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MICHAEL HELD'S OPEN TEXTBOOK JOURNEY

Grantee: Michael Held

Position: Director

Department: Orthopaedic Research Unit

Faculty: Health Sciences

Course: Orthopaedics

Degree level: Undergraduate

Title of initiative: Learning Innovation through Orthopaedic Networks

Title of open textbook: *Orthopaedics for Primary Health Care*

Introduction

Dr Michael Held is the Director of the Orthopaedic Research Unit in the Faculty of Health Sciences at the University of Cape Town (UCT) and a founding member of the Learning Innovation through Orthopaedic Networks (LION) initiative. Michael currently teaches orthopaedics to undergraduate students and postgraduate trainees. He also runs a fellowship for knee surgery.

Through the work of the LION initiative, he aims to provide an interactive educational platform for medical students and primary care providers in Southern Africa.

Michael is passionate about student-centred collaborative learning and believes in the power of a networked approach towards building a curriculum that is appropriate for the South African context. In February 2019, Michael received a grant from the Digital Open Textbooks for Development (DOT4D) project to support the development of the *Orthopaedics for Primary Health Care* open textbook.



The Digital Open Textbooks for Development (DOT4D) project in the Centre for Innovation in Learning and Teaching at the University of Cape Town (UCT) provided grant funding and implementation support to 10 open textbook projects in the period from March 2018 – March 2019, as well as implementation support to an 11th initiative. The Open Textbook Journeys series tells the stories of the people driving these initiatives, their teaching and publishing processes and what inspires them to do this work. These case studies were developed in collaboration with and reviewed by the open textbook authors profiled.

This case study draws on:

- Michael's grant proposal to the DOT4D project.
- Michael's grant report to the DOT4D project.
- Fieldnotes from the DOT4D Publishing and Implementation Manager.

What is the problem Michael is trying to address?

One of the main educational challenges for medical students is the limited contact time they have to acquire skills and knowledge in orthopaedic surgery. As such, the brief exposure students get to orthopaedic surgery in their undergraduate studies is inadequate in terms of the preparation they require for clinical work. This problem is amplified by the fact that internships and community service work in South Africa have a large orthopaedic component, with a high percentage of trauma patients suffering from orthopaedic injuries.

Current orthopaedic learning resources are mainly based on guidelines and textbooks from the Global North. There is therefore a severe lack of African learning materials which are tailored to local pathology and circumstances, and written by local experts.

The *Orthopaedics for Primary Health Care* textbook aims to provide accessible learning material that is practical and relevant to undergraduate medical students in Southern Africa and can be used as a continuous learning or reference resource by primary care physicians.

Michael's open textbook journey

Original plan

It was originally envisioned that the resource could be used as a basis for ongoing collaborative content development and student-centered teaching and learning. The plan was set to a particular timeline with the goal of producing 10 chapters in four to five months as a pilot.

The overall transformative and innovative ambition of the resource was that it could function as an openly licensed, content-based 'backbone', which general practitioners (GPs) and medical interns would be able to use as reference in their practice, with a particular focus on local pathology and local treatment options.

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The content development process and student involvement

Michael adopted a 'lead author as editor-in-chief with student and colleague co-authors' approach to content development, involving students, academics and practitioners.

The process of scoping and developing content for the *Orthopaedics for Primary Health Care* textbook was linked to the curriculum transformation process for the undergraduate orthopaedics course. In line with this approach, a Delphi consensus study was run with a target group of medical students and primary care physicians by the LION initiative in order to establish which cases, knowledge and skills were deemed most important to include in the curriculum. Once these topics and areas of interest were identified, local authors were approached to establish collaborative authorship relationships with students to avoid expert blind spots.

The next step in the process was to create an open textbook of short chapters (originally envisioned as one or two pages each) written by orthopaedic consultants in collaboration with medical students. These local experts were approached by Michael under the auspices of the LION initiative.

In order to kickstart the content development process, 10 topics were chosen through the prioritisation suggested by the Delphi consensus study as a pilot. Chapters for these topics were then written by the local experts and given to a group of students who were invited to provide feedback and edit them as part of their course work. The content development process involved students in the production process in the hope that this would make the textbook more student-centred and understandable, and eliminate expert blind spots.

In addition to the development of text-based chapters, students were brought on board to develop video-based content demonstrating the procedures in skills-based chapters.

This content was released as part of the established UCTeach Ortho¹ YouTube channel, which has an extensive collection of content and over 6,000 subscribers.

This pilot process, which took place in 2019–2020, was emulated on additional topics which had been identified in the Delphi study and resulted in the publication of 32 chapters of the *Orthopaedics for Primary Health Care* textbook, 13 of which were accompanied by video demonstrations of procedures. PDFs of the chapters were published on the UCT Orthopaedic Department website² and on UCT's learning management system (LMS)³ in 2020. The published chapters range between one and five pages in length, and retain the original ambition of being short, practical chapters that can be accessed and understood independently of the larger collection of textbook content.

'Get it out first and then work on improving the editing is the advice I was given ... This was instrumental'

In reflecting on his experience, Michael stated that the production of the book had taken a lot of time. He explained that the start of the textbook development process was extremely challenging and that buy-in was minimal. In this process, Michael learned to be persistent. He stated that it was unnecessary to get hung up on detail and that it was more important to produce the final product, saying: 'Get it out first and then work on improving the editing is the advice I was given ... This was instrumental.'

Publishing process

In terms of the publishing process, Michael adopted the 'initiative as self-publisher' approach, in that the LION initiative was the primary publishing entity (with Michael as editor-in-chief). Within this process, Michael took on the responsibility for content commissioning, authorship, quality control and publishing.

Michael utilised the UCT Orthopaedic Department website and the UCT LMS in his initial dissemination strategy, as he had control over this publishing process (in that he could upload chapters himself) and did not need to adopt any new platforms or technologies to share the textbook content.

¹ https://www.youtube.com/channel/UCR_mzghDSTLZ32sBJ18Xow/featured

² <https://www.ortho.capetown/primary-care-orthopaedics>

³ The content in the LMS was password-protected and restricted to Michael's students and immediate colleagues.

UCT's LMS had the additional benefit of being zero-rated⁴ for students and did therefore not incur data costs. It was also the primary interface between Michael and his students for the undergraduate orthopaedics course, allowing for easy integration of the textbook content with the curriculum.

At the time of writing, Michael was continuing his publishing process with support from the DOT4D project, and was working on adding additional chapters to the collection. This publishing process entailed proofreading of the first 32 chapters published on the website, as well as layout and proofreading of an additional 20 chapters. This total set of 52 chapters would comprise the full first edition of the textbook.

Content development and publishing tools

Michael and his collaborators used MS Word to author their content. The typesetting of the original 32 chapters was done in Adobe InDesign.

When Michael undertook the additional layer of publishing work with the DOT4D Publishing and Implementation Manager (PIM) in 2020 following the release of the first batch of chapters, a decision was taken to adopt a MS Word template approach. The text design of the original 32 chapters was imitated in a Word template and the additional 20 chapters were typeset in line with this style. This measure was taken so that Michael (or a collaborator) could more easily produce and lay out new chapters without requiring knowledge of InDesign.

Copyright and licensing

Chapter authors utilised their own images as far as possible, or obtained permission for image reuse with attribution in certain instances.

All content in the *Orthopaedics for Primary Health Care* collection is licensed under a Creative Commons Attribution 4.0 International licence. All authors have retained their copyright.

Quality assurance and sustainability

The quality assurance within the textbook's content development process involved a number of academic orthopaedic surgeon consultants who checked the quality of the material presented in the chapters. The Orthopaedic Department website,⁵ which hosts the content, also has a feedback mechanism for anyone who wishes to comment on or correct content.

⁴ <http://www.icts.uct.ac.za/Zero-rated-access-some-UCT-websites>

⁵ <https://www.ortho.capetown/primary-care-orthopaedics>

Michael also played a quality assurance role in his capacity as editor-in-chief, in that he remained attentive to the quality of work produced by students.

Status at grant closure

At the close of the one-year grant period in February 2020, Michael reported that students had benefited from the open textbook, in that they had a new textbook which had been made available to them free of charge. In addition to this, it was peer reviewed, modernised, included new pictures, and up to date with recent literature.

The *Orthopaedics for Primary Health Care* textbook received the inaugural UCT Open Textbook Award in 2020,⁶ shared with Professor Johan Fagan's *Open Access Atlas of Otolaryngology, Head and Neck Operative Surgery* textbook.

The main challenge experienced within the textbook development process was that it took a lot of time to conceptualise and develop the contents

Challenges experienced and lessons learned

Textbook development takes time

The main challenge experienced within the textbook development process was that it took a lot of time to conceptualise and develop the contents. Michael believed that he should have assembled a team before starting the process of chapter writing in order to avoid the time challenge this incurred.

Contributors had varying levels of interest and capacity

Michael stated that it was not always possible to get the correct author configuration for the different chapters. Consultants sometimes produced expert blind spots and students did not always have the deeper knowledge and insight to counteract this. Thankfully, however, the postgraduate students were eager to produce content.

Budget

Overview of the original budget submitted to DOT4D as part of 2018 grant application, with actual expenditure.

Budget projected at proposal phase

Editing: R17,000
Chapter design and formatting: R10,000
Formatting for print and digital layout: R3,000

Total: R30,000

DOT4D grant amount: R30,000

Project actual expenditure

Editing, design of book chapters and images: R18,000
Cover and logo design: R3,150
Software purchase (InDesign): R1,525
Equipment: R7,325

Additional resourcing

Proofreading: R10,000
(supplementary DOT4D grant)
Typesetting: R10,000
(supplementary DOT4D grant)

Total expenditure: R50,000

⁶ <http://www.dot4d.uct.ac.za/news/uct-open-textbook-award-winners>