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- INTRODUCTION
- BACKGROUND
- TEACHING APPROACHES
- IMPLEMENTATION OF 7-MUST
- CONCLUSIONS
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INTRODUCTION

- Teaching large classes using conventional face-to-face lecture requires special teaching skills.

- Large Class $\Rightarrow \sim 60 - 1000+$ students.

- Asian students are relatively passive compared with Western students due to cultural differences.

- It is a challenge to teach large classes with a group of passive students.

- It is also a challenge for students to learn in large classes.
Objectives of this study:

(1) To share the experience of large class teaching by the authors.

(2) To propose a teaching approach named as “7-MUST”.
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BACKGROUND

• The authors have teaching experience in both Asian and Western countries for over 10 years.

• First author ⇒ Teaching Assistant in Australia, Lecture in Singapore and Hong Kong.

• Second author ⇒ Teaching Assistant in Taiwan and US, Lecture in Hong Kong.
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TEACHING APPROACHES

When teaching large classes, instructors often face difficulties such as:

• Difficult to attract the attention of students

• Difficult to interact with students

• Not easy to have eye contact with every single student

• Unlikely to recognize students’ names

The authors have implemented a “7-MUST” teaching approach to overcome the above problems.
TEACHING APPROACHES

The 7-MUST teaching approach includes the following:

1. Must have a heart for students
2. Must spend time to prepare for lectures
3. Must present well in lectures
4. Must always make students think in lectures
5. Must have two-way communication/interaction in lectures
6. Must get feedback from students
7. Must always think of ways to improve
7-MUST TEACHING APPROACH

1. Heart for students
2. Spend time
3. Present well
4. Make students think
5. Two-way communication and interaction
6. Get feedback
7. Always improve
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(1) **Must** have a heart for students

- Good instructor ⇒ Have a heart of understanding, enthusiasm, patience, and kindness for students.

- Extra patience to students ⇒ Different levels of student ability varying from mediocre to top-notch exist in a large class.

- Some instructors teach from their “high level” of knowledge ⇒ Beyond the level of students’ learning abilities.
IMPLEMENTATION OF 7-MUST

(1) **Must** have a heart for students

- The instructor must also have patience for less competent and passive students ⇒ By explaining concepts repeatedly in different ways and through different methods.

- Other than teaching technical materials, it is also important to care for the welfare of students.
(2) **Must** spend time to prepare for lectures

- A good instructor must be willing to spend time in preparing lectures.

- It is important to revise lecture notes and tutorial questions from time to time to include up-to-date engineering technology.

- Therefore, lecture preparation is a continuous process.
(3) **Must present well in lectures**

- It could make a significant difference between an instructor with good presentation skills and the one who delivers materials in a straightforward manner.

- **Good voice and eye contact are powerful tools.**

- In presenting abstract theories, it is necessary to use diagrams and models to illustrate the key components of the concepts.
(3) **Must present well in lectures**

- A student from Singapore once remarked “*A diagram explains a thousand words and a model explains a million words*”.

- Use illustrations with student involvement for explaining the teaching materials.

- Other useful teaching tools have been presented in the first presentation.
IMPLEMENTATION OF 7-MUST

(4) **Must always make students think in lectures**

- In large classes, students are often like signal receivers without data processing.

The following activities can stimulate students’ thinking:

- Get students to note down some lecture materials during the lecture ⇒ To keep their minds active.

- Give some apparently correct but wrong examples after teaching a theory ⇒ Ask the students to identify the mistakes in the example.
(5) **Must** have two-way communication/interaction in lectures

- Ask questions in the class.

- Even if there is no response from the students ⇒ Asking questions is not meaningless, because students might have already answered the questions in their minds.

- The purpose of two-way communication/interaction can be achieved.
IMPLEMENTATION OF 7-MUST

6) **Must get feedback from students**

- Get feedback ⇒ At the beginning of the semester, especially in the first few lectures, rather than waiting until the end of the semester (verbal or written).

- It is important to get feedback from both the top and poor academic students.

- The main purpose of getting feedback is to improve teaching quality.
(7) **Must always think of ways to improve**

- A good instructor must always have a positive attitude to improve his/her teaching.

- If the instructor thinks that his/her teaching is good, he/she will never improve.

- How to improve? ⇒ Review and revise teaching materials on clarity of lecture notes, the pace of the teaching and the use of illustrations to explain difficult concepts.
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CONCLUSIONS

• Conventional face-to-face lectures for large class teaching require special teaching skills.

• Asian students are comparatively more passive than Western students due to cultural differences.

• The authors have developed the 7-MUST teaching approach for large engineering classes in Asian countries.
CONCLUSIONS

• It has been proven successfully by obtaining good teaching evaluations from students in Hong Kong and Singapore Universities.

• Teaching is considered as equally important as research.

• As responsible instructors, it is our obligation to do the very best to teach students because the students of today will be the engineers of tomorrow.
Thank you

(1) Heart for students

(2) Spend time

(3) Present well

(4) Make students think

(5) Two-way communication and interaction

(6) Get feedback

(7) Always improve