



Inspired by Technology, Driven by Pedagogy

A SYSTEMIC APPROACH TO
TECHNOLOGY-BASED SCHOOL
INNOVATIONS



Centre for Educational Research and Innovation



Table of contents

Executive summary	11
<i>Introduction. The need for a systemic approach to technology-based school innovations.</i>	13
The growing relevance of technology-based school innovations	14
Are education systems failing to scale up technology-based innovations?	15
Why a systemic approach to technology-based school innovations can be useful ..	16
The agenda on systemic innovation and how this report contributes to it.	17
References	19
Part I. A changing landscape	
<i>Chapter 1. Web 2.0 and the school of the future, today</i>	23
What is Web 2.0 and why is it of educational importance?	24
Acknowledging the realities of Web 2.0 use in the school of today	26
Popular solutions for overcoming the “problem” of schools in a Web 2.0 world	28
Towards a more reasoned response to Web 2.0 and the school of the future ...	33
Conclusion: Towards a more critical understanding of Web 2.0, schools and schooling	35
References	39
<i>Chapter 2. Can digital learning resources spur innovation?</i>	45
Background, objectives and methodological approach	46
Main findings.	48
Government-initiated innovations	51
Innovations initiated by commercial actors.	52
Bottom-up innovations.	54
Looking at the future of DLR	57
Conclusions and policy implications	59
References	62
<i>Appendix 2.A. Cases studied in the DLR project.</i>	63

Part II. How technology-based innovations are monitored, assessed and scaled up

Chapter 3. Monitoring and assessing the use of ICT in education: The case of Australia.	67
Context	68
Building interest in the educational use of ICT: 1990 to 2000	69
Educational goals and plans for ICT in education	70
Supporting the use of ICT in education	71
Monitoring and evaluation	74
References	84
 Chapter 4. Extending and scaling technology-based innovations through research: The case of Singapore.	 89
Introduction	90
A way forward	92
From research projects to extension and scaling	95
Conclusions	98
References	101

Part III. Promising avenues for research

Chapter 5. The third lever: Innovative teaching and learning research	105
Introduction	106
ITL research background	108
ITL research design	109
Methods, sample and outputs	115
Policy implications	118
References	122
 Chapter 6. Design research on technology-based innovations.	 125
Introduction	126
Curriculum: What's in a name?	127
The vulnerable curriculum spider web	129
Perspectives on substantive choices	131
Development strategies	132
The potential of curriculum design research	134
Features of curriculum design research	135
Emphasis on formative evaluation	137

Generalisation of curricular design research findings	138
Conclusions	140
References	141
Conclusion. Lessons learnt and policy implications	143
Introduction	144
Lessons learnt.	144
Policy principles.	146
The analysis of technology-based innovation in education	148
Policy implications	154
The road ahead.	157
References	159

Figures

Figure 4.1 Framework for translation and extension/scaling innovations	93
Figure 5.1 Educational transformation model.	106
Figure 5.2 Innovative Teaching Practices.	108
Figure 5.3 ITL research logic model	110
Figure 5.4 ITL research timeline – annual milestones for 2010-2012	118
Figure 6.1 Curricular spider web	130
Figure 7.1 Simplified model of coherence between key policy elements.	149

Tables

Table 2.1 The process of innovation related to context, output and stakeholders	49
Table 2.2 Teachers' access, competence, and motivation to use ICT	56
Table 3.1 ICT literacy proficiency level descriptions and percentage distributions, 2005 and 2008	83
Table 4.1 Three stages from research projects to extension and scaling	97
Table 5.1 Global ITL research team	115
Table 5.2 ITL research methods summary	116
Table 6.1 Typology of curriculum representations	128
Table 6.2 Curriculum components	129