INTRODUCTION

Multiple authors at the University of Cape Town (UCT) are undertaking open textbook journeys in which they navigate the intricacies of open textbook production and the successes and failures that are part of this endeavour.

Open textbook production at UCT currently takes place with limited formal institutional support or coordination, relying on academics' desire to develop and share their materials at no cost in order to provide a richer learning experience for their students. The lack of any formal recognition system for this work typically means that it needs to be undertaken after-hours, over and above formal teaching and research commitments. The fragmented nature of this activity also means that the expertise being developed around open textbook production is confined to small pockets within the institution. Thus, it is imperative that the stories of the academics who are undertaking this work are profiled and shared.

What are open textbooks?

Open textbooks are digital, freely available collections of scaffolded teaching and learning content published under an open licence on platforms and in formats that provide affordances for content delivery on a range of devices, the integration of multimedia and the incorporation of content from varying sources through collaborative authorship models. In some instances, they also provide affordances for print and low-bandwidth access strategies.

The collection of open textbook 'journeys' presented here aims to contribute to a better understanding of open textbook publishing and production activity at UCT by exploring the stories of open textbook authors. In the articulation of their journeys, this collection captures the granular details of academics' endeavours as relates to open textbook development, revealing their thoughts and reflections as they navigate different aspects of the process. It aims to shed light not only on how to go about open textbook production, but how to 'think' about this endeavour as different ways of conceptualising the process lead to different results.

Digital open textbooks for development

The journeys presented here emerge from the work of the Digital Open Textbooks for Development (DOT4D)[1] project at UCT. The project aims to contribute to improving inclusion in South African higher education by addressing equitable access to appropriate and relevant learning resources. It operates under the hypothesis that open textbooks have the potential to enhance social justice in teaching and learning through inclusive content development strategies. The specific aims of the project are to:

- Articulate and identify the options for open textbook approaches which contribute to a social justice agenda.
- Support open textbook publishing activity at UCT that prioritises strategies for integrating student perspectives, curriculum transformation and sustainability.
- Inform current textbook publishing policy-development initiatives at institutional and national levels.

The stories presented here provide detailed narratives of 10 open textbook initiatives which received funding in the DOT4D grants programme. It also includes the narrative of one open textbook practitioner who received DOT4D technical, but not financial, support. Together, they provide rich anecdotal evidence about current open textbook production models and practices at UCT that advance social justice.

The table below provides an overview of the authors and initiatives profiled, with links to author bios and outputs produced (where possible).

The work presented in this series informs the project's advocacy activity. In so doing, it also aims to provide an evidence base upon which to scale open textbook activity at other South African institutions.

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[1]   http://www.dot4d.uct.ac.za/

Grantee	Grant initiative	Output	Discipline
Dr Cesarina Edmonds-Smith & Dr Chris Barnett	Ingxoxo	Online discussion forum on first-year chemistry concepts (with focus on isiXhosa translation). 'Living textbook' still in 'closed' (classroom-only) prototyping and content development phase.	Chemistry
Dr James Lappeman & Dr Paul Egan	Marketing to South African Consumers	Open textbook comprised of 21 chapters co-published online in PDF, HTML and EPUB formats and in print by the Liberty Institute of Strategic Marketing and UCT Libraries.	Marketing
Dr Michael Held & Learning Innovation through Orthopaedic Networks (LION)	Orthopaedics for Primary Health Care	Open textbook comprised of 52 chapters co-published with UCT Libraries and made available on their open access Continental Platform.	Orthopaedics
Assoc. Prof. Maria Keet	An Introduction to Ontology Engineering	Open textbook comprising new edition of world's first textbook for computer scientists in this subfield (first published 2018), including new chapter co-written with former student and focus on multilingual approach.	Computer Science
Tim Low	Introduction to Probability (isiXhosa version)	Two chapters translated from existing Introstat (2013) open textbook as proof-of-concept collaboration between author, students and linguist academics. Translations in the process of being finalised for release in line with faculty transformation and multilingual efforts.	Statistics
Stella Papanicolaou and team	Modern Architectures: Cape Town	Open textbook profiling Modern Movement architecture of Cape Town in the context of the decolonial gaze. Part of a series of outputs and activities in the Modern Architectures in the Global South initiative.Student content also shared on uctma.gs Instagram page.	Architecture
Dr Jonathan Shock	Introduction to Complex Numbers	First prototype chapter for the Introduction to University Level Mathematics for a South African Audience open textbook, which is being designed to replace the prescribed work for first-year mathematics students in line with faculty transformation efforts.	Mathematics
Assoc. Prof. Abimbola Windapo	Fundamentals of Construction Management	Freely available textbook addressing construction management from Global South perspective.	Engineering
Dr Claire Blackman	Mathematics Textbooks for South Africa	Open textbook addressing high cost of current textbook, localisation and techniques for thinking about and writing mathematics. Process in incubation.	Mathematics
Kensleyrao Apajee	First-Year Mechanical Engineering Drawing	Undergraduate guide to engineering drawing tailored to the local context and structured to adequately support student learning. Process in incubation.	Mechanical Engineering
Dr Juan Klopper	The Open Surgery Textbook	Project engaging young doctors and domain experts to identify and collaboratively author content in video tutorial format for delivery via Instagram. Process in incubation.	Surgery

Methodology

The data presented in this study is derived from a mixed-methods research and implementation approach which gained insights from the range of research activities conducted within the project spanning over 18 months. These activities included:

- Two rounds of in-depth interviews (of approximately 1.5 hours each) with five UCT open textbook authors.

- A Background, Technology Fluency and Personal Reflection (BTFPR) survey administered to the 11 UCT grantees in the DOT4D grants programme and one open textbook practitioner.
- Analysis of grant proposals that were submitted by these 11 grantees in application for the DOT4D grant and the grant reports that were submitted by grantees at the close of their grant period.

These data collection activities were supplemented with the field notes of the DOT4D Publishing and Implementation Manager tracking 15 months of interactions with the UCT open textbook community.

Participants were invited to review drafts of their case studies in order to provide feedback and clarification. This consultation with authors served as a valuable data verification process as well as a reflexive opportunity for authors to examine their practice.

Open textbook journeys

The concept of 'journeys' emerged from exploring the various aspects and components involved in UCT authors' conceptualisation, production and publishing of open textbooks. In order to capture the details of these journeys, the stories presented here are structured around key components of activity they undertook in open textbook production. These are the elements of the journey we focus on in the stories presented:

Original plan

We began our exploration of these journeys by unpacking the ways in which academics envisioned their open textbook initiatives and their aspirations therein. We explored how they initially conceptualised their work and the different kinds of plans they set out for this endeavour. This component also explores the drivers that inspired these academics to undertake their open textbook development processes and their underlying social justice dimensions.

Authorship approach

Authorship approaches provide a means to understand the strategies that open textbook authors were employing in order to be able to produce their content. This element particularly highlights collaboration aspects of various authorship strategies.

Content development process and student involvement

Content development processes highlight the different approaches and methods of production that academics use in the creation of open textbooks and the kinds of approaches that are available to them. This was also done to help understand how their approaches towards content development could be best aligned with disciplinary requirements. In addition, this exploratory process helped the authors to understand the ways in which academics could include student participation in the development of content as a means to address social justice imperatives.

Publishing process

The processes around publishing allow us to understand the roles that academics assumed in publishing their work, the kinds of publishing strategies and models they adopted within their initiatives, and the partner entities they engaged. Within this, we explored how academics were thinking about ways in which to make their content more accessible and inclusive in terms of relevance, format and genre.

Content development and publishing tools

Content development and publishing tools provide insight into the mechanics of UCT academics' open textbook production and the technical resources they made use of in their processes, such as authoring tools and software.

Copyright and licensing

Academics had to navigate a variety of copyright and licensing issues during their content development and publishing processes.

Quality assurance and sustainability

Quality assurance and sustainability measures undertaken reveal the mechanisms and strategies for content review (whether it be by students, colleagues or external partners) that were established in the various content development processes. This included examining the steps these academics envisioned in order to address future updates and revisions to their work.

Challenges experienced and lessons learned

Lastly, we probed the challenges experienced and lessons learned in each author's journey as a means of capturing the struggles encountered in the various aspects of their production process and the ways in which they navigated this and adapted their processes in order to reach their goals.

Conclusion

The open textbook journeys presented here are a bouquet of stories and experiences as they happened for each author. As such, there is no question of right or wrong, or success versus failure, in the way in which we have chosen to present this collection or in the telling of these individual stories. Our hope is that each journey will provide insight into the varied ways in which the task of open textbook production can be undertaken, the different outcomes that can be produced and the lessons that can be learned.