UNIVERSITY of TASMANIA

University of Tasmania Open Access Repository

Cover sheet

Title
Institutional Collaboration, Learning and Context: A Case Study of Tasmanian Information Technology Institutions

Author
Bound, HI

Bibliographic citation
Bound, HI (2007). Institutional Collaboration, Learning and Context: A Case Study of Tasmanian Information Technology Institutions. University Of Tasmania. Thesis. https://doi.org/10.25959/23211035.v1

Is published in:

Copyright information
This version of work is made accessible in the repository with the permission of the copyright holder/s under the following,

Licence.

Rights statement: Copyright 2007 the Author

If you believe that this work infringes copyright, please email details to: oa.repository@utas.edu.au

Downloaded from University of Tasmania Open Access Repository

Please do not remove this coversheet as it contains citation and copyright information.

University of Tasmania Open Access Repository

Library and Cultural Collections
University of Tasmania
Private Bag 3
Hobart, TAS 7005 Australia
E oa.repository@utas.edu.au CRICOS Provider Code 00586B | ABN 30 764 374 782 utas.edu.au

Institutional Collaboration, Learning and Context: A Case Study of Tasmanian Information Technology Institutions

Helen Bound

Submitted in fulfilment of the requirements for the degree of
Doctor of Philosophy
Faculty of Education
University of Tasmania
2007

Declaration of Originality

This thesis contains material that is original, except where due acknowledgement has been given. Material in this thesis has not been accepted for a degree or diploma by the University of Tasmania or any other institutions, except by way of background information and duly acknowledged in this thesis. To the best of my knowledge I believe that no material previously published or written by another person is cited except where due acknowledgement is made in the text of the thesis.

Authority of Access

This thesis may be made available for loan and limited copying in accordance with the *Copyright Act 1998*.

ABSTRACT

With increasing devolution of governance, collaboration has become ever more important as a means for community groups, regions and institutions to meet their needs. Firms also use a variety of collaborative arrangements to meet their need to compete effectively in local and global markets. However, for all the growth in collaborative activity, there are many fraught or failed attempts suggesting a need to better understand the processes of collaboration. This thesis contributes to our understanding of institutional collaboration, focusing on institutional collaborative activity, learning and context. Collaboration is not considered as a stand-alone activity, but as an activity that is a learning process influenced by context.

Context, institutional collaboration and learning are generally treated as separate components or processes. Furthermore, context is often depicted as that which is external to phenomena, but which impacts on the phenomena. Activity theorists, however, generally recognise context as being intrinsic to activity, noting the mediation of context within the contradictions of the activity. However, Cultural Historical Activity Theory tends not to explore the mediating influence of context as social relations of the mode of production and historical trajectories beyond acknowledging these influences. Rarely is the mediation of economic, social, political and ideological influences arising from the social relations of production explored in depth. In this thesis, these mediating influences are termed contextual conditions and include the mode of production, dominant discourses, policy, industry development, regional infrastructure and institutional arrangements analysed. The mediating influence of contextual conditions on institutional collaborative activity contributes significantly to our understanding of institutional collaborative activity.

A case study methodology of information technology institutions and their collaborative activity between 2002 and 2004 in a small regional state of Australia is used in this thesis. Cultural Historical Activity Theory is used to develop data collection tools and to analyse the data. Engeström's (2004) advice to follow the object when studying interaction between institutions is employed as a key data

collection and analytical tool. A focus on a developing Marine Information, Communications and Technology Cluster and the involvement of three key Tasmanian information technology institutions is used to analyse how contextual conditions mediate collaborative activity and learning.

Within the limitations of a case study, this thesis contains important lessons for policy makers. Analysing the influence of contextual conditions on collaborative activity becomes a tool for policy makers in identifying where their efforts and resources might best be placed. In a small regional State for instance, it was evident that there were limited institutional arrangements in place at the time data was collected. It was evident there was a role for state government policy makers to assist development of the industry and its collaborative capability. This would include encouraging the development of relations and exchange between institutions such as the employer, research and government institutions. Such a role would potentially increase the capacity of a small industry. However, without a tool such as analysis of analysing the influence of context on collaborative activity, this role was not apparent to those involved.

Acknowledgements

All those respondents I interviewed and/or spoke with to make appropriate contacts, or set up observations or participate in industry activities gave generously and freely of their time. Without them there would be no thesis! Thank you.

My supervisor, Doctor Christine Owen, provided constant challenge and support on my journey to complete this thesis while also exhibiting great patience. She introduced me to new ideas and ways of thinking and writing that resulted in discussions that challenged and developed me. Christine initiated me into research and built my foundational research skills through opportunities to work with her on a number of research projects. Her belief in my ability was critical to my perseverance and development.

I would also like to thank Associate Professor Sue Kilpatrick who provided me with multiple opportunities to work with her on a range of national research projects, giving me confidence in my research skills. Also generous with his time was Professor Bevis Yaxley who guided me through the final editing process while Doctor Christine Owen was on study leave overseas. Professor John Williamson's feedback as an academic reader was insightful, resulting in improved clarity of structure and signposting within my writing.

I had many offers from family and friends who also contributed to the final quality of the thesis through critical, careful reading. I would particularly like to thank my sister, Dr Sally Bound and my father, Max Bound.

My husband, Robert Vincent, has been a source, not only of constant encouragement and moral support, but played a critical role in assisting me by being there to critique and challenge. His pride almost outshines my own! My children, Carla Vincent and Vincent Bound, have both been patient and supportive, urging me to complete. Carla's assistance in using her computer design skills to improve the presentation of my contextual conditions figure is much appreciated.
Thank you!

Contents

Abstract 4
Tables..... 12
Figures 13

Chapter 1 Institutional Collaboration, Learning and Context**Error! Bookmark not defined.**
1.0 Introduction.....**Error! Bookmark not defined.**
1.1 Background .....**Error! Bookmark not defined.**
1.1.1 Collaboration.....**Error! Bookmark not defined.**
1.1.2 Learning.....**Error! Bookmark not defined.**
1.1.3 Context.....**Error! Bookmark not defined.**
1.2 Activity Theory.....**Error! Bookmark not defined.**
1.3 Research Design.....**Error! Bookmark not defined.**
1.4 Organisation of the Thesis.....**Error! Bookmark not defined.**

Chapter 2 Reviewing the Literature**Error! Bookmark not defined.**
2.1 Introduction.....**Error! Bookmark not defined.**
2.2 The collaboration Literature .....**Error! Bookmark not defined.**
2.3 Collective Learning.....**Error! Bookmark not defined.**
2.3.1 The Team Literature .....**Error! Bookmark not defined.**
2.3.2 Organisational Learning Literature**Error! Bookmark not defined.**
2.3.3 Networking Literature ..**Error! Bookmark not defined.**
2.3.4 Regional and Institutional Learning**Error! Bookmark not defined.**
2.3.5 Socio Cultural and Activity Theoretical Perspectives .....**Error! Bookmark not defined.**
2.4 Features of Collective Learning**Error! Bookmark not defined.**
2.4.1 Diversity.....**Error! Bookmark not defined.**
2.4.2 Coordination and Decision Making **Error! Bookmark not defined.**

2.4.3 Information Flow and Knowledge Creation.....**Error! Bookmark not defined.**

2.4.4 Common or Shared Understandings**Error! Bookmark not defined.**

2.4.5 Trust and Support .....**Error! Bookmark not defined.**

2.5 Conclusion.....**Error! Bookmark not defined.**

Chapter 3 Methodology.....**Error! Bookmark not defined.**

3.1 Introduction.....**Error! Bookmark not defined.**

3.2 Judging the Research Process.**Error! Bookmark not defined.**

3.2.1 Developing Criteria for Judging the Research Process .....**Error! Bookmark not defined.**

3.3 Methodology .....**Error! Bookmark not defined.**

3.3.1 The Case Study.....**Error! Bookmark not defined.**

3.3.2 Stages of Data Collection ..... **Error! Bookmark not defined.**

3.3.3 Data Collection.....**Error! Bookmark not defined.**

3.4. Analysis.....**Error! Bookmark not defined.**

3.4.1 Analysis of Data Collected in Stage 2**Error! Bookmark not defined.**

3.4.2 Analysis of Data Collected in Stage 3**Error! Bookmark not defined.**

3.5. Limitations.....**Error! Bookmark not defined.**

3.6. Summary.....**Error! Bookmark not defined.**

Chapter 4 The Tasmanian Information Technology Industry**Error! Bookmark not defined.**

4.1 Introduction.....**Error! Bookmark not defined.**

4.2. The Island State of Tasmania...**Error! Bookmark not defined.**

4.2.1 The National Information Technology Industry..**Error! Bookmark not defined.**

4.3 National Policy.....**Error! Bookmark not defined.**

4.3.1 Clusters.....**Error! Bookmark not defined.**

4.4. Conclusion .....**Error! Bookmark not defined.**

Chapter 5 Collaboration in the Tasmanian Information Technology Industry .....**Error! Bookmark not defined.**

5.1. Introduction.....**Error! Bookmark not defined.**

5.2 Tasmanian Information Technology Institutions**Error! Bookmark not defined.**

5.2.1 TasIT .....**Error! Bookmark not defined.**

5.2.2 Intelligent Island Board and Secretariat.....**Error! Bookmark not defined.**

5.2.3 Tasmanian Department of State Development**Error! Bookmark not defined.**

5.2.4 Information Technology Industry Council .....**Error! Bookmark not defined.**

5.2.5 Tasmanian Information Technology Industry Training Advisory Board.....**Error! Bookmark not defined.**

5.3. Collaboration Between the Institutions. **Error! Bookmark not defined.**

5.4 Conclusion.....**Error! Bookmark not defined.**

Chapter 6 Towards a Conceptual Framework: Contextual conditions and the object of collaborative activity**Error! Bookmark not defined.**

6.1 Introduction.....**Error! Bookmark not defined.**

6.2 Contextual Conditions .....**Error! Bookmark not defined.**

6.2.1 Contextual Conditions Relevant to the Evolving Marine ICT Cluster .....**Error! Bookmark not defined.**

6.3 Collaborative Activity and the Object.. **Error! Bookmark not defined.**

6.3.1 The 'Boundary Space' of Collaborative Activity**Error! Bookmark not defined.**

6.4 Conclusion.....**Error! Bookmark not defined.**

Chapter 7 The Ways in Which Contextual Conditions Influence Collaborative Activity .....**Error! Bookmark not defined.**

7.1 Introduction.....**Error! Bookmark not defined.**

7.2 The Evolving Object of Institutional Collaboration in the Developing Marine ICT Cluster.....**Error! Bookmark not defined.**

7.3 Contextual Conditions and Collaborative Activity .....**Error! Bookmark not defined.**

7.4 Mediation of Contextual Conditions on Collaborative Activity .....**Error! Bookmark not defined.**

7.5 Conclusion.....**Error! Bookmark not defined.**

Chapter 8 Institutional Collaboration as a Process of Learning .....**Error! Bookmark not defined.**

8.1 Introduction.....**Error! Bookmark not defined.**

8.2 A Learning Process.....**Error! Bookmark not defined.**

8.2.1 The Connecting Phase**Error! Bookmark not defined.**

8.2.2 The Interacting Phase..**Error! Bookmark not defined.**

8.2.3 The Participating and Committing Phases .....**Error! Bookmark not defined.**

8.3 Conclusion.....**Error! Bookmark not defined.**

Chapter 9 Ways in which Contextual Conditions Mediate Learning in Institutional Collaboration .....**Error! Bookmark not defined.**

9.1 Introduction.....**Error! Bookmark not defined.**

9.2 Mediation of Learning and Tools**Error! Bookmark not defined.**

9.3 The Social Relations of Production of Collaborative Activity .....**Error! Bookmark not defined.**

9.4 Tensions and Contradictions in the Social Relations of Collaborative Activity.....**Error! Bookmark not defined.**

9.5 Contextual Conditions and Learning in Collaborative Activity .....**Error! Bookmark not defined.**

9.5.1 Making Tensions and Contradictions Visible .....**Error! Bookmark not defined.**

9.6 Conclusion.....**Error! Bookmark not defined.**

Chapter 10 Conclusion .....**Error! Bookmark not defined.**

10.1 Introduction.....**Error! Bookmark not defined.**

10.2 Findings.....**Error! Bookmark not defined.**

10.3 Contributions of this thesis and their implications .....**Error! Bookmark not defined.**

10.4 Further investigation.....**Error! Bookmark not defined.**

References .....**Error! Bookmark not defined.**

Appendices.....**Error! Bookmark not defined.**

Appendix 1 The Researcher.....**Error! Bookmark not defined.**

Appendix 2: Changes in the Research Questions **Error! Bookmark not defined.**
Research questions .....**Error! Bookmark not defined.**
Focus of the study .....**Error! Bookmark not defined.**
Appendix 4: Interview questions .....**Error! Bookmark not defined.**
Stage one .....**Error! Bookmark not defined.**
Stage two .....**Error! Bookmark not defined.**
Stage three.....**Error! Bookmark not defined.**
Appendix 5: Ethics Application .....**Error! Bookmark not defined.**
Appendix 6: Letters of Invitation.....**Error! Bookmark not defined.**
Stage one .....**Error! Bookmark not defined.**
Stage 2 .....**Error! Bookmark not defined.**
Stage 3 .....**Error! Bookmark not defined.**
Appendix 7: Consent Forms.....**Error! Bookmark not defined.**
Stage one .....**Error! Bookmark not defined.**
Stage Two .....**Error! Bookmark not defined.**
Diverse groups such as Industry Bodies working together**Error! Bookmark not defined.**
Stage three.....**Error! Bookmark not defined.**
Appendix 8: Coding Tree .....**Error! Bookmark not defined.**
Appendix 9: Examples of Coded Data....**Error! Bookmark not defined.**
Appendix 10: Examples of Memos .....**Error! Bookmark not defined.**

TABLES

2.1	Literature on collaboration	39
2.2	Contributions and problematic of bodies of collective learning literatures	48
2.3	The contribution and problematic of different theoretical orientations	49
2.4	Diversity — contributions and problematic	57
2.5	Coordination and decision making — contributions and problematic	61
2.6	Information flow and knowledge creation — contributions and problematic	64
2.7	Shared understandings — contributions and problematic	69
2.8	Trust and support — contributions and problematic	72
3.1	Summary of processes used to address authenticity and trustworthiness	76
3.2	Stages of the research	79
3.3	Documents collected as data	83
3.4	Interviews and observations collected over each stage	86
3.5	Framework for initial data collection in stage two	88

6.1	Ways in which Wertsch's 10 claims add to an understanding of mediation	146
6.2	Collaborative and institutional objects of activity and goals	150
7.1	The evolving object	157
7.2	Collaborative activity and contextual conditions	164
8.1	Evolving object and phases of collaborative activity	180

FIGURES

1.1	Mediated action	30
1.2	Activity system	32
4.1	Map of Australia	99
4.2	Map of Tasmania	100
4.3	Age profile of Tasmanian information technology companies	106
6.1	Contextual conditions	134
6.2	Interacting activity systems	153
8.1	Phases of learning in the collaborative process	182
8.2	Connecting networks	184
9.1	Social relations of production	204