

Contents

<i>Preface</i>	<i>page xi</i>
Introduction	1
1. Premises	1
2. Aims	2
3. Structure	2
1 Main Features of Scientific Research on Education	8
1.1 A Conference Talk	8
1.2 Science and Research	10
1.3 Jean Piaget (1896–1980): Major Contributions to Developmental Psychology	12
1.4 Lev Vygotsky and Jerome Bruner: Going Beyond Piaget	16
Lev S. Vygotsky (1896–1934)	16
Jerome Bruner (born 1915)	19
1.5 Educational Science and Educational Research	22
Review, Reflect, Practice	25
2 Important Types of Scientific Research on Education	27
2.1 Main Types of Research: Description and Explanation	27
2.2 Theories, Hypotheses, and Models	28
2.3 Research Design and Methodology	32
2.4 Psychometrics	35
2.5 Experiments (RCTs), Quasi-Experiments, and Correlation Studies	37
2.6 A Presentation of John Dewey’s Main Ideas	41
Review, Reflect, Practice	43

3	Main Features of Evidence-based Research on Education	45
3.1	Evidence-based Medicine and Evidence-based Education	45
3.2	A Question of Age	47
3.3	Essential Features of Evidence-based Research	49
3.4	Potential and Pitfalls of Randomized Controlled Trials	51
3.5	The Measurement of Interventions in Teaching and Learning ..	54
3.6	Assumptions about <i>What Works</i>	56
3.7	How to Deal with Results of Evidence-based Research	58
	Review, Reflect, Practice	62
4	Meta-Analyses on Education	63
4.1	Meta-Analyses and Effect Sizes	63
4.2	A Critical Look at Research on Teaching Effectiveness	69
4.3	Thinking without Thinking	71
4.4	A Theory-based Meta-Analysis of Research on Instruction	73
	Review, Reflect, Practice	77
5	A Synthesis of Over 800 Meta-Analyses Relating to Achievement ...	79
5.1	Hattie's Study <i>Visible Learning</i>	80
5.2	"Know Thy Impact"	83
5.3	Shortcomings of <i>Visible Learning</i>	84
5.4	Hattie's Resource Book <i>Visible Learning for Teachers</i>	87
5.5	An <i>International Guide to Student Achievement</i>	90
	Review, Reflect, Practice	92
6	Scaffolding Effective Teaching and Successful Learning	94
6.1	Hattie's Model of Direct Instruction (DI)	95
6.2	Links between Facts and Values	100
6.3	Premises of Effective Teaching	102
6.4	MET – A Model of Effective Teaching and Successful Learning	110
6.5	Research Evidence and Teacher Expertise	113
	Review, Reflect, Practice	117
7	Planning and Starting the Lesson	118
7.1	A Thoughtful Review of Effective Teaching	119
7.2	Planning the Lesson	121
7.3	The Realm of the Smartest	128
7.4	Starting the Lesson	130
	Review, Reflect, Practice	136

8	Presenting Knowledge and Skills – Assertive Questioning	137
8.1	Classroom Management and Classroom Climate	139
8.2	Presenting Knowledge and Skills	143
8.3	The Impact of an Expert Peer	149
8.4	Assertive Questioning and Interactive Dialogue	151
	Review, Reflect, Practice	155
9	Guided and Independent Practice	157
9.1	Summary of the Preceding Steps of the MET	157
9.2	Types of Practice	158
9.3	Planning Guided Practice	164
9.4	Even Good Things Can Be Improved	170
9.5	Independent Practice	170
9.6	All's Well that Ends Well	173
	Review, Reflect, Practice	174
10	Cooperative and Project-based Learning	175
10.1	Cooperative vs. Collaborative Learning	175
10.2	The Message of John Dewey	176
10.3	Basics of Learning in Small Groups	178
10.4	Newer Research into Cooperative Learning	179
10.5	Major Forms of Cooperative Learning	182
10.6	A Joint Venture: <i>Othello</i>	190
10.7	PBL – Project- and Problem-based Learning	191
10.8	Newer Research into Problem-based Learning	195
	Review, Reflect, Practice	196
11	Feedback – Reciprocal and Informative	198
11.1	Newer Research into Feedback	199
11.2	The Feedback Model of Hattie and Timperley	202
11.3	Feedback Given by Teachers to Students	204
11.4	Peer Feedback	208
11.5	Love is Not Always Blind	211
11.6	Feedback Given by Students to Teachers	212
	Review, Reflect, Practice	214
	Concluding Remarks: Standards Need More Evidence	215
	<i>References</i>	221
	<i>Index</i>	231