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Foreword

What keeps us going as teachers? What makes teaching the best job in the world? When asked this question, many teachers will talk about that light coming on in students' eyes, or the 'ah-ha' moment when students 'get it'. Lynn Erickson and Lois Lanning have provided me with some of my personal 'ah-ha' moments over the last few years. They have helped me to see how we can help students to 'get it', to be engaged in their learning and to understand how to transfer and apply their knowledge, understanding and skills in meeting complex global challenges. As a schoolboy in the 1980s I learned about isotopes as my teachers had learned it—by rote. Despite doing well in all of my science/chemistry exams I never really understood what an isotope is, or why I needed to know. By the age of 23 I had become a science teacher and began to teach about isotopes. After the first attempt to transfer my old school notes from my pen to the students' brains, I realised that they simply didn't get it. I looked at the patterns around the periodic table, at the way in which scientists use models to better describe phenomena and noted that isotopes were pretty useful in everyday life, for food preservation, health treatments and so on. My teaching of isotopes was transformed, but so too was my own understanding—so much that I now understand isotopes and I no longer rely on those notes my teacher made me repeat in the 1980s! This is the transformative effect of concept-based teaching and learning—the level of understanding, application and engagement lead to a far more satisfying experience for students and teachers.

In 2009 the Middle Years Programme (MYP) team at the International Baccalaureate (IB) were wrestling with ways to support and advise teachers on how to plan for concept based teaching. While reviewing research with both a theoretical and practical focus, the team found that the work of Lynn Erickson particularly resonated. As a result of this inspiration the team developed a rubric to show teachers the levels of planning for concept-based teaching and learning. This book provides an encouraging development of that thinking. Not only do we see the tried

and tested concept-based model and structure of learning from Erickson, but incredibly helpful rubrics for developing concept-based teachers and students from Lanning. The rubrics will help schools to put Lanning and Erickson's principles into practice. They are useful tools that could be adapted for use by teachers and school administrators, with the potential for powerful feedback from students as they reflect on learning.

Since 2011 Erickson has had a significant impact on the development of the 'new and improved' MYP curriculum. The central position given to key and related, or macro and micro concepts, is revolutionising the way teachers plan. The whole picture though isn't seen until we look at the full range of subjects studied by students, and to the influence of Lanning. Lanning's Structure of Process is the ideal complement to Erickson's Structure of Knowledge, and plays a particularly key role in informing the development of process-driven subjects such as the languages. Imagine a unit containing the following conceptual understanding: *A writer's intention may be to create sympathy, empathy or antipathy through selection of details and stylistic choices.* One quickly sees the rich and almost endless possibilities of ways to address the embedded concepts, and then to see students transferring their understanding of strategies and process.

The paradigm shift Erickson and Lanning discuss in this book can also be seen in the example of the IB Diploma Programme history course, where the curriculum for 2015 onwards will have an explicit focus on the key concepts of change, continuity, causation, consequence, perspectives and significance. In previous iterations of the course a teacher selecting to teach the theme of 20th century wars would have been presented with a prescribed list of wars for detailed factual study. In the coming IB history course, key concepts will serve as a conceptual "lens" or focus and allow teachers to ground the concepts in specific wars which are of particular relevance and interest to their students and situation. Crucially this shift has also been carried through into the assessment of the course. Students are asked, for example, to write essays discussing the extent to which ideology or religion was the main cause of a particular war they have studied, and then respond to the question, 'Why are conflicts driven by ideology or religion so difficult to resolve?' In a language arts class students may be asked to evaluate how selected authors with very different styles use literary techniques to build suspense in a narrative. These are just two examples, but they clearly demonstrate the exciting potential and positive impact that the shift to a more concept based approach has on the experience of both the teacher and the student. It is easy to see how learning will become more engaging as students use synergistic thinking to address challenges that have relevance to their lives.

For teachers who have been inspired by students demonstrating synergistic thinking and deep conceptual understanding, this book is the ideal blend of the theoretical and practical. Showing how students' conceptual understanding of both knowledge and process can be supported and deepened through quality instruction backed by a high level curriculum serves all educators well. Using the rubrics and the examples contained throughout, this book helps us to see more lights come on in the eyes of students, which is what makes us all get out of bed in the morning.

—Malcolm Nicolson
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