

What about me? Staff perspectives on the implementation of Intensive Mode of Delivery (IMD) in an undergraduate science program

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Defining the problem

A science staff retreat organised in November 2015 identified the **key issues around I&t:**

- Low attendance and poor engagement by science students,
- impacting on staff morale,
- causing frustration and supporting a strong tendency by staff to over-assess (in an effort to force attendance and participation).

Defining the problem

Finding solutions

One of four **strategic priorities**:

Improving student engagement!

- The current project is a direct response to that aim.
- Piloting a new mode of delivery – Intensive Mode of delivery (IMD) offered **during** the normal teaching time, for BVB301 (Animal Biology), a core third-year unit in the biology major of Science Program.

BVB301

Identifying the issues

Background

- A core, third-year unit, offered for the first time in Semester 1 2015.

Approaches to learning and teaching:

- Inquiry-based, experiential learning, with a strong emphasis on practical, hands-on learning as far as possible.

Delivery mode:

- Standard teaching period (13 weeks).
- In total 32 contact hours with staff.
- Weekly lectorials and laboratory classes.
- A short field trip planned for the end of semester.

BVB301

Identifying the issues

Student satisfaction

Beginning of the semester:

- Good attendance at both lectorials and laboratory classes (110 enrolled students).
- Student evaluation survey on the quality of teaching excellent.

However

End of the semester:

- Decreasing attendance at lectorials and laboratory classes (10 to 15% by week 10).
- Field trip cancelled.
- An overall student satisfaction score of 2.8/5.0.

BVB301

Identifying the issues

Student feedback

- Lack of learning flow (disconnection) between the lectorials, laboratory classes and the unit assessment tasks*.
- This provided a disincentive for attendance**.

* To our surprise!

** The unit had no final exam and staff had tried to avoid over-assessment by not awarding marks on a weekly basis.

Staff fatigue and disappointment caused by:

- Low attendance/ student disengagement,
- Wasted funds spent on purchasing expensive laboratory materials,
- Cancellation of the filed trip.

Finding solutions

Defining specific objectives of the project

Students

- Boost student attendance and engagement by **strengthening inquiry-based, experiential learning** (during face-to-face phase) and emphasizing **self-regulated and self-directed learning** (online phase).

Staff

- Address **low morale and frustration** among teaching staff.
- Improve the **efficiency** of use of staff time.

Pedagogy

- Bigger focus on **blended delivery** (testing the features offered by One Note Class Notebook software).
- Exploring the potential for implementing IMD in the science program on a larger scale (part of **more flexible learning pathways**).

Weekly schedule for BVB301 delivered by Intensive Mode

| Week of the semester | 1 | 2 | 3 | 4 | EASTER | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | | | | | | | | |
|----------------------|----------------------------------|------------|-------------------------|------------|--------|-------------|------------|----------|------------|------------|------------------|------------|------------|------------------------|--|--|------------------|-----------------|--|------------------|--|--|-----------------------|--|
| Time | Learning and Teaching approaches | | | | | | | | | | | | | | | | | | | | | | | |
| 9-10 | Lecture | | Lecture | | EASTER | Posters | Lecture | | Lecture | | Lecture | | Lecture | | | | | | | | | | | |
| 10-11 | | | | | | Preparation | | | | | | | | | | | | | | | | | | |
| 11-12 | Self-study | Self-study | Workshop | Self-study | | Self-study | Self-study | Workshop | Self-study | Self-study | Workshop | Self-study | Self-study | Workshop | | | | | | | | | | |
| 12-1 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1-2 | | | | | | | | | | | Break | | | | | | Break | | | | | | Break | |
| 2-3 | | | | | | | | | | | Exercise | | | | | | Exercise | | | | | | Exercise | |
| 3-4 | | | | | | | | | | | Lab Practical | | | | | | Lab Practical | | | | | | Debate preparation | |
| 4-5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 5-6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 6-7 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7-8 | | | | | | | | | | | | | | | | | Bat Hunt | | | | | | | |
| Assessment Item | | | | | | | | | | | Workbook 10% | | | | | | Poster 30% | Workbook 15% | | Workbook 15% | | | Debate 30% | |
| Module | | | Respiration & Transport | | | | | | | | | | | Senses & Communication | | | Movement | | | Animal & Society | | | | |

Finding solutions

Proposing changes

Delivery mode

Face-to-face

- Intensive delivery with shortened teaching period (4 intensive teaching days).
- 32 face-to-face contact hours with staff.
- Lectorials (one per module), workshops, preparatory exercises for the laboratory practicals, and laboratory activities.
- No more a short field trip.

Finding solutions

Proposing changes

Delivery mode

Online

- Two weeks of **self-study**, online, with assistance from the teaching staff and peers.
 - Introducing OneNote Class Notebook – more **flexible** online tool for making resources available, taking notes by students, collaborating with peers (e.g. providing feedback).
 - Learning resources made available online well **in advance***
- * Significant effort made.
- Using **multiple means of representation** when providing learning resources: video links, journal articles, PDFs.
 - Strengthening the **learning flow** between online and face-to-face, to support retention and retrieval e.g. **self-testing quizzes**.

Finding solutions

Proposing changes

Approaches to learning and teaching

Face-to-face

- More inquiry-based, experiential learning, with a strong emphasis on practical, hands-on learning as far as possible: **dissections, laboratory experiments (e.g. zebra fish embryo), using 3D models of animal organs/ bones.**
- Interactive teaching methods, e.g. **“bat hunt”**.
- Strengthening the **learning flow** between online and face-to-face, to support retention and retrieval e.g. **“Q&A” sessions (peer learning activity).**

Finding solutions

Proposing changes

Assessment

- All assessment items:
 - Rubrics
 - **Calibration of assessment** with students and staff.
- Quizzes **at the end of each** module, directly related to the content covered.
- ePosters: scaffolding students through **peer feedback online**.
- Debate: scaffolding students online (rubrics, task description sheet) and during lecture (e.g. **role play**).

Evaluating the delivery

Reacting quickly

After each module

Students

- Post-it surveys.
- Teacher classroom observation sheets.
- Paper-based survey administered in Module 4.
- Standard teacher evaluation surveys, managed by the University.

Outcomes

- Changes implemented “on the run”, e.g. fruits.
- The amount of learning resources put online.
- Better communication with students during self-study periods.

Evaluating the experience Investigating staff perceptions

Staff

- *Microculture*
(Roxå & Mårtensson, 2015)
- Debriefing
- Research 

| Research questions | Interview questions |
|--|---|
| 1. What were the team's expectations concerning student engagement within IMD and were these expectations met? | 1. What were your expectations with regards to students' behaviour/ engagement? |
| 2. What challenges and constraints were posed by IMD during the unit design and delivery phase? | 2. In your opinion, what were the biggest challenges and constraints posed by the unit to you? To your students? To the University? |
| 3. What were the benefits and drawbacks of IMD? | 3. In your opinion, what were the benefits of the experiment to you? To your students? To the university? |
| | 4. Any additional thoughts you might have? |

RQ1: What were the team's expectations concerning student engagement within IMD and were these expectations met?

Expectations

- A high level of student engagement with both the face-to-face and online components of IMD.

Reality

- 👍 Met for the face-to-face component: 98-99% across all four modules and for the duration of each entire day.
- 👎 Not fully met for the online component: **lack of appropriate learning strategies** and **self-motivation** (e.g. time management).

RQ1: What were the team's expectations concerning student engagement within IMD and were these expectations met?

Expectations

- Difficulties experienced by some students with adopting a more independent, self-managed approach towards their learning, particularly concerning the online component.

Reality

- ☝ Difficulties confirmed (**exceeded**): identified issues with students' self-regulation and self-direction.

RQ1: What were the team's expectations concerning student engagement within IMD and were these expectations met?

Expectations

- Difficulties with adapting to One Note Class Notebook: technical skills, self-regulation and self-direction.

Reality

☝ Expected difficulties confirmed: identified issues with **students' learning strategies**, digital literacy.

RQ2: What challenges and constraints were posed by IMD during the unit design and delivery phase?

Four “transitioning challenges”:

1. Transitioning from a **content delivery** mindset to an **experiential learning** mindset (staying focused!).
2. Transitioning to a **blended learning model** (learning skills, technical abilities, digital literacy).
3. Transitioning of the whole interdisciplinary team (academics, L&T development, technicians) to a **microculture model** based on trust, professional respect and shared goal(s).
4. Transitioning of the whole institution towards **diverse and innovative delivery formats** (e.g. timetabling issues).

RQ3: What were the benefits and drawbacks of IMD?

The three key benefits

1. **Student level: excellent student engagement:** good attendance, and meaningful participation in all types of pedagogical activities (laboratory experiments, practicals, lectorials and tutorials).
2. **Staff level: boosted** the teaching team's **morale**, **encouraged reflection** on their current practices which extended beyond the unit offered.
3. **Institutional level: energised teaching teams** and **engaged students** should contribute to a **better overall student learning experience.**

What were the benefits and drawbacks of IMD?

The four key drawbacks

1. Student level: lack of self-regulation, self-direction: self-efficacy.
2. Staff level: more training, support and reflection (constructive dialog) on teaching practice, especially in the context of blended learning.
3. Staff/institutional level: need for creating *microcultures*.
4. Institutional level: more flexibility with regards to facilitating non-standard delivery modes.

Identifying further directions

1. **Acquiring experience** in blended learning and relevant learning and teaching approaches (students and staff).
2. **Assisting students** in becoming self-directed, self-regulated life-long learners.
3. **Assisting the teaching team** with addressing the challenges presented by the blended learning approach (e.g. more training, creating *microcultures*, and sharing experience).
4. Transforming HE institutions to become more **flexible, adaptable and agile** at a practical level when trying to implement changes to their established organisational structures.