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Evaluating the use of summer and winter schools as part of a flexible curriculum to 'move the middle'

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Goal of summer and winter schools

- Final mark slightly below the passing grade of 50% (40-49%)
- Module taken during the course of one semester
- Additional opportunity to progress in their studies (second chance opportunities initiatives in QEP)
- Intensive two-week course
 - In-depth focus on important aspects of the work covered during the semester

Research design

- Four modules in STEM's
- Analysis of student performance
 - Pass rates of SS students and repeaters
- Class observations
- Interviews with lecturers
- Interviews with students



Analysis of student performance data

- The pass rates of summer school students is higher than those of repeaters with one exception:
 - 2013 Economics summer school.
- The mean scores (GPA) of summer schools are significantly higher than those of the mainstream modules in all six modules
- Similarly, the mean scores of the repeated modules were significantly higher than the means of the mainstream module in all but one case:
 - repeated Mathematics module for 2015 does not differ significantly the mainstream 2014 module
- Summer school students achieved higher scores on average than repeaters

Class observations

- Content condensed, intense, practical
 - Practical in nature, discussion of test problems, daily class test
- Smaller class size
 - 20-33% of mainstream, more attention on students, improved participation
- Potential v realised greater student participation
 - Active participation in class expected, yet not all students actively participate, disengage

Interviews with lecturers: Presentation and context – critical success factors

- Pace suited to specific target group
- Deep exploration of problem areas
- More individualized attention
- Assessment follows teaching
- Reduced stress for students
- Compulsory class attendance



Interviews with lecturers: Reasons for enrolling in summer schools

- Nature of the module in their programme
 - foundational module (service module)
- Self-efficacy and attitude
 - subjects like Mathematics and Chemistry are perceived to be 'difficult' and their attitude affects their level of engagement
- Reliance on examination not semester mark to pass overall
 - Underestimate the workload and continuous engagement



Interviews with lecturers: Student engagement

- Class size matters
 - Greater access to lecturers
- Student attitude and historical self-efficacy matter
 - Disengagement with SS content: ‘mental block’
- Who teaches matters
 - Student centred lecturers: approachable
 - Single presenter

Interviews with lecturers: Impact on moving the middle

- Future success depends on critical commitment (of students) to the summer school principles:
 - the importance of focusing on the work at hand;
 - committing to active participation;
 - working through the content diligently;
 - not underestimating the workload;
 - regular class attendance; and
 - identifying and correcting past mistakes through revision of the content.
- Unintended consequences (teach-to-test)
- Who's in the class? (strategic choices)



Interviews with lecturers: Recommendation - to adapt mainstream modules

- Continuous assessment
 - Online via LMS, foster Self-Regulated Learning
- Class attendance as a key to success
 - Improve engagement and participation
- Blended learning to engage students outside the classroom
 - Include web-based learning

Interviews with students: Reasons for failing the mainstream module

- They underestimated the amount of effort required to pass the module
- Low frequency of class attendance
- Too little effort during the course of the semester leading to low semester marks
- Combined workload pressure owing to full schedules
- Prioritising other modules
- Difficulty grasping the core concepts of the module



Interviews with students: Summer school v mainstream

Summer School

1. Slower pace enabling lecturers to linger on core concepts.
2. ***Easier to link concepts with one another and to focus on the content.***
3. It was easier for them to ask questions and interact with the lecturer.
4. Smaller classes made the lecturer more accessible and they received more individual attention.
5. Students viewed the summer school module as an opportunity to revise the familiar content.
6. ***They also appreciated the increased focus on practical examples and solving problems in class.***

Mainstream

1. Too fast paced – mile wide, inch deep; catering to stronger students
2. Spread out with other modules also demanding attention
3. ***Inhibited about asking questions that signal lack of understanding***
4. Lost in the crowd
5. Some concepts very new
6. Not enough focus on practical examples



Interviews with students: Most/ least helpful aspects of summer school

Helpful

- ***The interactive and practical nature of the summer school classes***
- Increased focus on providing conceptual clarity
- Increased individual attention
- Freedom to ask questions – and have them answered
- Opportunity to focus exclusively on one module.

Unhelpful

- ***Fifteen of the twenty students said that there was nothing about the summer school that they found unhelpful.***
- A few students complained about the protest action at the time, as it interfered with the summer school schedule, which they found disruptive.
- For a very small minority of students, the fast pace of the summer school was problematic.



Interviews with students: Aspects that contribute to success/ failure

Critical success factors

- Put more effort into studying the content diligently
- ***Understanding core concepts***
- Class attendance

Failure

- Negative marking style applied in the module (single student at risk of failing SS)

Interviews with students: Suggested improvements to summer school module

- ***Most of the students offered no suggestions for improvements.***
- Write class tests early in the morning rather than in the afternoon.
- The students in the Mathematics summer school would have preferred slightly longer class times than the current two hours per day, to allow for more practice in class.

Interviews with students: Suggested changes to mainstream module

- More frequent assessments would motivate students to increase their class attendance and would help them to understand the content better.
- More discussions and interactions, especially for the purpose of conceptual clarity and in dealing with more complicated content.
- More frequent classes.
- Sharing of past examination papers in order to prepare for examinations.
 - Caveat from researcher: As long as the purpose is to develop a schema of the paper and examination skills, that would be fine, but one has to beware of examination training.

Findings

- The results showed that, although these students generally performed better when they enrolled for summer schools as opposed to repeating a module that they had previously failed, inferring that summer schools are indeed a useful aid in 'moving the middle' is a more complex matter than it would seem to be.
- Efforts at 'moving the middle' may ultimately be better served by supporting students to cope more effectively with the mainstream module.

Discussion of core findings

- **Costs:** A definite limiting factor in the effectiveness of the summer schools in 'moving the middle' is that summer schools offer elective modules for which **students have to pay additional fees** equivalent to those of the mainstream modules.
- **Students' academic trajectory:** The second factor possibly limiting the impact of summer schools is that many of these modules (especially the first-year modules) do **not usually form part of the major course selections** of students, making it almost impossible to measure objectively the impact of summer schools on the student's academic trajectory. (See the way forward – longitudinal tracking and narrative lab.)
- **Transformation of student work ethic:** Good performance in the summer school module is unlikely to be helpful in 'moving the middle' unless the students incorporate the **principles of the summer/winter schools are embedded in the work ethic of the students. Dependent on effective/ clear communication of these principles**

Conclusions

- Inculcate success principles into students' work ethic in their first year:
 - cementing the understanding of core concepts;
 - encouraging engagement and active participation;
 - encouraging students to ask for assistance;
 - commitment and diligence;
 - breaking perceptions about 'difficult' modules;
 - overcoming negative beliefs about ability to succeed in a module; and
 - understanding the impact of failing modules on academic trajectory and outcome. are not new or unusual to the achievement of academic success.
- Either mainstream or enable all students to attend, regardless of financial status
- Implement changes to mainstream modules to align them to principles and practices in summer school.



The way forward: Tracking summer school students

- Track summer school students
- Winter school research
- Narrative lab methodology