

Towards Programme Level Assessment in Physics

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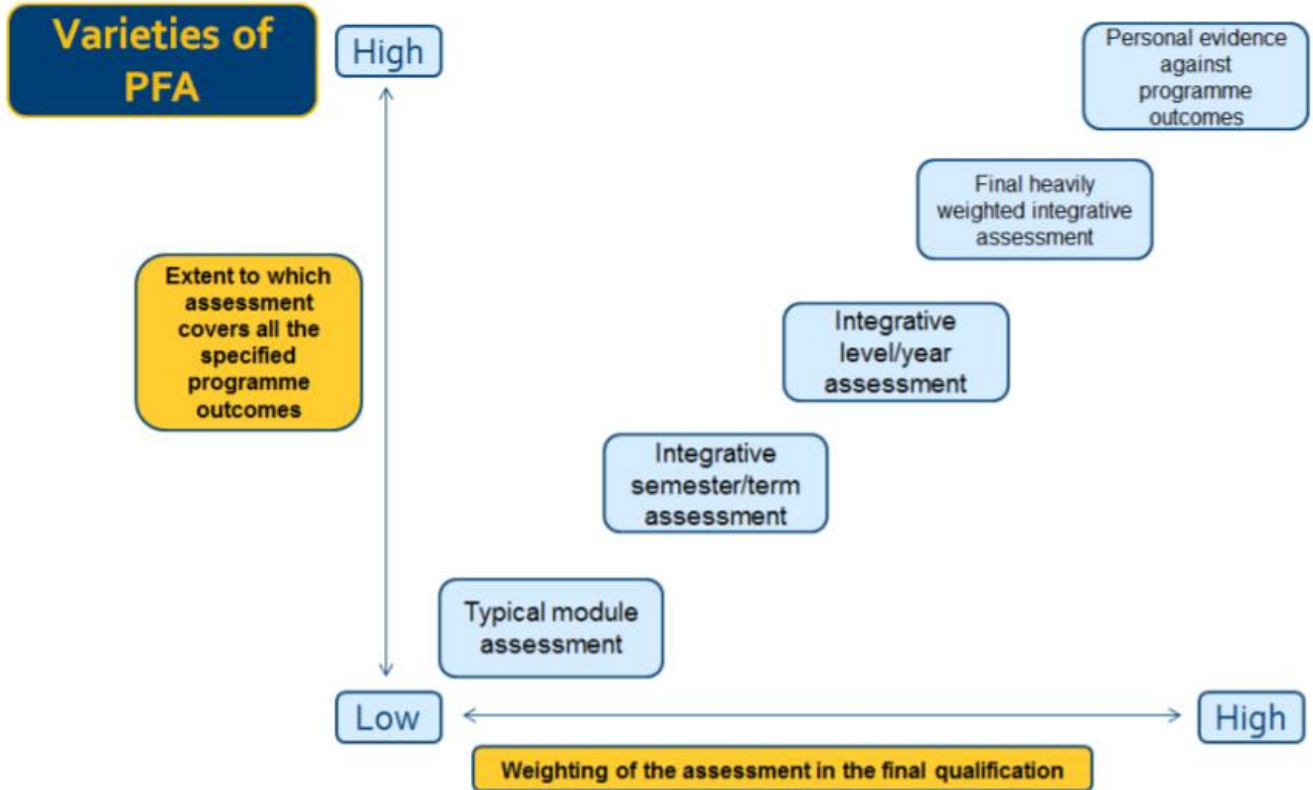
Background

- The University of Bristol is keen to promote Programme Level Assessment across the Institute.
- I have been a Bristol Institute of Learning and Teaching (BILT) Fellow for the last year with a focus on Programme Level Assessment (PLA).
- Some schools are piloting a programme level approach
 - Most recently I have been interviewing those most closely involved

Programme Level Assessment

- “Programme focused assessment is specifically designed to address major programme outcomes rather than very specific or isolated components of the course. It follows then that such assessment is integrative in nature, trying to bring together understanding and skills in ways which represent key programme aims. As a result, the assessment is likely to be more authentic and meaningful to students, staff and external stakeholders.”
- “The case for programme focussed assessment”. PASS position paper. 2012
- <https://www.brad.ac.uk/pass/resources/position-paper.pdf>

https://www.brad.ac.uk/pass/about/PASS_final_report.pdf



Discussions with pilot schools

- How far schools have moved is very dependent on where they are.
 - Stage in the curriculum review cycle
 - Extent to which they are already aware of programme level outcomes
 - Professionally accredited programmes have a good sense of the overall aims
 - Number of joint honours programmes

Comment

- While looking into programme level assessment I have felt that there are significant tensions.
- More formative and less summative assessment should help student development but fewer summative assessments inevitably means that these assessments are higher stakes.
- Devising good innovative assessment methods that are targeted at testing the learning outcomes is desirable but too many different types of assessment can be confusing to students.

PLA in Physics

- Accreditation does mean that we review content and skills against the Core of Physics
- Physics programmes have quite heavily weighted final year projects which integrate many of the softer skills and application of physics.
- Perception of formative feedback offered in science by the “outside world” may not be quite correct.
 - Formative v summative

Sheet 3: TESTA Programme Audit Data: Disciplinary Patterns (Median

Variable	Creative Subjects (n=7)	Humanities and Social Sciences (n=31)	Pure Sciences (n=7)
Total Number of assessments	37	50	196
Number of summative	35	39	131
Number of formative	3	5	0
Varieties of assessment	14	12	8
Proportion of exams	3%	19%	44%
Time to return marks and comments	21 days	21 days	21 days
Volume written feedback	6,900 words	7,300 words	1,502 words

Physics at Bristol – Where are we?

- Preparing for IoP accreditation visit – Spring 2019
 - Opportunity to review afterwards
- School concerns over student stress, NSS (assessment and FB) and drop out rates.
 - Not only a Physics concern
- 2nd & 3rd year lecturers feel they have to re-teach material
- Students feel laboratory demand too much work.
- Increased student numbers
- Programmes in association with Chemistry, Maths, Philosophy, Centre for Innovation, Earth Sciences plus language options

Comments

- With students averaging ~60% on exams they don't know everything from previous years
 - Want to try and focus what they do know
- Staff workload
 - Target support where it is needed
- Student stress
 - What if we could remove some of the jeopardy from unseen exams
 - Ensure assessments are spaced.
 - Support those who need help in a particular area

Assumptions

- 1) We need some sort of unseen assessment, otherwise we cannot tell if students can complete a problem on their own.
 - Two students can independently produce identical solutions to simple problems.
- 2) We can define a set of core material in early years that students need to have mastered to progress but that the point in the year when students master it is not important.
- 3) We wish to maintain standards but ensure students can reach them



Proposal

- **Assessment of Core Physics in each year is mainly via a “portfolio” of demonstrated competencies judged by repeatable pass/fail tests.**
 - online tests or short answer tests
 - laboratory exercises
 - other skills based activities.
- **Expected time line for passing the tests – synchronised with lecture delivery**
 - Extra classes for students who failed topics.
- **Students who completed the portfolio would have met the requirements for progression in Physics.**
- **End of year synoptic papers and a laboratory assessment.**
 - Since all students have met the minimum requirement so these exams could contain a significant element of student choice.
 - Where needed the year mark would be the higher of the average of the June assessments and the pass mark.



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<https://pixabay.com/>

...but seriously

- I welcome comments
- I'd also be very interested in discussions with others who are considering/ are adopting/ have adopted a programme level approach to assessment.
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