

How do students deal with difficult physiological concepts?

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Physiology courses are considered to be challenging for students to master due to the highly conceptual nature of the discipline and the substantial cognitive effort required to understand those concepts (Michael, 2007). There are a number of factors which contribute to the difficulties that students face when studying physiology, including the nature of the discipline itself, the limited opportunities that students may have to apply their conceptual understanding to problems (Carvalho & West, 2011), and a lack of emphasis on the core principles that underlie physiological concepts (Modell, 2000). Students' understanding of physiological concepts is not only dependent on the nature of those concepts but also the efforts that they make to gain a full understanding of them. Students must choose appropriate learning strategies to develop their conceptual understanding, as their choices may influence both their understanding and their academic achievement (DiFrancesca *et al.*, 2016; Hattie & Donoghue, 2016). The primary aim of this study was to develop an understanding of why students experience difficulties with physiology concepts and how they respond when facing the challenge of learning those concepts. Undergraduate allied health students (n=105) studying physiology were asked to identify the concepts they had difficulty understanding, the strategies they used to deal with those difficult concepts and the reasons for their difficulties. Students' responses were subjected to inductive and deductive thematic analyses and their performance on examinations were collated. Students reported that they found concepts difficult due to complexity and their lack of familiarity with them. To aid their understanding of difficult concepts, students commonly reported reviewing information, seeking further information and seeking social assistance, with more high-achieving students reporting reviewing records, and fewer reporting seeking social assistance than poor-achieving students. A disconnect was found between students' reporting of difficult modules and their academic achievement on those modules, with students who highlighted difficulties performing equally well, if not better, than those who did not. Importantly, these findings suggest that in recognising their conceptual difficulties and the reasons for them, students can implement effective learning strategies to overcome them.

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