Defining and unpacking the core concepts of pharmacology: a global initiative

Clare Guilding1, Paul White2, Margaret Cunningham3, Roisin Kelly-Laubscher4, Jennifer Keonig5, Anna-Marie Babey6, Steve Tucker7, John Kelly8, Laurel Gorman9, Patrik Aronsson10, Martin Hawes11, suong Ngo12, Janet Mifsud13, Arend Werners14, Tina Hinton15, Fouzia Khan16, Mohamad Aljofan17, and Tom Angelo18

1University of Newcastle upon Tyne
2Monash University
3University of Strathclyde
4University College Cork
5University of Nottingham
6University of New England
7University of Aberdeen
8NUI, Galway
9University of Central Florida
10University of Gothenburg
11University of Surrey
12The University of Adelaide
13University of Malta
14Saint George’s University
15The University of Sydney
16Imperial College London Faculty of Medicine
17Nazarbayev University School of Medicine
18University of North Carolina Wilmington

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Abstract

Background and Purpose Development of core concepts in disciplines such as biochemistry, microbiology, and physiology transformed teaching. They provided the foundation for the development of teaching resources for global educators, as well as valid and reliable approaches to assessment. An international research consensus recently identified 25 core concepts of pharmacology. The current study aimed to define and unpack these concepts. Experimental approach A two-phase, iterative approach, involving 60 international pharmacology education experts was used. The first phase involved drafting definitions for the core concepts and identifying key sub-concepts via a series of online meetings and asynchronous work. These were refined in the second phase, through a two-day hybrid workshop followed by a further series of online meetings and asynchronous work. Key Results The project produced consensus definitions for a final list of 24 core concepts and 103 sub-concepts of pharmacology. The iterative, discursive methodology resulted in the modification concepts from the original study, including the change of ‘drug-receptor interaction’ to ‘drug-target interaction’ and the change of the core concept ‘agonists and antagonists’ to sub-concepts of drug-target interaction. Conclusion and Implications The definitions and sub-concepts of the 24 core concepts provide an evidence-based foundation for pharmacology curricula development and evaluation. The next steps for this
project include the development of a concept inventory to assess acquisition of the concepts, as well as the development of cases studies and educational resources to support teaching by the global pharmacology community, and student learning of the most critical and fundamental concepts of the discipline.

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