Small Group Tutorials

For effective (e)teaching and learning

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Foreword

- This is not a research talk
- But it can be converted to a research topic/project by adding relevant research components

Background – St Andrews University

- For 1st years
  - Lectures 1h x 3 times/week
  - Tutorials 1h x 1 times/week
  - Labs 3h x 1 times/week
- For 2nd years
  - as above, but Lectures 1h x 2times/week
- For 3rd years
  - as above, but no labs
- For 4th years
  - as above, but no tutorials or labs

- Lectures:
  - Not compulsory
  - Held as large classes
- Labs
  - Attendance not compulsory
  - But the task is compulsory, and assessed (up to 40% of module mark)
- Tutorials
  - Attendance mandatory
  - Not assessed
  - Held as small group tutorials

Tutorial Anatomy

- Tutorial sheet is released a week prior
- Based on immediate or cumulative lecture content up to then
- batch is divided into groups of 6-8 students, and assigned a tutor
  - The tutor can be a professor, senior lecturer, lecturer, associate lecturer, demonstrator (instructor), or even a PhD student
- the tutorial has a fixed schedule each week, where students are supposed to meet the tutor
- how the tutorial is run is up to the tutor and students
  - can tightly (or loosely) stick to the tutorial sheet
  - use pen/paper/white-board/projector/code
  - can ignore the tutorial sheet and chat about relevant (or irrelevant) things
- activity is moderated, reporting processes have been setup

Tutorial Recommendations

- Priority ONE – get students to engage
  - Round robin discussions
  - point-and-ask
  - work on a solution together (whiteboard, or code)
- Priority TWO – a channel for direct feedback on quality of service and actual practical problems encountered
  - tutor is a direct port of call for the student, for any academic issue or problems e.g. lateness, disabilities, penalties, advice, references, etc.
- Priority THREE – clarification of subject content which is not possible at the lecture

Benefits

- Creates a closer relationship between students and faculty therefore increased student satisfaction
  - St Andrews ranks #1 in UK for student satisfaction (TGUC) https://standrewsqv.org.uk/2019/05/st-andrews-1st-for-student-satisfaction-again
  - Small group interaction is a key contributor to this when we took student feedback
    - they now have a dedicated first contact point in the university, ONE person to ask if something goes wrong, or have any doubt. Having such a single point of contact is vital for student satisfaction and give a sense of security and belongingness - basically showing that the university cares about you, especially in online situations, this becomes more important
- Direct routes for faculty / parents / guardians – to check student progress
- Guaranteed student attendance/engagement
  - guaranteed return on effort spent on preparing material and delivery

Places where this worked - A/L Tuition

- Ref: Dr Amith Pussella
  - Renowned Physics tuition master with mass classes 1000-2000 students
- Currently he's recruited a number of alumni (past A/L students who are campus selected and waiting for entry) to carry out small group online classes under his supervision
  - He provides the content and guidance via online meeting for these alumni, and divides the current A/L students among them in a coordinated fashion
  - He allows them to run their own timetables, but has a reporting process & management structure so he's up to date with the problems and concerns
  - He pays the alumni to do these classes (a portion of the student fees goes to them)
  - Benefit: the students get a small group experience, close contact, and ability to discuss questions in detail – using Amith Pussella's quality content as a base
- This is very similar to an LIC and his group of instructors

Credits: Ms Vijani Piyawaradana for the lead

Other places where this has worked

- IT3060 HCI
  - small groups for project groups (labs), where 5-students are assigned a supervisor (instructor) with weekly contact points
- IE4131 HCI
  - the entire class is 12 students, therefore like family
- Kuppis (state universities)
  - small groups informally arranged between students to clarify lecture content
- CDAP project supervision
  - weekly/bi-weekly meeting time arranged to discuss projects, but sometimes leads to discussions about study-curriculum in general

Methodology

- Take the students in a module, and divide them into small groups (4 <= size <= 8)
  - assign a staff member per small group, one staff member will get multiple groups (e.g. around 15-30)
- Create a communication platform for these small groups e.g. Teams
- Arrange scheduled activities for this small group. Individual modules can decide such as:
  - what the activity is:
    - Develop a program together (everyone codes on the same program in real time, and help fix each others' errors) using a collaborative IDE e.g. REPL
    - Discussion of a tutorial or lab sheet
    - Discussion of exam questions
    - Complete a part of a semester-long project as a group (e.g. HCI, UEE, ITP modules)
  - the frequency and duration of interaction
    - weekly? bi-weekly? twice-weekly? 1h? 2h? etc.
  - how the activity is assessed
    - graded? not-graded? marks given for attendance? etc.

Worked Example – IT3060 (HCI)

- 525 students registered (as at 25/07/2020), and 7 instructors
- Decided on 5 students per small-group
- This gives us 525/5 = 105 small-groups and 105/7 = 15 groups per instructor
- Created 7 Teams (one per instructor) with 15 channels each (one per small group) and added students.
- In IT3060, each lab-sheet is a step of a continuous semester long project. A different problem is given to each small-group. Students must do the lab sheet and upload the answers to courseweb. This is marked by the instructor. 50% of CA marks (25% of overall marks) are allocated for this.
- Propose to arrange 30min/week of live interaction on Teams, adding ~8h workload per instructor for this module (including prep). Not sure if we'll keep or remove the webinars.
- In SE3050 (UEE), the same thing but group size = 4, instructors = 3, and 63 small-groups
  - hence 21 groups per instructor.
- Same with ITP …

Tools and Platforms

- MS Teams for managing these groups
  - One Team per instructor per module
  - One private channel per small-group inside the Team
  - Each channel has its own discussion portal (wall), and shared file space
  - Teams video calls for their weekly sessions

- Ask students/staff to install data packages
  - Rs 200 for 30GB of Teams, Zoom, Skype, Office365
  - Offered by SLT, Mobitel, and Dialog
  - For staff, can allow them to reclaim expenses (400/month) from SLIIT
  - With a good connection, all parties could have their webcams on, which increases engagement and effectiveness of the session.

Leaving thoughts

- Can we do this at SLIIT?
- If so:
  - what changes are required to the process?
  - what resources are required?
  - what activities can we do under this model?
  - what are the other benefits I've missed?
  - what are the challenges of doing this?