type: none"> • Considerable visual appeal • Considerable clarity in articulation of ideas • Considerable use of presentation skills – voice, gestures, facial expression, eye contact 	<ul style="list-style-type: none"> • Visual appeal highly effective • Clarity in articulation of ideas highly effective • Highly effective use of presentation skills – voice, gestures, facial expression, eye contact
APPLICATON	<ul style="list-style-type: none"> • Limited use of correct language conventions • Limited evidence of editing 	<ul style="list-style-type: none"> • Some use of correct language conventions • Some of evidence of editing 	<ul style="list-style-type: none"> • Considerable use of correct language conventions • Considerable evidence of editing 	<ul style="list-style-type: none"> • Use of language conventions is thorough and highly effective • Evidence of thorough editing
TOTAL SCORE				

