Contents

1 Summary and Policy Options 1

Summary of Key Findings 1
Introduction 3
Teaching and Technology: The Potential 8
Teachers and Technology: The Barriers 18
Promising Approaches to Technology
Implementation 28
Current Federal Support for Teacher Training and Technology 29
Federal Policy Issues and Options 29
Conclusion 46

2 The Promise of Technology for Teachers 49

Summary of Key Findings Introduction Technology and the Job of the Teacher Using Technology to Enhance Instruction Assisting Teachers with the Daily Tasks of Teaching **71** Fostering Teacher Professional Growth Conclusion

3 Technology Access and Instructional Use in Schools Today 89

Summary of Key Findings 89
Introduction 90
What Technologies Do Schools Own and How Are They Used? 91
State Policies on Access and Use 119
Conclusion: Issues with Policy and Research Implications 121





4 Helping Teachers Learn About and Use Technology Resources 129

Summary of Key Findings **129** Introduction **130** Factors That Influence Technology Use by Teachers **130** Approaches To Enhance Technology Implementation **144** Lessons About Technology Implementation **155**

5 Technology and the Preparation of New Teachers 165

Summary of Key Findings Introduction History and Current Challenges of Preparing Teachers **167** Reform in Teacher Education Technology in Teacher Education Models of Change: Lessons for the Field Conclusions

6 Technology and Teacher Development: The Federal Role 207

Summary of Key Findings 207 Introduction 208 Background on the Federal Role 209 Current Federal Support and Commitment 212 New Opportunities for Federal Leadership 220 Major Technology-Related Training Programs 224 Summary of Federal Emphasis in Technology-Related Training Services and Activities 234 Historical Precedents for Technology-Related Professional Development 239 Lessons from Past and Present Federal Efforts 246 Key Issues for Future Federal Policies for Technology-Related Teacher Development 250 Conclusion 254



APPENDICES

- A Boxes, Figures, and Tables 255
- B Sources of Survey Data for This Report 258
- C Glossary 264
- D Workshop Participants, and Reviewers and Contributors 272
- E Contributing Sites 279
- F Contractor Reports Prepared for This Assessment 281

Index 283



