Subject benchmarks for quality assurance and course enhancement

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Background Context

- **The British Pharmacological Society published a *core curriculum for undergraduate pharmacology in 2016* (extract below)**

CORE KNOWLEDGE

Having successfully completed an undergraduate degree in Pharmacology, graduates will have knowledge and understanding of:

Related disciplines
- Life sciences e.g. molecular biology, physiology
- Relevant mathematics
- The basics of medicinal chemistry, including the principles behind structure activity relationships
- How related disciplines can yield insights in pharmacology and vice versa

Theoretical principles of drug action
- Drugs that can be used in health and disease, giving examples from body systems
- How drugs interact with their targets, including drug-receptor theory
- Pharmacodynamics (molecule to whole organism)
- Pharmacokinetics (absorption, distribution, metabolism & excretion)
- How physiological and pathophysiological processes are affected by drug action
- Pharmacogenomics
- Principles of toxicology and their application in safety pharmacology
- Principles of translational research and experimental medicine

Methodological principles
- Qualitative and quantitative statistical tools and analytical methods used to interpret pharmacological data
- The scientific method (hypothesis formulation, hypothesis testing, experimental design, experimental analysis)
- Appropriate and emerging methods for interrogating the pharmacodynamic effects of drugs
- Appropriate and emerging methods for interrogating the pharmacokinetic effects of drugs
- Drugs as pharmacological tools in scientific research
- The principles of reduction, refinement and replacement in the use of animals in research

Drug discovery & development
- The multidisciplinary nature of drug discovery and development and the pivotal role played by pharmacology
- The stages of drug discovery and development
- Principles of clinical trial design
- How knowledge of pathophysiology can yield insights into drug targets and new therapeutic avenues
- Emerging therapeutic avenues
- The use of gene modification techniques in drug discovery and development
- Commercial drug discovery techniques
- How medicine formulation impacts on drug action
- Regulatory processes to include medicine quality, safety and effectiveness
- The challenges associated with developing and assessing the efficacy and safety of new therapeutic approaches

The societal impact of the discipline
- The ethical principles of research, including clinical trials and animal research (design, implementation and reporting)
- How pharmacology relates to social challenges and public health
- The impact of pharmacology on patient care with respect to the safe and effective use of medicines
- The various career paths and opportunities afforded by a pharmacology degree

- **This provides a clear benchmark for the UG pharmacology syllabus**
- **As a benchmark, this provides a fundamental reference point for quality assurance of programmes and offers the opportunity for quality enhancement**

Aim

Quality Assurance

- **To use the BPS benchmark curriculum to validate the University of Aberdeen pharmacology curriculum**

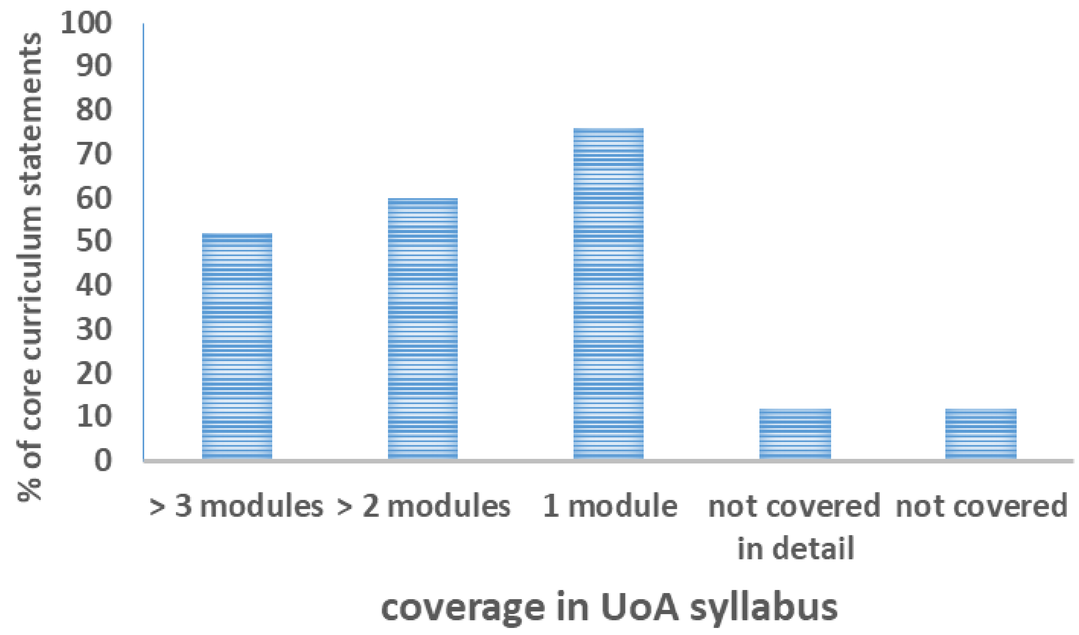
Quality Enhancement

- **To identify areas for development from the alignment matrix and design new approaches to ensure effective delivery across the core curriculum**

Results

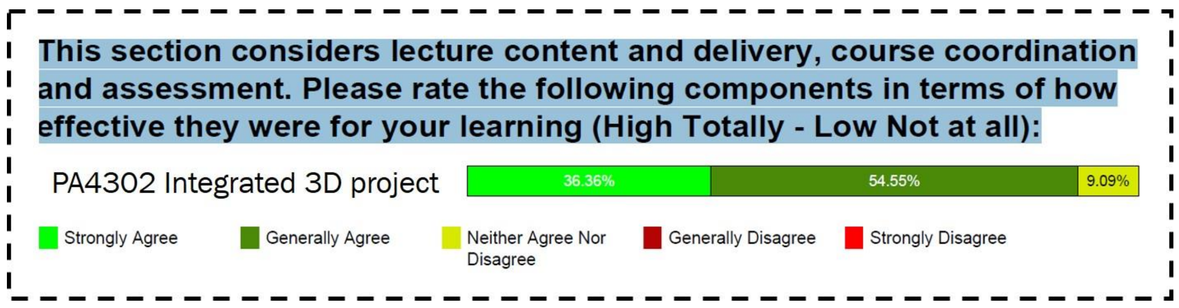
UoA programme compares well:

- **Over half of the statements are delivered across 2 or more modules**
- **Qualitative checks confirmed that this represented progression of material, not repetition**

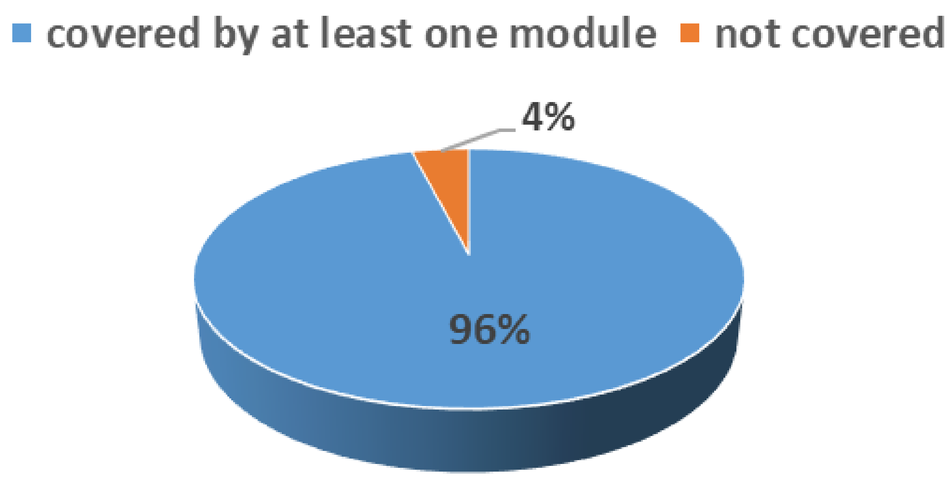


Enhancement of existing programme:

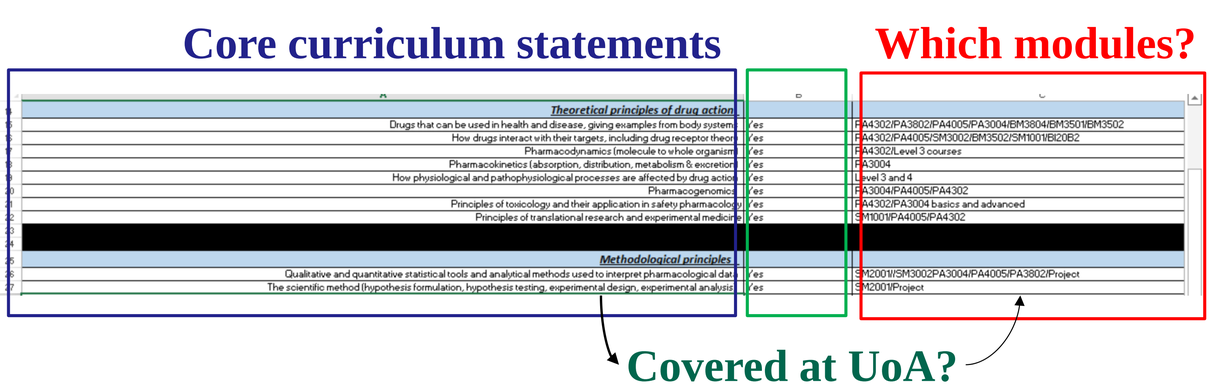
- **A new module was designed and implemented in 2018 to address those areas with little or no coverage**
- **Integrated well into existing programme**
- **Students very positive about impact:**



Re-evaluation since 2018 enhancements:



Alignment matrix



Discussion

- **Subject benchmarks provide a valuable reflective tool to quality assure programme content**
- **This project demonstrates use of the BPS core curriculum as a benchmark to assess current content, and make changes to maintain currency and relevance**
- **Clearly, this is valuable from a quality assurance and quality enhancement perspective**