Learning in a changing climate: an ethnographic study from the Global South

A thesis submitted in fulfilment of

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Doctor of Philosophy

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Certificate of original authorship

I, Raviro Chineka declare that this thesis, is submitted in fulfilment of the requirements for the award of Doctor of Philosophy degree in the School of Education, Faculty of Arts and Social Sciences at the University of Technology Sydney. This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution.

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Signature: Production Note: Signature removed prior to publication. Date: 9 April 2019

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This dissertation is my own work, but it would have not been possible to accomplish without the input of several individuals and organisations, too many to mention by name. However, I will name a few prominent contributors.

My heart goes out to my research participants: all the children in the Eco-Schools Club at my study site and their families. However, special mention goes to the children who participated in individual interviews; I will keep their names and those of their families anonymous to protect their privacy. I dedicate this thesis to these and other children out there who put in their all to make the world a better place to be, the children who shoulder the world's problems and clean up a mess they never created while adults create even more mess. I deeply appreciate their parents and guardians for not only allowing their children to participate in the study, but also for sharing insights into how community learning and adaptation takes place. My heart goes out to the two traditional leaders and the one family, a more successful family who serves as a role model for other farmers in the community. I am heavily indebted to the three teachers who served as patrons to the school eco-club, and the founder and national patron of the eco-schools programme, as well as the three government agencies who served as key sources of data.

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Statement indicating format of thesis

This is a conventional thesis.

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List of acronyms

ABC-	Attitude Behaviour Choice
AEO-	Agricultural Extension Officer
Agritex-	Agricultural Research and Technical Services
AIDS-	Acquired Immuno Deficiency Virus
ATR-	African Traditional Religion
CC-	Climate Change
CD-	Compact Disc
CCE-	Climate Change Education
CCEL-	Climate Change Education and Learning
CHAT-	Cultural Historical Activity Theory
DA-	District Administrator
EE-	Environmental Education
EMA-	Environmental Management Agency
ESC-	Eco-Schools Club
ESP-	Eco-Schools Programme
ESD-	Education for Sustainable Development
GHG-	Green House Gas
GoZ -	Government of Zimbabwe
HIV-	Human Immuno Deficiency Virus
ICT-	Information Communication Technologies
IPCC-	Intergovernmental Panel on Climate Change
IUCN-	The World Conservation Union
MEWC-	Ministry of Environment Water and Climate
MoPSE-	Ministry of Primary and Secondary Education
NCCRS-	National Climate Change Response Strategy
NGO-	Non-Governmental Organisation

PUS-	Public Understanding of Science
SMS-	Short Text Message
STS-	Science Technology and Society
TV-	Television
UK-	United Kingdom
UN-	United Nations
UNEP-	United Nations Environment Programme
UNESCO-	United Nations Education Scientific and Cultural Organisation
UNFCCCC-	United Nations Framework Convention on Combating Climate Change
USD-	United States Dollar
UTS-	University of Technology Sydney
WWF-	World Wide Fund for Nature
ZIMSTATS-	Zimbabwe Statistics Office
ZPD-	Zone for Proximal Development
ZP'S'D-	Zone of Proximal 'Safe' Development

Abstract

Adaptation to climate change has become an undeniable reality intricately linked to human existence and the planet's well-being. Historically, climate change adaptation research has been dominated by the physical sciences typically modelled around Global North perspectives. This study investigates how people in the Global South, in a largely agricultural community in Zimbabwe learn to change and adapt their everyday practices in response to climate change.

An ethnographic approach involving fieldwork data from observations, narratives and photography from eight families purposively drawn from 30 families whose children belonged to a local school's Eco-Schools Club (ESC) provided the data. It was anticipated, based literature that intergenerational learning would be evident in these families as the children gained scientific knowledge about climate change mitigation and adaptation through the ESC.

The study drew upon Engeström's Cultural Historical Activity Theory to analyse the possibilities of expansive learning, that is learning leading to radical and sustainable change, by examining how disturbances to the socio-material configuration of existing practices are managed.

Contrary to reports from the Global North, the ESC was not a dominant source of learning because of the status traditionally ascribed to children within the community, and the criticality of the issue the knowledge would impact upon. Learning and change reflected in the families' everyday practices was motivated most profoundly by the threat of *Nzara* (food insecurity). Changes occurred not through ready adoption of the abundant advice available to them, including from technical experts; learning was incremental, precipitated by questioning and reflection of existing knowledge and practices and evaluating innovations within a collective zone of proximal development (ZPD). Community members collectively gained new knowledge eventually altering some stable elements within existing practices. The collective ZPD significantly influenced changes because individual households felt secure if others were willing to experiment with a different approach. Thus, the collective ZPD could be conceptualised as a zone of proximal 'safe' development (ZPSD).

As the driver for change, climate change, was itself intractable achieving any single sustainable practice is, unlikely; the likely future is a continuing cycle of learning and change. The study proposes a new way of approaching interventions. Interventions may be reconceptualised not as solutions but sources of learning where learning extends beyond community members to include technical experts in mutual settings where knowledge is co-produced and diverse perspectives negotiated.