2018

Integrated Programme Assessment

A Practical Guide

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Foreword

The Biosciences team at Brunel University London were recipients of a Collaborative Award for Teaching Excellence (CATE) 2016 in recognition of their work on Integrated Programme Assessments, and the award has enabled us to disseminate and share practice with the sector.

This practical guide is designed based on our experience and discussions during a workshop held at Brunel University London in November 2017. The aim of this guide is to provide a framework for subject teams or departments who are interested in rethinking assessment, with practical suggestions for how this can be achieved.

We hope you will be inspired to rethink your assessment strategy!

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Introduction

For us, as academics, celebrating achievements at graduation with our students is one of the highlights of the year. When we award degrees we are confirming that students have achieved all the learning outcomes of the programme. This indicates a need for a focus on how programme level learning outcomes are defined, how they are best assessed, and how students demonstrate this achievement.

Thinking about assessment at programme, rather than modular, level is for many a shift in practice: it requires collaboration with colleagues, a shared vision of the programme and a holistic approach to assessment. The benefits to such an approach include more coherent and better-structured programmes with authentic assessments that develop students' skills in the context of their discipline; the opportunity to address over-assessment and reduce student and staff workload; and the creation of a community with shared responsibility for students' learning.

In rethinking assessment, we have found it useful to take a structured, top-down approach that addresses the following questions about the programme:

1. What is its purpose? *(Aim)*
2. What do we want the graduates to know and be able to do? *(Learning Outcomes)*
3. How will we know if students know/are able to do? *(Assessment Strategy)*
4. How are students supported to be successful in the assessments? *(Teaching Strategy)*
5. What content/activities need to be delivered when and by whom? (*Organisation and Delivery)*

Please note that this structured approach to programme design and development is also applicable to modular programmes.

Summary of Integrated Programme Assessment (IPA)

IPA refers to an assessment approach where tasks are designed to allow students to demonstrate programme level learning outcomes.

A module normally consists of teaching and assessment with the assessment tasks usually being linked solely to the teaching taking place within the module. This can lead to an *in silo* approach to both assessment and student learning. Over-assessment and repeated testing of the same skills are often unintended outcomes of a modular approach.

Uncoupling teaching and assessment provides the opportunity to set assessment tasks that require students to integrate information from across teaching blocks. This facilitates authenticity in assessment design, and reduces the assessment burden for both staff and students.

Integrated Programme Assessment (IPA): teaching and assessment uncoupled
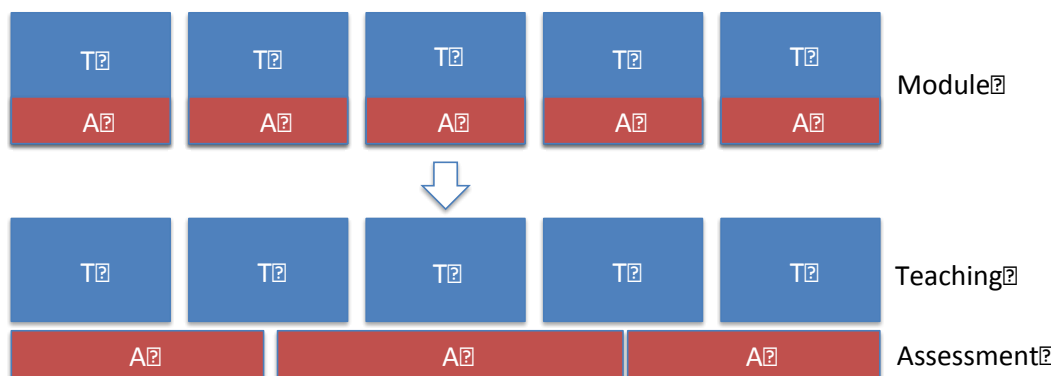
Separating study and assessment reflects real life – we integrate information from many sources to solve a problem

How to Use this Practical Guide

An integrated approach relies on academic staff coming together to collectively explore and rethink assessment.

This document is not a blueprint but a Practical Guide that suggests a series of discussions that will take the staff group through the steps needed to introduce Integrated Programme Assessment. However, the sessions can be adapted to form the basis of discussions or workshops, including at institutional level.

We have suggested allocated time and group sizes for each session as guidance. For simplicity we have based this on a staff group of 30 people, but the sessions will have to be adapted to the particular circumstances. Please note that whilst we refer to staff we hope that students will be involved in these discussions, either jointly with staff or in separate meetings. And don't forget about professional and administrative staff!

The aim of each session along with suggestions for relevant information to achieve each aim is provided in this guide. We suggest that these are circulated in advance of each session to set the expectation that staff are informed and prepared, ensuring that the sessions are productive.

Clearly introducing IPA will require more time than that given to the sessions in this guide, but they act as a starting point and ensure that there is a collective understanding by the team of what needs to be achieved. This gives structure to work and discussions carried out by sub-groups.

We have taken a low-tech approach and refer to flip-charts and post-it notes, but clearly there are more elegant ways in which discussions and suggestions can be captured. The point is that a record of discussions is created that can be shared with others.

We have made the assumption that it is an existing programme where the assessment strategy is changing. For a completely new programme there will be considerably more work over a longer period. In either case, don't forget that programme development is a reiterative process followed by a continuous cycle of review.

Examples of assessments are included in Appendix 1.

Step 1: Establishing a Shared Vision for Change

Step 2: Programme Aim and Learning Outcomes

Step 3: Assessment Strategy

Step 4: Teaching Strategy

Step 5: Programme Organisation and Delivery

Step 1: Establishing a Shared Vision for Change

Time allocation: 2 hrs

This session is designed to discuss:

a) the drivers for changing assessment strategy
b) what can be achieved
c) barriers and solutions

Purpose: To ensure that everyone has a common understanding of what needs to be 'fixed', and to generate the shared vision that will sustain the team throughout the design process. Understanding what the barriers are also starts setting the agenda for how change can be brought about, particularly if there are institutional practices that will have to be modified.

Information: the context for this session may be sector initiatives, institutional strategies, departmental plans, and student feedback.

Task A: Drivers for Change (30 min)

In groups of 10, discuss and record on flip chart paper <u>why</u> change is necessary. After 15 minutes, the groups share their points and collectively agree the reasons for introducing change. *This will support the narrative for change.*

Task B: Ambition (30 min)

In groups of 5, discuss and record on flip chart paper <u>what</u> can be achieved with IPA. After 10 minutes, two groups come together to share their points and agree their ambitions for change. After a further 10 minutes, all groups come together and collectively agree what is aimed at. *This will support the narrative of what change looks like.*

Task C: Barriers and Solutions (45 min)

In groups of 5, discuss and record (separately) on post-it notes the local or institutional barriers that prevent IPA from being used on your programme. After 10-15 minutes, ask the groups to consider solutions to their barriers and record these on different coloured post-it notes (10-15 min).

Ask all groups to stick the post-it notes on a wall, arranging the barriers and solutions separately. Staff then use the remaining time to collectively sort the identified barriers and solutions in order to end up with an agreed list of potential issues and their solutions. *This will inform the team of issues that will need to be overcome.*

The Biosciences team aimed to:

- *eliminate the compartmentalised approach to learning experienced by students on modular programmes*
- *reduce the assessment load for staff and students*

These were distilled from discussions which highlighted that:

- *students were not linking information together*
- *students felt they had too much to do, and were strategic in managing assessment load and revision*
- *there were too many pieces of assessment with small credit weightings*
- *staff were overwhelmed with marking loads*
- *development of skills was dependent on modules*
- *there was a desire to introduce authentic assessments*

Wrap-Up (15 min)

Recap the agreed reasons for why there is a need to change the assessment strategy, and what change will look like. *This becomes the shared vision for change that will be used as a reminder as necessary throughout the process.*

The agreed barriers and solutions will inform how change can be brought about, and should be used to agree action points and owners. *This forms part of the action plan for change.*

Output

- Shared vision
- Action plan of next steps

Introducing Integrated Programme Assessment (IPA) was facilitated by changing Senate Regulations: references to required module credits were changed to assessment credits. This allows IPA to be used alongside modules, which may be appropriate for programmes with many options at level 6.

Step 2: Programme Aim and Learning Outcomes

Time allocation: 2 hrs

This session is designed to:

   a) confirm the aim(s) of the programme
   b) discuss what a graduate from the programme looks like
   c) design programme learning outcomes

Purpose: To ensure there is a clear and common articulation of what the programme aims to achieve; who it is for; and what competencies, skills and knowledge graduates will display.

Information: the context for this session may be Subject Benchmark Statements; Framework for Higher Education Qualifications of UK Degree Awarding Bodies (FHEQ); existing programme information (Programme Specification; web pages); alumni/employer feedback.

Task A: Programme Aim (30 min for an existing programme)

The group collectively considers the purpose of the programme and ensures that it is clearly articulated. Is it clear who the target market for the programme is, and what students will get from it? Is it attractive to prospective students? What expectations will applicants have of the programme? *This will confirm the aim of the programme.*

If it is (or becomes) clear that more discussion/work is needed then the timing for the task adjusted accordingly. Depending on the starting point, determining the purpose of the programme may require a dedicated meeting.

Task B: Graduate Attributes (30 min)

In groups of 5, discuss and record on flip chart paper the key attributes (skills and competencies) the graduates in their subject are expected to have. After 10 minutes, two groups come together to share their points and agree their attributes. After a further 10 minutes, all groups come together and collectively agree what a graduate from their programme will look like. *This will define the graduate attributes and inform programme learning outcomes.*

Task C: Programme Learning Outcomes (45 min)

In groups of 10, start to formulate the graduate attributes into learning outcomes and allocate them to appropriate FHEQ levels. Record the outcomes of the groups, which will form the basis of further work. *These will be the learning outcomes against which students will be assessed.*

<u>Wrap-Up (15 min)</u>

Recap the agreed programme aim(s) and graduate attributes.

Decide how the work on programme learning outcomes will be taken forward, maybe by sub-groups for each FHEQ level.

Output:

- Agreed programme aims and graduate attributes
- Action plan of next steps

Brunel Experience:	Developing Programme Learning Outcomes

After an initial discussion about learning outcomes the Biosciences team were divided into three groups, each charged with developing 6 learning outcomes for a particular FHEQ level.

At the next meeting the proposals from each group were collated and discussed, with adjustments made as necessary to ensure that learning outcomes were appropriate to the level and that there was progression in expectations.

Step 3: Assessment Strategy

Please note that designing assessments will be a reiterative process, and one that will require several sessions. However, in order to ensure that everyone has the same understanding of what is too be achieved, it is useful to start this aspect with a session where everyone can practice designing assessment tasks and agree the principles of what will be the assessment strategy.

Time allocation: 2 hrs

This session is designed to:

   a) determine principles of assessment
   b) design assessment tasks

Purpose: To determine appropriate assessments that allow students to demonstrate how they meet the learning outcomes.

Information: The agreed aim of the programme; Examples of assessment practice from a diverse range of programmes, departments, institutions. Examples of authentic assessments (for example, use reports, reviews, briefing notes instead of essays; plan an event e.g. a literary or music festival; blogs, promotional/information leaflets, video clips in addition to posters and presentations).

Task A: Discuss Principles (45 min)

In groups of 5, spend 15 min recording on flip-chart paper what the main principles of the assessment strategy should be. Thinking outside the box should be encouraged!

Examples include: should assessments be authentic? What is the balance between individual and group work? Between coursework and exams? Between practical, written and oral assessment? How many assessments are required – could one project-based assessment successfully test several learning outcomes?

The groups then share their suggestions which are likely to demonstrate a high level of consensus. The wrap-up discussion can then be focussed on the more innovative principles. The agreed assessment principles will then inform design (Task B).

Task B: Design Assessments (60 min)

Allocate an FHEQ level to each of 3 groups. Each group then designs assessments for each of the programme learning outcomes at that level; this could be a collective exercise or done in

pairs or smaller sub-groups. *(Tip: use pre-printed templates with the learning outcomes generated in the previous session)*

After 30 min the assessment proposals from each FHEQ group should be collated and looked at holistically – is there a spread of the types of assessments proposed at each level? Do they reflect the principles discussed at the beginning of the session? Do they reflect the aim of the programme?

This will inform the assessment strategy, and should at this stage be regarded as proposals that will be further discussed and refined.

Wrap-Up (15 min)

Agree what is required going forward – is there a need to revisit the principles of assessment before further work is done of the assessment tasks themselves? Decide how a holistic overview is maintained if assessments are designed by FHEQ level to ensure that there is coherence between as well as within levels.

Output:

- Outline of assessment strategy
- Action plan of next steps

Step 4: Teaching Strategy

Integrating assessments will have reduced the number of summative assessments, increasing the importance of each. You will therefore want to make sure that students are appropriately supported with formative tasks that ideally form the basis of further staff-student discussion. As formative activities are an important part of the teaching strategy, which in turn influences how the programme is organised, it must be discussed prior to approving the changes.

Time allocation: 90 minutes

This session is designed to:

    a) identify how best to support the assessment strategy
    b) determine the changes required

Purpose: To determine what, if any, changes to the teaching activities are required to support students successfully demonstrating achievements of learning outcomes.

Information: The agreed assessment strategy and assessments; Examples of formative activities from a diverse range of programmes, departments, institutions.

Task A: Support for Assessment (40 min)

Working in FHEQ level groups, discuss and record on flip-chart paper what activities need to be in place for students to be successful in their assessments (20 min).

This is likely to require the introduction (if not already existing) of formative tasks, and an appropriate sequencing of assessments. Examples include: seminar discussion, peer assessments, computer aided assessment, practical work.

Use the last 20 min to look at how there is coherence between levels to ensure that there is diversity in the formative tasks, and that these are collectively interwoven in the programme.

Task B: Review Existing Opportunities and Identify Gaps (40 min)

Working in FHEQ groups, discuss and record on flip-chart paper what formative tasks are currently existing within the programme (20 min).

Use the remaining 20 min to identify where the gaps are and start to suggest how these can be filled (if time permits).

This will inform the teaching strategy, and should at this stage be regarded as proposals that will be further discussed and refined.

Wrap-Up (10 min)

Agree what is required going forward – how much change is required to the way teaching is delivered, and who will do what..

Output:

- Outline of teaching strategy
- Action plan of next steps

Brunel Experience:	Teaching Strategy

Formative activities:

Practical laboratory sessions are formative – that is, there are no summative pieces of work directly associated with them. To ensure that the students have the opportunity to practice relevant skills such as calculations, data analysis, presentation and interpretation, they are set a variety of tasks to be completed during and/or after the lab sessions. The tasks are often peer assessed before being discussed so as to develop students' critical ability. On-line tests and worksheets are also used that help students assess their knowledge and understanding.

Step 5: Programme Organisation and Delivery

This session should be a joint session between academics and key administrative staff, including (where appropriate) any central professional services staff/representatives involved in delivery.

Time allocation: 2 hours

This session is designed to:

a) identify how the programme is best structured, delivered and supported
b) determine the changes required to facilitate this

Purpose: To determine what, if any, changes to the organisation and delivery of the programme.

Information: The agreed assessment and teaching strategies, assessments and institutional/administrative constraints (e.g. timetabling, marking turnaround times).

Task: Review Programme Organisation and Delivery (100 min)

Either collectively or in FHEQ level groups, discuss and record what changes may be required to the organisation and delivery of the programme. This is particularly important for programmes where assessment is changing but taught content is remaining largely the same.

For example, consider how are teaching and assessment best sequenced (are topics delivered in the right order, will students benefit from feedback before the next assessment is due)? Will there be coordinators for the assessments? How will marking be organised? Will level coordinators be useful, or if already in place, how will their responsibilities change? If team marking is to be used, who will moderate to ensure consistency?

This will inform the operational aspects of the programme which are very important for systems and supporting staff, and therefore looking at this at a relatively early stage will ensure that any issues can be flagged up early on.

Wrap-Up (20 min)

Agree what is required going forward – what change is required to organisation and administration of the programme, and who will do what.

Output:

- Action plan of next steps

Delivering Success

With the right team you can move mountains…

This is probably the most critical aspect for success, and therefore some thought should go into how you will bring the staff group together. You will know how best to do this in your context, but we found the following helpful:

1. **Engage everyone** currently contributing to the programme. IPA is a team-based approach, and on-going success relies on collegiality and team working. Making sure that everyone has a voice throughout the process is therefore important, and ensures that you travel the journey together.

2. **Be open-minded and inclusive**; whilst you may know what you want, there may be different ways of achieving that goal. So listen, even if the message is couched in negative language!

3. **Share responsibilities** with colleagues by giving others specific tasks (for example identify leaders for each FHEQ level). There will be work to do outside of the sessions suggested in this guide, and you want staff to continue to be engaged.

4. Be an **inspiring leader** who is able and willing to take decisions and make tough calls.

5. Set a **challenging timeframe** (book ALL sessions at the start) that is adhered to and ensures that progress is visible. This avoids going round in circles and revisiting decisions (except where reiteration is required), and momentum is not lost.

6. Have a **critical friend** who can give an external perspective on how things are going; ideally someone with expertise in curriculum design, but anyone willing to listen over a cup of coffee as you try out ideas of how to approach things is good!

7. Return frequently to your **shared vision** and remind everyone what you collectively agreed to aim for.

Brunel Contact

We hope this practical guide has been helpful.

Please contact us for further information or support:

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Appendix 1: Examples of Assessment

a) Biomedical Sciences Level 4

Practical Skills Microscopy

Previously under the modular structure there were three separate assessments linked to laboratory sessions within the individual modules. In the synoptic approach, all of the laboratory sessions still occur and are linked with formative activities, but the three individual reports have been replaced by a single authentic assessment (see table below):

The students are faced with the clinical scenario of a patient suffering from abdominal pain which could be caused by:

- *histological changes,*
- *an unusually high number of bacteria normally present in the gut,*
- *bacterial or fungal species not normally present in the gut.*

Students have to assess histology images of the digestive tract as well as routine microbiology procedures such as Gram staining and microbiological enumeration techniques in order to establish what might be the cause of problems for the patient.

Teaching Block	Laboratory Session	Assessment	
		Modular	**IPA**
Anatomy and Physiology	Function and histology of the human digestive tract by looking at sections and images	Assessed report	Clinical scenario case study report
Practical Skills	Enumeration of cells with a counting chamber and a microscope	Assessed report	
Biology of the Cell	Differentiation of different and potentially pathogenic bacteria	Assessed report	

The assessment addresses the following programme learning outcomes:

Knowledge
Demonstrate knowledge of core topics in biomedical sciences
Demonstrate knowledge of the complexity and interrelationship of scientific disciplines
Cognitive
Apply subject knowledge to address practical problems
Analyse and interpret data
Skills
The ability to communicate basic scientific topics
Demonstrate awareness of skills required for self-managed professional and life-long learning (safe laboratory practice, working independently or in teams, time management, organisation, information retrieval, IT, critical thinking)

b) Biomedical Sciences Level 5

Data Analysis and Interpretation

Previously in modules, assessment was linked to individual modules and sessions. In the synoptic approach, all three laboratory sessions still occur and are linked with formative activities, but the three reports have been replaced by a single authentic assessment (see table below):

The students are presented with a case study and are given raw unformatted data similar to the data they would generate in the laboratory sessions. They have:
- *histological sections (exfoliative smears, liver biopsy)*
- *ELISA data,*
- *CD4 T cell counts*
- *Liver enzyme assay data*

Students work in groups to analyse the data using appropriate statistical tests and then format it for presentation as a poster with prognosis and possible treatment options. The poster is then presented at a student conference day (Brunel Symposium on Opportunistic Infections in Diseases of the Immune System).

Module	Laboratory Session	Assessment	
		Modular	**IPA**
Principles of Human Disease	Pathology of diseases by looking at sections and images	Assessed report	Poster Presentation
Immunobiology and Genetic Engineering	CD4 T-cell counting	Assessed report	
Medical Microbiology	Examination of antibody levels in different samples by ELISA assay	Assessed report	
Analytical Biochemistry	Enzyme Assay	Poster	
Professional Skills	Enzyme Assay	Assessed report	

The assessment addresses the following programme learning outcomes:

Knowledge
> Demonstrate knowledge and understanding of the major themes in biomedical sciences

Cognitive
> Apply subject knowledge to address familiar and unfamiliar problems
> Analyse and interpret data and scientific literature

Skills
> The ability to communicate scientific data and literature
> Demonstrate development of skills required for self-managed professional and life-long learning (experimental techniques, working independently or in teams, time management, organisation, information retrieval, IT, critical thinking)

c) Biomedical Sciences Level 6

Synoptic Examination

The synoptic exam was a new style of assessment introduced with IPA and so there is no prior comparator.

This assessment takes the form of a seen exam question, which is revealed to students 7 days in advance of the exam. The students therefore have one week to research and prepare their answers, which they then write under exam conditions. The question is deliberately board in scope so that students are able to answer it irrespective of optional choices. It also fulfils QAA Benchmark Statements where there is an expectation that students will be aware of the wide issues in their subject beyond those covered in the programme.

It addresses the following programme learning outcomes:

Knowledge
Demonstrate in-depth knowledge and understanding of selected topics in biomedical sciences
Demonstrate engagement with current developments in biosciences and awareness of the wider implications, debate and controversies surrounding these topics

Cognitive
Apply subject knowledge to address complex familiar and unfamiliar problems

Skills
Effectively communicate complex scientific information

Appendix 2: Summary of IPA in 5 easy steps

These steps articulate important aspects of programme design and support a structured approach to programme development:

1. **What is the purpose of the programme?**

   Consider the aim(s) of the programme. What does it set out to achieve? Who is it for?

2. **What do we want graduates to know; be able to do?**

   The skills and competencies we want graduates to have will determine the programme level learning outcomes

3. **What assessments are needed/appropriate to demonstrate that learning outcomes are met?**

   This is the Assessment Strategy. It is more than a collection of individual assessments and needs to be coherent across and between levels. There should be an iterative cycle of review to ensure that the assessments increase in skills/complexity with each level.

4. **How are students best supported to be successful in the assessments?**

   This is the Teaching Strategy. For teams just looking at reviewing assessments this might not need to change much; for others it will be a good opportunity for review. However, with a reduction in summative assessment there will be a need for formative activities to ensure students have time to practice their skills and enable them to succeed in their assessments

5. **What content needs to be covered, in what sequence, by whom, etc.**

   This will cover the structure, organisation and delivery of the programme. Historically this aspect has often been the starting point for programme development, but it needs to be considered last as it is the glue that will neatly convert a series of aspirations into a coherent and attractive programme offering.