How to Evaluate the Effectiveness of a School-Based Intervention

Evaluating the Impact of the Philosophy for Children Programme on Students' Skills



Ourania Maria Ventista

Foreword by Professor Chris Brown

How to Evaluate the Effectiveness of a School-Based Intervention

How to Evaluate the Effectiveness of a School-Based Intervention: Evaluating the Impact of the Philosophy for Children Programme on Students' Skills

BY

OURANIA MARIA VENTISTA



United Kingdom - North America - Japan - India - Malaysia - China

Emerald Publishing Limited Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2021

Copyright © 2021 Ourania Maria Ventista. Published under exclusive license by Emerald Publishing Limited.

Reprints and permissions service

Contact: permissions@emeraldinsight.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-80043-003-7 (Print) ISBN: 978-1-80043-002-0 (Online) ISBN: 978-1-80043-004-4 (Epub)



ISOQAR certified Management System, awarded to Emerald for adherence to Environmental standard ISO 14001:2004.

INVESTOR IN PEOPLE

Certificate Number 1985 ISO 14001

To my parents and to Grigorios

Contents

List of Tables and Flowcharts		xiii
Abbreviations		xv
Foreword		xvii
Chap	ter 1 Introduction	1
1.1.	The Two Themes	1
1.2.	Two Premises	3
	1.2.1. Evidence-based Education	3
	1.2.2. Skills-based Curricula	4
1.3.	The Outline of this Book	6
Chap	ter 2 How to Conduct a Multidimensional	
Prog	ramme Evaluation	9
2.1.	The Purpose of the Evaluation	9
2.2.	Dimensions of Evaluation	10
	2.2.1. Pedagogical Evaluation	11
	2.2.2. Systematic Literature Review	11
	2.2.3. Identify Ways to Fill in the Literature Gaps	11
	2.2.4. Synthesising the Evidence	14
	2.2.5. Offer Recommendations	15
Chap	ter 3 Philosophy for Children: Discussing	
Abou	t Pedagogy	17
3.1.	Introduction	17
3.2.	Philosophy for Children: A School-based	
	Dialogic Intervention	17
3.3.	The Purpose of the Evaluation	18
	3.3.1. A Questioning Mind	19
	3.3.2. Was There a Need for Evaluating Philosophy	
	for Children?	20

3.4.	Pedagogical Evaluation	22
	3.4.1. Identify the Stance and Justify It	22
	3.4.2. Investigate the Programme Rationale	23
	3.4.3. Evaluate the Main Elements of the Programme:	
	Learning and the Role of the Student and the Teacher	25
	3.4.4. Examine Oppositional Views	29
	3.4.5. Search for Inconsistencies and Areas for Improvement	32
	3.4.6. Reach to a Conclusion	33
Chap	oter 4 Systematic Literature Review: Evaluating the	
Avai	lable Evidence	35
4.1.	Conducting a Systematic Literature Review	35
	4.1.1. Specify the Research Question and the	
	Inclusion Criteria	35
	4.1.2. Decide on the Way the Search Will Be	
	Conducted and Identify the Relevant Literature	36
	4.1.3. Evaluate the Quality of the Evidence	37
	4.1.4. Calculating the Impact of the Programme	39
4.2.	Philosophy for Children: A Systematic Literature Review	40
4.3.	The Impact of Philosophy for Children on Students' Skills	43
4.4.	Limitations of the Review	46
4.5.	A Summary of the Findings of the Systematic	
	Literature Review	47
Chap	pter 5 Generating New Evidence	49
5.1.	Conducting an Evaluation Study	50
	5.1.1. Research Design	50
	5.1.2. Pre-test and Post-test	52
	5.1.3. Process Evaluation	52
	5.1.4. Analysing the Data	53
	5.1.5. Recognising and Reporting the Limitations	54
5.2.	The Method of Conducting the Philosophy for	
	Children Study	54
	5.2.1. Intervention Group	55
	5.2.2. Comparison Group	55
5.3.	Response Rate and Missing Data	56
5.4.	Process Evaluation and Analysis	56
5.5.	Ethics	58
5.6.	Limitations of the Research Design	58

Chapter 6 Evaluating the Impact on Thinking Skills:		
Working Definitions		61
6.1.	Defining Critical Thinking	61
	6.1.1. Lipman's Definition of Critical Thinking	61
	6.1.2. Critical Thinking as a Guide to Action	62
	6.1.3. Critical Thinking or Critical Thinker?	64
	6.1.4. Critical Thinking as Problem-solving	66
	6.1.5. Critical Thinking as an Active Process	67
6.2.	Two Important Debates	67
	6.2.1. Is Critical Thinking Value-neutral?	67
	6.2.2. Should Critical Thinking Be Considered a	
	General or a Subject-specific Skill?	69
6.3.	Critical Thinking: Working Definition	71
6.4.	Defining Creativity	73
	6.4.1. Person	74
	6.4.2. Process	75
	6.4.3. Product	76
	6.4.4. Environment	77
6.5.	Debates	77
	6.5.1. Is Creativity Value-neutral?	77
	6.5.2. Is Creativity a Domain-specific Skill?	78
6.6.	Creativity: Working Definition	78
6.7.	The Relationship Between Critical and Creative Thinking	80
6.8.	Can Critical Thinking and Creativity Ever Be Improved?	81
6.9.	Transparency	83
Chap	oter 7 Assessing Students' Thinking Skills	85
7.1.	Introduction	85
7.2.	Critical Thinking Assessments	85
	7.2.1. Halpern Critical Thinking Assessment (2010)	86
	7.2.2. Cornell Critical Thinking Test (2005)	86
	7.2.3. Ennis-Weir Critical Thinking Test Essay (1985)	87
	7.2.4. Test of Appraising Observations (1984)	87
	7.2.5. Watson Glaser Critical Thinking Appraisal (2002)	88
	7.2.6. New Jersey Test of Reasoning Skills (1983)	89
7.3.	Creativity Assessments	89
	7.3.1. Multi-trial Creative Ideation	89
	7.3.2. Latent Semantic Analysis	90
7.4.	Measurement Tools for the Comparative Evaluation Study	90
7.5.	Assessing Students' Creativity	92

7.6.	Marking Students' Creativity	93
	7.6.1. First Activity	94
	7.6.2. Second Activity	96
	7.6.3. Calculating the Overall Creativity Score	96
7.7.	Designing the Critical Thinking Assessment	9 8
	7.7.1. Purpose	99
	7.7.2. Construct	99
	7.7.3. The Form of the Assessment	99
	7.7.4. Why Three Alternatives in the Multiple-choice	
	Questions?	100
	7.7.5. Guidelines for Constructing Good	
	Multiple-choice Items	101
7.8.	Sample Items of Critical Thinking Assessments	102
	7.8.1. Evaluation of an Argument and Credibility of Sources	102
	7.8.2. Deduction	104
- 0	7.8.3. Assumption Identification	105
7.9.	Marking	106
7.10.	Psychometric Properties	107
	7.10.1. Reliability	107
7 1 1	7.10.2. Validity	108
/.11.	Prioting of the Assessments Used in the Philosophy	110
	for Children Evaluation	110
Chap	ter 8 The Findings of the Quasi-experimental Study	111
8.1.	The Impact of the Philosophy for Children	
	Programme on Critical Thinking	111
8.2.	The Impact on Different Critical Thinking Skills	112
8.3.	The Impact of the Philosophy for Children Programme	
	on Creativity	114
8.4.	The Impact on Different Aspects of Creativity	115
8.5.	A Summary of the Findings of the Quasi-experimental Study	117
Chap	ter 9 Secondary Data Analysis: Evaluating the	
Long	-term Impact of the Programme	119
9.1.	Secondary Data Analysis as an Evaluation Method	119
9.2.	Cases	120
9.3.	Missing Data	122
9.4.	Analysis	123
9.5.	Findings of the Secondary Data Analysis	123
	9.5.1. Results: Impact on Attainment	124
	9.5.2. Results: Impact on Disadvantaged	
	Students' Attainment	125
9.6.	Discussion	125

Chapter 10 Combining the Evidence: Deciding About the Programme Effectiveness	127
10.1. Philosophy for Children: Synthesising the Evidence10.2. Should the Programme Be Implemented?	128 133
Chapter 11 Recommendations: When and How Should the Programme Be Implemented in the Classrooms?	135
11.1. Recommendations for Practitioners	135
11.1.1. Thinking Skills	136
11.1.2. Social Skills	136
11.1.3. Self-esteem and Self-confidence	138
11.1.4. Well-being	139
11.1.5. Recommendations on Programme Fidelity	140
11.1.6. Time Allocated11.2. Closing the Gap Between Advantaged and Disadvantaged Students: Recommendations for	140
Policy Makers	141
11.3. Recommendations for Teacher Education	141
11.4. Recommendations for Researchers	142
Chapter 12 Concluding Thoughts	143
12.1. Future Directions	143
12.2. Teaching and Assessing Skills in Schools	144
12.2.1. Critical and Creative Thinking 12.2.2. How Can Schooling Support the	145
Development of Students' Thinking Skills?	146
12.2.3. Assessing Creativity and Critical Thinking	147
12.3. Final Thoughts	148
References	149
Index	163

List of Tables and Flowcharts

Tables

Table 1.	Rating Scale to Evaluate the Trustworthiness of a Study	
	Which Evaluates the Impact of a School-based Programme.	38
Table 2.	Quality of Research Design and Reporting of the Studies	
	Included in the Systematic Literature Review.	41
Table 3.	Quality of Studies in Relation to the Calculated Effect	
	Sizes (P4C Impact).	42
Table 4.	Matrix with Inter-item Correlations for the Pre-test.	97
Table 5.	Matrix with Inter-item Correlations for the Post-test.	97
Table 6.	Simple Version of the Test Blueprint for the Critical	
	Thinking Assessments.	102
Table 7.	Impact of P4C on Critical Thinking.	112
Table 8.	Impact of P4C on Students' Critical Thinking Skills.	113
Table 9.	Impact of P4C on Creativity.	114
Table 10.	Impact of P4C on Students' Creative Thinking Skills.	115
Table 11.	Number of Students Eligible for FSM and Non-FSM	
	Per Group.	122
Table 12.	Frequency of Pupils' Assessment Data in Maintenance	
	Schools.	123
Table 13.	Impact of P4C on Attainment.	124
Table 14.	The Synthesis of Evidence.	129
Table 15.	Weighing the Evidence.	134

Flowcharts

Flowchart 1.	Participant Flow Chart for the Quasi-experimental	
	Study.	57
Flowchart 2.	Participant Flow Chart for the Secondary Data	
	Analysis.	122

Abbreviations

P4C	Philosophy for Children
RCT(s)	Randomised Controlled Trial(s)
TTCT	Torrance Tests of Creative Thinking
НСТА	Halpern Critical Thinking Assessment
CCTT	Cornell Critical Thinking Test
SD	Standard Deviation
NPD	National Pupil Database
FSM	Free School Meals

Foreword

Professor Chris Brown, Durham University School of Education

The world we inhabit, COVID-19 aside, has had very mixed fortunes over the last decade. On the one hand, technology has enabled us to achieve things our ancestors would never have believed possible: redefining the way people communicate, collaborate, shop, travel, read, research, watch films, gather information, book holidays, bank and so much more (Greengard, 2015). Digital photography and social media have enabled us to capture, represent and share the world in previously unimaginable ways, while tools such as 3D printers allow us to make real our designs for anything, from sculptures to bridges, at the touch of a button. In terms of the economy, artificial intelligence (AI) and mass automation have been transformative, with much routine and low skilled work now undertaken by robots or algorithms. This use of AI is set to continue, with most commentators agreeing that AI will eventually take over many of the tasks machines can perform equally or better than humans: everything from processing insurance claims to space exploration. And this is problematic: with pre-COVID estimates indicating that, over the next 20 years, some 47% of jobs in the United States and 54% of those in Europe will be lost to machines (Bregman, 2018; Frey & Osbourne, 2013).

But what separates humans from machines is our ability to engage in creative thinking – which along with its alter ego, critical problem solving – is about constructing more or less novel ideas, objects or even worlds (du Sautoy, 2019). It is 'imaginative activity fashioned so as to produce outcomes that are both original and of value' (National Advisory Committee on Creative and Cultural Education (NACCCE), 1999): in other words, activity designed to produce ideas that are not only innovative, but also fit for purpose (Durham Commission on Creativity and Education, 2019). What is novel, fit for purpose and indeed somehow satisfying, will depend on different domains: in what Victorian designer William Morris describes as the lesser arts (such as interior decoration), there can be a strong emphasis on novelty. In fields such as architecture, fitness for purpose is generally likely to receive more attention. In all cases, however, our acts of creation elevate, expand and transform what it means to be human.

But if it's creativity that is keeping us one step ahead of the machines, then education systems globally now need to be focussed on actively supporting future citizens to be able to collaboratively engage in critical and creative thought. In other words, we need education systems to now arm students with the capacities required to explore, experiment, try and re-work, make and re-make, explore and value difference, overcome obstacles and develop and apply knowledge (Newton & Newton, 2018). But we still need practical suggestions for how to make this happen. Also, to have the confidence that if we are to embrace approaches to creative problem solving, that these will make a concrete and positive difference. With this extraordinary new book, Dr Rania Ventista has managed to meet these twin goals. Taking us on a powerful journey of exploration, not only does Dr Ventista showcase, with some considerable skill, how to evaluate educational interventions effectively; she also illustrates in detail why one intervention in particular – *Philosophy for Children* – matters.

The results are a framework that can and should be used by teachers and school leaders when understanding how to allocate scarce resources. But at the same time, how *Philosophy for Children* can enhance creative problem solving and why educators should be embracing this programme to arm their students with the skills they need to navigate the perils and pitfalls the twenty-first century holds. With this, her first book, Dr Ventista has announced to the world her skills as a scholar and leading thinker in this field. I can't wait for what's to come!

References

Bregman, R. (2018). Utopia for realists and how we can get there. London: Bloomsbury.

- du Sautoy, M. (2019). The creativity code: How AI is learning to write, paint and think. London: 4th estate.
- Durham Commission on Creativity and Education. (2019). Durham Commission on Creativity and Education. Retrieved from https://www.artscouncil.org.uk/sites/ default/files/download-file/Durham_Commission_on_Creativity_04112019_0.pdf. Accessed on March 5, 2021.
- Frey, C., & Osborne, M. (2013). The future of employment: How susceptible are jobs to computerisation. Retrieved from https://www.oxfordmartin.ox.ac.uk/downloads/ academic/The_Future_of_Employment.pdf
- Greengard, S. (2015). The internet of things. Cambridge, MA: MIT Press.
- National Advisory Committee on Creative and Cultural Education (NACCCE) (1999). *All our futures: Creativity and cultural education.* London: DfEE.
- Newton, L., & Newton, D. (2018). *Making purposive thought productive*. Ulm: The International Centre for Innovation in Education.