

Contents

Acknowledgements.....	IX
About the Author.....	XI
Acronyms and Abbreviations.....	XIII
Introduction.....	1
1. Defining the Field.....	5
1.1 ESP and EAP.....	6
1.2 Literature Review.....	10
1.3 Rationale for the Book.....	18
2. Disciplinary Significance Exemplified.....	25
2.1 Institutional and Disciplinary Diversity.....	25
2.2 STEM Disciplines.....	28
3. Constructionist Experiential Learner-Enhanced Teaching.....	33
3.1 The Constructionist Approach.....	33
3.2 Experiential Learning.....	36
3.3 Learner-Enhanced Teaching.....	37
3.4 Instructional Principles in CELET.....	39
3.5 Assignment Output Types.....	50
3.6 The Roles of Teachers.....	53
3.7 The Roles of Learners.....	55
3.8 The Needs of Learners.....	56

4.	Project-Based Discipline-Specific Writing.....	61
4.1	Rationale for Designing CELET Projects.....	62
4.2	Aeronautical Student Research Project Assignment.....	68
4.3	Aeronautical Student Research Project Materials.....	74
4.3.1	Peer-Reviewing Guide.....	74
4.3.2	Project Rating Scale and Assessment Criteria.....	77
4.4	Aeronautical Student Research Project Outcomes.....	81
5.	Components of Technical-Scientific Writing.....	85
5.1	Scientific Writing Module.....	87
5.2	Defining Complex Concepts and Terms.....	100
6.	Language Learning Strategies and Study Skills.....	105
6.1	Vocabulary Learning Strategies.....	106
6.2	Coping with Vocabulary in Technical-Scientific Texts.....	108
6.3	Academic Reading Strategies.....	110
6.3.1	Reading Subject-Specific Monographs and Textbooks.....	112
6.3.2	Reading Subject-Specific Research Articles and Papers.....	114
6.4	Information Processing Skills.....	116
6.4.1	Working with Books.....	116
6.4.2	Working with Research Articles.....	121
6.5	Library Literacy and Digital Literacy.....	124
6.6	Technical English Learning Log.....	126
7.	Constructionist Experiential Learner-Enhanced Tasks.....	131
7.1	News from Industry.....	132
7.2	Shared Insights.....	136
7.3	Triple Talk.....	138
7.4	Student Experts.....	140
7.5	Mathematical Formulae.....	141

7.6 Graphical Translations	145
7.7 Specifying Equipment Requirements.....	146
7.8 Welcoming a Visitor	149
8. Constructionist Experiential Learner-Enhanced Meeting Role Plays	153
8.1 Fuselage Design	155
8.2 Avionics.....	156
8.3 Fleet Planning	157
8.4 Engine Selection	158
8.5 Airport Noise	159
8.6 Airport Revenues.....	160
8.7 Airline Alliances	160
8.8 Airline Economics	161
9. Implementing Constructionist Experiential Learner-Enhanced Teaching.....	163
9.1 Recommendations.....	163
9.2 Aviation Laboratory Inventory	164
10. Conclusions.....	171
Appendices.....	175
A Students' Specimen Project Report Extracts.....	175
B Students' Selected Technical English Learning Logs	180
C Materials for Meetings	198
References.....	233
Subject Index.....	263