

Title of the practice

Reduced class strength for improved student learning and employability

Objectives / intended outcomes of this “best practice” and what are the underlying principles or concepts of this practice (in about 100 words)?

Objectives of the Practice

Increased student-teacher interaction

Quicker feedback through better assessment from instructors

Enhanced learning experience for students through improved participation, especially in labs

More opportunities to learn from peers, augmenting collaborative and cooperative learning

More discipline and control over the class leading to increased student engagement

Underlying Principles

Faculty devote more time for thorough assessment of students’ assignments, laboratory and project work and providing feedback.

With increased interaction among classmates, students gain quality learning experience.

More comfortable seating posture, more room to manoeuvre and more personal space, could lead to higher levels of student focus, eventually lead to higher levels of student performance.

What were the contextual features or challenging issues that needed to be addressed in designing and implementing this practice (in about 150 words)?

We at Geethanjali College of Engineering and Technology (GCET) wanted to have a class size of 40 students for improving students’ capabilities. However, this requires higher infrastructure as well as faculty numbers to be increased by 50%. Unfortunately, constraints in the fixation of tuition fee make it financially unviable and therefore infeasible to have such smaller class sizes.

Keeping this in view, as a compromise, in CSE and ECE classes, each having 240 students, we have reduced the class strength to 48 students per section instead of the normal 60 students per section.

This has forced us to increase the number of faculty by 25% increasing expenditure on salaries of these two departments by more than 1.5 crore rupees/year. Over and above, operational expenditure of labs, in terms of consumables, equipment maintenance and repair, and electricity charges has increased. Expenditure on civil infrastructure and class room furniture also increased.

Describe the practice and its uniqueness in the context of India higher education. What were the constraints / limitations, if any, faced?

It's an established fact that students learn faster and perform better in smaller classes. A class size of about 30-40 students results in more individual attention, increased participation, and better communication between instructor and students. Students receive feedback quickly from peers and instructors, encounter more opportunities for hands-on learning than in large classes with 60 and more.

A few of us studied and worked abroad, have experienced that coursework in a class with lesser number of students is adapted to fit the needs of students. As already mentioned, we have kept our class size 48 instead of 60. Most of the colleges and universities in our country have 60 in a class.

Our classes have three-seater benches with six rows and four columns capable of accommodating 72 students. However, we have ensured the middle seat is kept vacant in each bench ensuring students have a more comfortable seating posture needed since students spend nearly 6/7 hours a day. This eliminates noise in classroom since opportunities for students to have cross talk is almost negligible as instructor can easily identify if anyone is talking and would have more control of the class, maintaining discipline and promoting better learning.

Due to reduced strength, instructors get to know students faster, tailor pedagogy catering to learning styles of a good number of students.

Reduced class strength is more conducive, facilitating hands-on assignments, particularly in labs, wherein just two students work at a workbench, instead of usual three, enhancing learning experience considerably.

Smaller classes encourage students, get involved in learning, sharing ideas, thoughts and views with peers and instructors, benefit from a more thorough assessment of their work, receiving feedback.

Students have a better chance to get to know classmates benefiting from their comments on assignments and presentations. Further, each student's contribution is acknowledged, particularly in discussion settings and learns from one another based on the contributions they make during class.

Reduced class size benefits slow learners and disadvantaged students with rural background. Facilitates improvements in student engagement, lower drop-out rates, better non-cognitive skills, promotes persistence and self-esteem among learners.

Greater individualization of instruction, better classroom control and, thus, better learning ambience. Instructors have individual interactions with students, consulting with parents, giving greater attention to students' work. Class size is an important determinant of student outcomes.

Constraints/Limitations:

Class size reduction involves recruitment of more teachers, requires additional infrastructure, operational expenditure and is quite expensive.

Evidence of Success

Provide evidence of success such as performance against targets and benchmarks, review/results. What do these results indicate? Describe in about 200 words.

Ever since 2016-17 academic year, we have kept our class size as 48, our graduate outcomes have improved.

More students have been participating in various co-curricular activities, namely, in Project/ Problem-based learning, paper/ poster presentations, incubation centre activities, Hackathons, programming contests and student club activities.

Students have designed and built several prototypes, developing collaborative and cooperative learning in groups, discussing ideas, exchanging views and thoughts, evolving ways to resolve conflict and reach agreement, becoming aware of feelings of members in a group, listening to ideas of others with open mind and respecting each other's views even if they don't agree with others.

With a smaller class size, students' group sizes are smaller, paving way for increased involvement and participation in group work, led to higher levels of student focus, resulting in higher levels of student performance. Students got more opportunities to interact with instructor obtaining feedback more frequently.

Reduction in class size has facilitated reduced workload on instructors and mentors as they need to assess lesser number of students' work, mentor lesser number of students resulting in

instructor spending quality time with them ensuring better and improved learning experience for students resulting in enhanced graduate outcomes and employability.

Problems Encountered and Resources Required

Please identify the problems encountered and resources required to implement the practice (in about 150 words).

We have tried to implement smaller class sizes in CE, EEE, ME and did so for one academic year. Unfortunately, number of admissions in CE, EEE and ME has been a bit low in first year. However, lateral entry students join in second year filling the vacant seats of first year. When dividing sections in second year, distribution of students in order of merit into third section needed students grouped earlier to be divided further. Parents and students complained as students by then have developed friendship with some and were reluctant to move to other section. Hence, we had to discontinue this in above disciplines.

More civil infrastructure in terms of class rooms, faculty cabins/cubicles and furniture is required, so also, more quality faculty, especially senior instructors for second year and third year classes of increased sections due to reduction of class strength. Obviously, more financial resources are needed. Unfortunately, salary of additional faculty is not considered while fixing tuition fee.