Large Class Splitting to Reduce Class Size

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Large Class Splitting to Reduce Class Size

The practice and the need it addresses

Large Class Splitting to Reduce Class Size

It is well recognized that smaller classes lead to improved student outcomes. However, instructor resources are limited, particularly for first year introductory classes.

Issues Being Addressed:
- Large class sizes (~100).
- Overly large lecture halls (seating ~200 students).
- Limited Student-Instructor Interaction due to the student count and lecture hall sizes.

Approach
To address this, for Fall 2016 we tried a split class approach which splits the class (~100) into two sections (~50 each). Each section still meets twice a week, however the instructor provides a lecture to one section and the other section is provided an in-class exercise lead by a Teaching Assistant (TA). Each section received the same lecture, same handouts, and same in-class exercises (on different days). The goal is to reduce students feeling "lost in the heard" due to large classes in overly large lecture halls and limited instructor-student interaction.

Trade-Offs
The trade-offs include reduced face-to-face instructor time vs higher quality interaction. This also allows the use of regular class rooms, instead of the overly large lecture halls (with many empty seats and a very distant 'back-row') which helps increase room scheduling options.

Results & Benefits
Results were generally positive and monitored in two areas, objective and subjective.

Objectively, test scores for test1, test2, and the final exam were slightly higher (~5%). Overall class results, as compared to previous fall semester:

<table>
<thead>
<tr>
<th></th>
<th>Passing</th>
<th>Non-Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Split</td>
<td>73.19%</td>
<td>26.8%</td>
</tr>
<tr>
<td>Split</td>
<td>81.44%</td>
<td>18.55%</td>
</tr>
</tbody>
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Passing includes A, B, and C. Non-passing includes C-, D, F, & W.

Subjective results include positive feedback from multiple guest lectures regarding a preference for the smaller classes sizes, even though that meant doing the guest lecture twice.

Required Resources

Teaching Assistant
The practice requires a dedicated, knowledgeable TA support person who is able to independently lead in-class exercises. No other external resources are required.

Instructor Oversight of TA
There are additional instructor impacts regarding logistical coordination of TA, development of meaningful in-class activities, and scheduling for guest lectures (each performing two lectures instead of one).

Applicability
The practice is applicable and repeatable for other instructors and other disciplines with large classes, meeting twice a week, that could support in-class activity sessions.

Potential Challenges
- Requires dedicated, highly reliable, and effective TA support.
- Logistical coordination for TA and guest lecturers.
- Development of meaningful in-class activities with the potential added burden of scoring the in-class exercises.

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Ed Jorgensen, Department of Computer Science

Resources and where to find them

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Typical Large Lecture Hall Class Room (TBE-107)
Seats 180 students
Due to size and configuration, instructor can not easily hear and interact with all students.

Typical Class Room (TBE-B178)
Seats 58 students
Standard class, easily able to hear and interact with all students.