Collaborative Interdisciplinary Publication Skills Education:
Implementation and implications in international science research contexts

Margaret Cargill
B.A. (German and French) University of Sydney
Dip.Ed., University of Sydney
M.Ed (TESOL), University of South Australia

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Abstract

This portfolio of three research projects addresses at an educational level the increasing pressure on scientists internationally to publish research in highly-ranked, peer-reviewed journals, and thus in English. Building on a tradition of collaboration between language- and content-based expertise in English for Specific/Academic Purposes, the portfolio examines the contribution of a pedagogical approach dubbed Collaborative Interdisciplinary Publication Skills Education (CIPSE) for teaching novice scientist authors who use English as a first or additional language.

Project 1 examines CIPSE development from its antecedents in content-based learning and genre analysis, culminating in the production of a teaching text/website package *Writing Scientific Research Articles: Strategy and Steps* (WSRA) by a collaborative team of the candidate, an applied linguist, and a publishing, refereeing scientist. The aim was to redress the incomplete coverage of existing approaches to produce a resource accessible to novice authors of all language backgrounds and to teachers/mentors within both science and language contexts. The research questions driving Projects 2 and 3 emerged from initial implementation of CIPSE, and were addressed by analyzing evaluative data from selected implementation sites.

Project 2 investigates interdisciplinary teams for publication skills development. Part A, framed within the constructs of interdisciplinary higher education, demonstrates that the CIPSE structure, led by an applied linguist working with interdisciplinary collaborators as appropriate/available in each presentation context, was effective at all levels of collaboration. It was important that CIPSE outcomes were ‘core business’ for collaborators, and a need was identified for terminology that intersects with the agendas of those with power to implement. Part B, framed within English for Specific Purposes, focuses on challenges to interdisciplinary collaboration in China. Recommended strategies for developing collaboration between Chinese scientists and English-language professionals, rather than foreign visitors, include institutional support for collaboration, and training to enhance the ability of English professionals to present themselves as bringing valuable expertise to publication skills education.

Project 3 investigates CIPSE effectiveness for Chinese scientists at different career stages. Part A, addressing academic writing instruction, highlights challenges to publication success for EFL (English as a Foreign Language) science researchers as identified by CIPSE workshop participants. Introducing the WSRA package to Chinese scientists who train/mentor students resulted in significantly increased confidence both to write/publish their own articles and to teach others, and a shift in the training methods deemed appropriate. Part B analyses a 4-cycle action research study at
the Graduate University of the Chinese Academy of Sciences, Beijing, 2006-9, to investigate use of CIPSE in an EFL university with early-candidature students from mixed disciplines. The resulting adapted, CIPSE-based course shows potential for use by Chinese teachers.

Taken together, the three projects provide a theorised basis and practical steps for building effective training regimes for publication skill development in a wide range of science research contexts. Overall findings are summarised as a matrix of descriptor scales for analysing training contexts to identify cost-effective levels of collaboration: client training goals, trainee research experience, training program type, and English language context. The portfolio findings thus contribute to knowledge of interdisciplinary collaboration in education and context-sensitive implementation of educational innovation.
Signed statement

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I begin by acknowledging the Kaurna people of South Australia, the original custodians of the land on which this portfolio of research was written.

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## List of abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AdTAT</td>
<td>Adelaide Text Analysis Tool (concordancing software)</td>
</tr>
<tr>
<td>ALL</td>
<td>Academic Language and Learning</td>
</tr>
<tr>
<td>CAS</td>
<td>Chinese Academy of Sciences</td>
</tr>
<tr>
<td>CGIAR</td>
<td>Consultative Group for International Agricultural Research</td>
</tr>
<tr>
<td>CIPSE</td>
<td>Collaborative Interdisciplinary Publication Skills Education</td>
</tr>
<tr>
<td>EAL</td>
<td>English as an Additional Language</td>
</tr>
<tr>
<td>EAP</td>
<td>English for Academic Purposes</td>
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<tr>
<td>EFL</td>
<td>English as a Foreign Language</td>
</tr>
<tr>
<td>EL1</td>
<td>English as a First Language</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a Second Language</td>
</tr>
<tr>
<td>ESP</td>
<td>English for Specific Purposes</td>
</tr>
<tr>
<td>FLD</td>
<td>Foreign Languages Department (of GUCAS)</td>
</tr>
<tr>
<td>GUCAS</td>
<td>Graduate University of the Chinese Academy of Sciences</td>
</tr>
<tr>
<td>NNEST</td>
<td>Non-Native English-Speaking Teacher (Liu, 2007)</td>
</tr>
<tr>
<td>NEST</td>
<td>Native English-Speaking Teacher (Liu, 2007)</td>
</tr>
<tr>
<td>OD</td>
<td>Other Disciplines</td>
</tr>
<tr>
<td>PWSAIP</td>
<td>Preparing to Write a Science Article for International Publication</td>
</tr>
<tr>
<td>SFL</td>
<td>Systemic Functional Linguistics</td>
</tr>
<tr>
<td>SCI</td>
<td>Science Citation Index (Thompson Reuters)</td>
</tr>
<tr>
<td>TESOL</td>
<td>Teaching English to Speakers of Other Languages</td>
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