Detailed Contents

re	eface	xv
Ack	knowledgments	xxvii
Abo	out the Authors	xxix
P /	ART I: UNDERSTANDING INTERDISCIPLINARY STUDIES	
	Chapter 1 Objectives 2	
	Chapter 1 Learning Outcomes 2	
1.	Interdisciplinary Studies in the Real World	3
	Why Interdisciplinary Studies Matters 3	
	What Is Driving Interdisciplinary Studies Today 3	
	The Complexity of Nature, Society, and Ourselves 4	
	The Natural Sciences 4	
	The Social Sciences 5	
	The Humanities 6	
	The Fine and Performing Arts 6	
	Problems at the Human–Nature Interface 6	
	The Complexity of the Globalized Workplace 7	
	The Need for Systems Thinking and Contextual Thinking 8	
	The Changing Nature of University Research 10	
	Interdisciplinary Borderlands 11	
	The Natural Sciences 12	
	The Social Sciences 13	
	The Humanities 14	
	The Fine and Performing Arts 14	
	The Public World and Its Pressing Needs 14	
	Revolutionary Insights and Generative Technologies 15	
	Successful Intelligence and Integrative Thinking 16	
	A Knowledge Society Needs Both Disciplinarity	
	and Interdisciplinarity 18	
	The Academic Benefits of Pursuing an Interdisciplinary Studies Degree 19	
	Interdisciplinary Studies and Your Career Development 20	
	Critical Thinking Questions 21	
	Applications and Exercises 21	

```
CHAPTER 2 OBJECTIVES 22
   CHAPTER 2 LEARNING OUTCOMES 22
2. Interdisciplinary Studies Defined
                                                                                             23
    Why Definitions Matter 23
    Defining Interdisciplinary Studies 24
          Widely Recognized Definitions of Interdisciplinary Studies 24
          Commonalities Shares by These Definitions 26
                 The Purpose of Interdisciplinary Studies 27
                 The Process of Interdisciplinary Studies 27
                 The Product of Interdisciplinary Studies 28
          An Integrated Definition of Interdisciplinary Studies 28
          The Premise of Interdisciplinary Studies 28
    Differences Between Disciplinarity, Multidisciplinarity, Interdisciplinarity,
       and Transdisciplinarity 29
          The Fable of the Elephant House 29
          Disciplinarity 30
          Multidisciplinarity 31
          Interdisciplinarity 32
                 Two Metaphors 32
                 The Difference Between Multidisciplinarity and
                    Interdisciplinarity Summarized 35
          Transdisciplinarity 35
   Two Conceptions of Interdisciplinarity 36
          Critical Interdisciplinarity 37
          Instrumental Interdisciplinarity 38
   Useful Metaphors of Interdisciplinary Studies 40
          The Metaphor of Boundary Crossing 40
          The Metaphor of Bridge Building 42
          The Metaphor of Bilingualism 43
   Critical Thinking Questions 45
   Applications and Exercises
                                45
   CHAPTER 3 OBJECTIVES 48
   CHAPTER 3 LEARNING OUTCOMES 48
3. The Interdisciplinary Studies "Cognitive Toolkit"
                                                                                             49
   How She Did It 49
   Intellectual Capacities 50
   Values 53
   Traits and Skills 55
   Ways to Apply Your Interdisciplinary "Toolkit"
          Writing an Intellectual Autobiography 58
          Preparing a Portfolio 58
          Performing Service Learning 59
```

	Critical Thinking Questions 60	
	Applications and Exercises 61	
	CHAPTER 4 OBJECTIVES 62	
	CHAPTER 4 LEARNING OUTCOMES 62	
4.	The Rise of the Modern Disciplines and Interdisciplinarity	63
	Why the Past Matters 63	0
	The Rise of the Modern Disciplines 64	
	The Origin of the Concept of Disciplinarity 65	
	A Call for Less Specialization 65	
	The Consolidation of the Disciplines 66	
	The Professionalization of Knowledge 66	
	Concerns About Overspecialization 68	
	The Rise of Interdisciplinarity 68	
	The Quest for an Integrated Educational Experience 68	
	Interdisciplinarity in the 1960s and 1970s 69	
	Interdisciplinarity Acquires Academic Legitimacy in the 1980s and 1990s 72	
	Interdisciplinary Practice in the New Millennium 73	
	Science and Technology 73	
	The Social Sciences 73	
	The New Humanities 74	
	The Growth of Interdisciplinarity 75	
	Interdisciplinarity's Criticism of the Disciplines 77	
	Specialization Can Blind Us to the Broader Context 78	
	Specialization Tends to Produce Tunnel Vision 78	
	Specialization Tends to Discount or Ignore Other Perspectives 79	
	Specialization Can Hinder Creative Breakthroughs 79	
	Specialization Fails to Address Complex Problems Comprehensively 80	
	Specialization Imposes a Past Approach on the Present 80	
	Summary of the Interdisciplinary Criticism of Disciplinary Specialization 81	
	Critical Thinking Questions 81	
	Applications and Exercises 81	
	CHAPTER 5 OBJECTIVES 84	
	Chapter 5 Learning Outcomes 84	
5.	Academic Disciplines	85
	Disciplines and Disciplinarity Defined 85	
	Commonalities Shared by These Definitions 86	
	The Purpose of Disciplines 87	
	The Content of Disciplines 88	
	An Integrated Definition of Discipline and Disciplinarity 89	
	The Epistemic, Social, and Organizational Dimensions of Disciplines 89	
	Disciplines as Epistemic Communities 89	

	Disciplines as Social Communities 90	
	Disciplines as Organizational Units 91	
	A Taxonomy of Disciplines, Fields, and Professions 93	
	The Concept of Disciplinary Perspective 94	
	Perspective Taking in Interdisciplinary Studies 95	
	Types of Disciplinary Perspective 96	
	Disciplinary Perspective Defined 97	
	What Disciplinary Perspective Is Used For 97	
	Disciplinary Perspective in an Overall Sense 98	
	Three Misconceptions About Disciplinary Perspective 101	
	The Defining Elements of a Discipline 102	
	Phenomena 102	
	Epistemology 103	
	Epistemologies of the Natural Sciences 106	
	Epistemologies of the Social Sciences 106	
	Epistemologies of the Humanities 109	
	Assumptions 109	
	Assumptions of the Natural Sciences 110	
	Assumptions of the Social Sciences 110	
	Assumptions of the Humanities 110	
	Concepts 112	
	Theory 112	
	Methods 113	
	The Scientific Method 113	
	Induction and Deduction 114	
	Quantitative and Qualitative Methods 117	
	Data 117	
	Critical Thinking Questions 118	
	Applications and Exercises 118	
	Cura (On-samura 120	
	Chapter 6 Objectives 120 Chapter 6 Learning Outcomes 120	
4		121
О.	The "DNA" of Interdisciplinary Studies Assumptions of Interdisciplinary Studies 122	121
	No. 1: The Complex Reality Beyond the University Makes	
	Interdisciplinarity Necessary 122	
	No. 2: The Disciplines Are Foundational to Interdisciplinarity 123	
	No. 3: The Disciplines Are Inadequate to Address Complexity	
	Comprehensively 123	
	No. 4: Interdisciplinarity Is Able to Integrate Insights From	
	Relevant Disciplines 125	
	No. 5: The Disciplines and the Institutional Policies That Reinforce	
	Them Often Present Major Barriers to Interdisciplinarity 125	

	Theories of Interdisciplinary Studies 125	
	Complexity Theory 126	
	Perspective Taking Theory 127	
	Common Ground Theory 129	
	Integration Theory 131	
	Theories Supportive of Integration 131	
	Interdisciplinary Integration Defined 133	
	Epistemology of Interdisciplinary Studies 134	
	Critical and Instrumental Modes of Interdisciplinarity 134	
	Complexity 134	
	How Interdisciplinary Studies "Sees" 135	
	It Sees Complexity in the Familiar 135	
	It Sees Complex Problems in Context 135	
	It Sees Commonality Amid Difference and Conflict 136	
	It Sees Contingency in Certainty 136	
	Critical Thinking Questions 136	
	Applications and Exercises 137	
PA	ART II: THINKING CRITICALLY ABOUT INTERDISCIPLINARY STUDIES	139
	CHAPTER 7 OBJECTIVES 140	
	Chapter 7 Learning Outcomes 140	
7.	Thinking Critically About Disciplinary Perspectives	141
	What It Means to Think Critically About Disciplinary Perspectives 141	
	Developing a Sophisticated Conception of Knowledge 141	
	Reflect on Your Present Epistemic Position 142	
	Assess Your Tolerance for Multiplicity 142	
	Move Toward Critical Pluralism 143	
	Why Some May Find the Transition to Critical Pluralism Difficult to Make 144	
	How to Move From a Position of Dualism or Relativism to One	
	of Critical Pluralism 145	
	Why Interrogate Disciplinary Perspectives (or Practice Critical Pluralism) 145	
	The Issues of Disciplinary Depth and Interdisciplinary Breadth 145	
	Identifying Disciplines Relevant to the Problem 146	
	Why Interdisciplinarians Interrogate Perspectives 147	
	No. 1: Perspective Taking Is a Key Feature of Interdisciplinarity	
	That Is Necessitated by Complexity 147	
	No. 2: Perspective Taking Is a Prerequisite for Turning Multidisciplinary	
	Work Into Interdisciplinary Work 148	
	No. 3: Perspective Taking Enables Us to See the Relevance of	
	Other Perspectives 149	
	No. 4: Perspective Taking Illumines Our Understanding of	
	the Problem as a Whole 149	

	No. 5: Perspective Taking Reduces the Possibility of Making
	Poor Decisions 150
	No. 6: Perspective Taking Exposes Strengths and Limitations
	of Disciplines 150
	How Interdisciplinarians Interrogate Disciplinary Perspectives 152
	1. What Is the Discipline's Perspective on This Particular Subject? 152
	2. How Does Each Perspective Illumine Our Understanding of the
	Subject as a Whole? 154
	3. What Are the Strengths and Limitations of Each Perspective? 156
	Critical Thinking Scenario 158
	Chapter 8 Objective 160
	Chapter 8 Learning Outcomes 160
8.	Thinking Critically About Disciplinary Insights
	Critical Thinking Attitudes 161
	Awareness of the Limitations of Expertise 161
	Self-Awareness 162
	Intellectual Courage 163
	Respect for Different Viewpoints 163
	Categories of Statements 164
	No. 1: What Are the Author's Conclusions? 164
	No. 2: What Are the Supporting Arguments? 164
	No. 3: What Assumptions Does the Author Make? 165
	No. 4: What Evidence Does the Author Marshal? 165
	Other Types of Statements You Will Encounter 166
	Summary of This Discussion 167
	Critically Analyzing Disciplinary Insights 167
	A Distinctive Approach to Critically Analyzing Disciplinary Insights 167
	How to Find What You Need in Disciplinary Insights 169
	Clarity 169
	Depth and Breadth 169
	Logic 170
	Examples of Applying an Interdisciplinary Approach to Critically
	Analyzing Disciplinary Insights 170
	Example 1: An Analysis of Crime by an Economist 171
	Example 2: A Newspaper Article on Global Warming 172
	Example 3: An Article by a Literary Theorist on a Nineteenth-
	Century Latin American Novelist 173
	Mapping Interdisciplinary Connections 173
	Returning to Example 1: An Analysis of Crime 174
	What Mapping the Scholarly Enterprise Reveals 176
	Critical Thinking Questions 178
	Applications and Exercises 178

	Chapter 9 Learning Outcomes 180	
9.	Thinking Critically About Integration and Its Results	181
	Approaches to Interdisciplinary Integration 181	
	Integrative Approach 1: Contextualization 182	
	History as Integrative Context 182	
	Metaphysics as Integrative Context 182	
	Epistemology as Integrative Context 182	
	Example of a Contextual Integration 183	
	Strengths and Limitations of Approaches to Contextual Integration 185	
	Integrative Approach 2: Conceptualization 185	
	Strengths and Limitations of the Conceptual Approach to Integration 186	
	Integrative Approach 3: Problem Centering 186	
	Strengths and Limitations of the Problem-Centering Approach 187	
	The Broad Model Approach to Integration 187	
	Examples of How the Broad Model Integrates 188	
	Working With Assumptions 189	
	Working With Concepts 190	
	"Partial" and "Full" Integration 191	
	The Result of Integration 191	
	A More Comprehensive Understanding 191	
	Core Premises That Underlie the Concept 192	
	Reflecting on What Was Achieved 193	
	Critical Thinking Scenario 193	
PA	ART III: INTERDISCIPLINARY RESEARCH AND WRITING	195
	THE PERSON OF TH	
	CHAPTER 10 OBJECTIVES 196	
40	Chapter 10 Learning Outcomes 196	107
10.	An Interdisciplinary Research "Road Map"	197
	The Power and Usefulness of Research 198	
	Disciplinary and Interdisciplinary Approaches to Research 198	
	The Broad Model of the Interdisciplinary Research Process 200	
	STEP 1: Define the Problem or State the Research Question 202	
	What Is a Good Research Question? 202	
	How Do You Develop a Good Research Question? 203 The Statement Identifies the Focus of the Study 203	
	The Statement Defines the Scope of the Study 203 The Statement Avoids Three Tendencies 204	
	The Statement Answers the "So What" Question 205 The Broad Model Rubric Applied to STEP 1 206	
	STEP 2: Justify Using an Interdisciplinary Approach 210	
	Commonly Used Justifications 210	

CHAPTER 9 OBJECTIVES 180

	Interprotes or Research Question is Complex 210 Important Insights Into the Problem Are Offered by Two or More Disciplines No Single Discipline Has Been Able to Address the Problem Comprehensively The Problem Is an Unresolved Issue or Unmet Societal Need 212 The Broad Model Rubric Applied to STEP 2 212 Evaluating Practitioner and Student Justifications 213 Applications and Exercises 216 Peer Evaluation Activity 218	211 211
11.	CHAPTER 11 OBJECTIVES 220 CHAPTER 11 LEARNING OUTCOMES 220 Identifying Relevant Disciplines and Gathering Information About the Problem STEP 3: Identify Relevant Disciplines 221 Action No. 1: Connect the Problem as a Whole to Phenomena Typically Studied by Disciplines and Interdisciplinary Fields 222 Problem/Research Question No. 1: What is the cause of teen apathy toward learning? 224 Problem/Research Question No. 2: Should natural gas replace coal as a fuel source for electricity production? 224	221
	Problem/Research Question No. 3: What is the meaning of the growing popularity of action super heroes in media? 224 Action No. 2: "Decompose" the Problem 227 Action No. 3: Externalize the Problem 227 Action No. 4: Reflect on the Problem 229 "Rules of Thumb" to Help You Perform STEP 3 230 STEP 4: Conduct a Literature Search 231 Categorize Publications According to Their Disciplinary Source 231 Focus on Quality Rather Than Quantity 231 Develop a Data Management System 232 The Broad Model Rubric Applied to STEPS 3 and 4 233 Examples 234 Analysis of Examples 242 Critical Thinking Scenario 242 Peer Evaluation and Edit Activity 243	
12.	CHAPTER 12 OBJECTIVES 244 CHAPTER 12 LEARNING OUTCOMES 244 Analyzing Insights and Reflecting on Process STEP 5: Critically Analyze the Disciplinary Insights Into the Problem 246 Strategies for Critically Analyzing Disciplinary Insights 246 Strategy No. 1: Identify the Key Elements of Each Insight 246 Strategy No. 2: Organize This Information 247 Strategy No. 3: Critically Analyze This Information 247 The Broad Model Rubric Applied to STEP 5 250	245

How Is an Interdisciplinary Approach Applicable Beyond the Classroom? The Broad Model Rubric Applied to STEP 6 258 Conclusion 263	258
Conclusion 205	
Appendixes	265
A. Intellectual Autobiography 267	
B. Student Portfolios 277	
C. Service Learning 287	
D. The Broad Model Rubric: Instructor Version 293	
E. Answer Key 297	
Glossary of Key Terms	305
References	311
Author Index	321
Subject Index	325

STEP 6: Reflect on How an Interdisciplinary Approach Has Enlarged Your

How Has the Project Challenged Your *Bias* on the Problem? 256 How Has the Research Process Influenced Your *Perception* of Disciplinary

How Has an Interdisciplinary Approach Enlarged Your Understanding of

Understanding of the Problem 256

Perspective and Expertise? 257

the Problem as a Whole? 257