

TEACHING PROBLEMS

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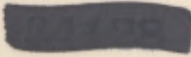
INDUSTRIAL ARTS

By

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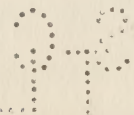



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PREFACE

A BOOK dealing with problems and procedure in teaching is directly helpful only to the extent in which it offers practical assistance in the daily work of the teacher. The purpose of the author in preparing the material contained in this volume has been to deal with specific situations which are met by teachers of manual and industrial arts subjects whether in the shop or classroom or in various other relationships. This is a teacher's book.

The persons who have been kept most constantly in mind may be divided into two classes: (1) teachers on the job who are meeting the daily problems of the school shop, and (2) teachers in training who must obtain as nearly as possible a true picture of the future activities demanded by their chosen profession, and who may be teaching under supervision as a part of their preparation.

The phenomenal expansion of the phase of the public school curriculum pertaining to manipulative work has brought with it also greater responsibility and more intricate problems. Knowledge of possibilities in the use of subject matter and ability to organize teaching material must be considered of equal importance with skill of hand in the doing as prerequisites for efficient teaching of shopwork, and the modern teacher is eager to keep abreast with developments in regard to all of these.

Mainly for the purpose of organization of the material this book has been divided into three main parts:

Part I, dealing with problems of the school shop and the actual teaching, or "how to teach"; Part II, discussing content and underlying conceptions, "what and why"; and Part III, discussing the teacher and his attitudes toward himself, his profession, and his fellow-workers.

A part of the material has appeared in various forms in bulletins and in magazine articles. Acknowledgment is made to the *Industrial Education Magazine* and to the *Sierra Educational News* for permission to use such material and reorganize it for present needs.

Photographs and other illustrations used in this book have appeared in the columns of the *Manual Training Magazine* and the *Industrial Education Magazine*. For the use of these due acknowledgement is made.

EMANUEL E. ERICSON.

CONTENTS

	PAGE
PREFACE	3
ILLUSTRATIONS	11
PART I. PROCEDURE IN TEACHING SHOPWORK	13
CHAPTER I. BEFORE SCHOOL BEGINS	15
1. In anticipation of teaching. 2. Accepting a new job. 3. Arriving on the job. 4. Time for preliminary adjustments. 5. Wasting valuable time. 6. Getting acquainted with conditions. 7. Meeting superior officer. 8. The initial interview. 9. Mistakes to be avoided. 10. Records of previous classes. 11. Preenrolment. 12. Use of inventories. 13. Checking tools and equipment. 14. Ordering needed equipment. 15. Purchasing supplies. 16. Changing existing conditions. 17. The affirmative side. 18. The negative side. 19. Putting equipment in order. 20. The course of study. 21. Special preliminary duties. 22. Filing credentials. 23. Preparing for the first lesson.	
CHAPTER II. THE INSTRUCTOR MEETS THE CLASS	39
24. The first contact. 25. Suggestions for a proper start. 26. Declaring a purpose. 27. Reviewing scope of work. 28. Laying foundation for proper conduct. 29. Starting manipulative work. 30. Gaining time by losing it. 31. The shop as a dumping-ground. 32. A new attitude.	
CHAPTER III. METHODS OF TEACHING AND LESSON PLANNING	56
33. Teaching methods in the shop. 34. The shop demonstration. 35. The class demonstration. 36. The group demonstration. 37. The individual demonstration. 38. The lecture method. 39. The illustrated lecture. 40. The use of instruction-sheets. 41. Advantages of instruction-sheets in shop teaching. 42. Difficulties that may develop when using instruction-sheets. 43. Types of instruction-sheet. 44. Sources of instruction-sheets. 45. Instruction-sheets made by the teacher. 46. Instruction-sheets made by the students. 47. Published instruction-sheets. 48. The project method. 49. The purpose of the project. 50. The plan of the project. 51. The execution of the project. 52. Judging the results of the project. 53. Place for the project method. 54. Lesson planning. 55. The comprehensive lesson plan. 56. The abbreviated lesson plan. 57. Scope of work covered by lesson plan. 58. The weekly report or checking sheet.	

	PAGE
CHAPTER IV. CLASS MANAGEMENT AND SHOP DISCIPLINE	95
59. Relation between discipline and organization. 60. Differences in interpretation of discipline. 61. Self-government and discipline. 62. The boy as a factor in discipline. 63. The teacher as a factor in discipline. 64. Shop conditions affecting class reactions. 65. Good discipline a by-product. 66. Requirements in good discipline. 67. To avoid difficulties. 68. Fourteen points for the disciplinarian.	
CHAPTER V. MAINTAINING EQUIPMENT AND USING SUPPLIES	116
69. Maintaining proper attitude. 70. Caring for hand tools. 71. The central tool-room. 72. The unit tool-room. 73. The student tool-clerk. 74. Methods of checking tools. 75. Objections to the tool-room. 76. Free access to tools. 77. The open tool-panel. 78. The individual tool-kit. 79. Marking tools. 80. The honor system. 81. Limitations of the honor system. 82. Secret of success in keeping tools. 83. Care of machines and common equipment. 84. Repairing equipment. 85. Cleaning the shop. 86. Care and handling of supplies. 87. Students' requisition blanks. 88. The supply clerk. 89. The need of records. 90. A suggested system of records. 91. Charging students for materials. 92. Reducing cost of shopwork. 93. Handling money in the shop. 94. Care of the shop library. 95. How library material may be obtained. 96. Final suggestions.	
CHAPTER VI. THE USE OF TEXT-BOOKS AND OTHER WRITTEN MATERIAL	143
97. Books for shopwork. 98. Text-books in the shop. 99. Project or problem books. 100. Shop manuals. 101. Reference books. 102. Teachers', or professional books. 103. Teachers' attitudes toward books. 104. Why some teachers do not use text-books. 105. Reasons for using text-books. 106. How books may be used. 107. Uses of text-books and manuals.	
CHAPTER VII. SHOP ORGANIZATION AND SCOPE OF SHOP ACTIVITIES	154
108. The Individual Problem. 109. The group method of organization. 110. Free choice of work. 111. Quantity production. 112. Advantages of production work. 113. Disadvantages of production work. 114. Typical organization of a quantity-production job. 115. Class instruction in quantity production. 116. Changing the personnel. 117. The unit production job. 118. How much production work?	

119. Correlated shopwork. 120. The play spirit. 121. Philanthropic and civic projects. 122. The toy sale. 123. Home mechanics (practical mechanics). 124. Scope of work in home mechanics. 125. Home mechanics for girls. 126. The general shop. 127. Two kinds of general shop. 128. Starting the work. 129. School repairs and trouble-shooting. 130. What is exploitation? 131. Educational trouble-shooting. 132. The home workshop. 133. Credit for homework.	
CHAPTER VIII. SHOP ACCIDENTS AND THEIR PREVENTION	192
134. The problem of accidents. 135. Causes of accidents. 136. Preventing accidents. 137. Dull machinery. 138. Motors and switches. 139. Defining working-space. 140. Better teaching and fewer accidents. 141. Overtime work. 142. Experimentation in the shop. 143. Developing proper attitudes. 144. Use of danger-signs. 145. Other factors in accident prevention. 146. Fear as a danger. 147. Safeguarding teacher, pupil, and school.	
CHAPTER IX. RELATED AND OCCUPATIONAL INFORMATION	206
148. Types of related information. 149. Place for giving related information. 150. Related information for its own sake. 151. Occupational information. 152. Methods in studying related or occupational information. 153. The instructor talks. 154. Reading about occupations. 155. Talks by craftsmen. 156. Visiting industries. 157. The use of motion pictures. 158. An outline for studying occupations. 159. A suggested program. 160. Program for special study and occupational information in a printing class.	
CHAPTER X. GRADING SHOPWORK	221
161. Need for definite grading. 162. Causes of difficulty in awarding grades. 163. The grading-system as a teaching device. 164. Characteristics of an efficient grading-system. 165. Time consumed in grading. 166. Points for grading. 167. Evaluating grade-points. 168. Frequency in recording grades. 169. The open grading-system. 170. Range of grade-points. 171. Need for uniformity in grading. 172. Permanent records in grading. 173. Student participation in grading.	
CHAPTER XI. EVALUATING PUPIL PROGRESS AND TEACHING EFFICIENCY	239
174. Measuring pupil progress. 175. Reasons for measuring progress. 176. Need for standards. 177. Means for	

	PAGE
determining achievement. 178. Comparing results with objectives. 179. Comparison with work of others. 180. The "progress-chart" in mechanical work. 181. Written test. 182. Objective tests. 183. True-false test. 184. Multiple-choice test. 185. Completion test. 186. Matching test. 187. Comprehension test. 188. Procedure-arrangement test. 189. Available objective tests in shopwork. 190. General intelligence versus mechanical aptitude. 191. Discovering mechanical aptitude. 192. Measuring teaching efficiency. 193. Teachers' self-rating scheme.	
CHAPTER XII. THE CLOSING DAYS	268
194. Be steadfast to the end. 195. Danger factors. 196. The annual stampede. 197. Jobs for the unemployed. 198. Cleaning and polishing tools. 199. Reconditioning tools. 200. Attention to power machinery. 201. Order in stock-rooms. 202. The finishing-room. 203. Taking inventories. 204. Advantages of an orderly finish. 205. Reports. 206. Recommendations for development. 207. Completing records. 208. Requisitioning equipment and supplies. 209. Thinking ahead.	
PART II. THE WHAT IN TEACHING SHOPWORK . . .	283
CHAPTER XIII. AIMS AND OBJECTIVES	285
210. Justifying activity in point of objectives. 211. Objectives determined by pupil's age. 212. Aims in the elementary school. 213. Aims in the junior high school. 214. General education as an objective. 215. Accepted aims for junior high school. 216. Some aims purposely omitted. 217. In the senior high school. 218. The cardinal principles.	
CHAPTER XIV. TYPES OF SHOPS IN USE	303
219. The one-activity shop. 220. The one-major-activity shop. 221. The unit-shop organization. 222. The comprehensive general shop. 223. The limited general shop. 224. Bases for planning shops and equipment.	
CHAPTER XV. SUBJECT MATTER IN INDUSTRIAL ARTS . . .	311
225. Reasons for selecting shop subjects. 226. Bases for adopting subjects. 227. General source for subject matter in industrial education. 228. Analysis the basis for selection. 229. Procedure in selecting subject matter. 230. In the elementary school. 231. Decline of formal work. 232. A	

	PAGE
typical project for elementary schools. 233. In the junior high school. 234. Subject matter in the senior high school. 235. In the rural school. 236. Testing the value of subject matter.	
CHAPTER XVI. COURSES OF STUDY	332
237. Function of the course of study. 238. The subject matter for the course. 239. Who should make the course? 240. Bases for organizing the course. 241. Sequence of manipulative processes. 242. Sequence of articles or "models" to be made. 243. Order of facts to be learned. 244. Interest of students. 245. Immediate needs. 246. Frequency in future usefulness. 247. Types of courses. 248. The abridged course. 249. The detailed course. 250. Job analysis applied to course of study.	
CHAPTER XVII. BASES FOR SELECTING TOOLS AND EQUIPMENT	344
251. Care in buying equipment. 252. Surveying school conditions. 253. Satisfying objectives. 254. Investigate modern tools. 255. Common usefulness of equipment. 256. Student use or instructor's use? 257. The cost factor. 258. Frequency of use. 259. Space available. 260. Order in which to purchase. 261. Money available. 262. Portable versus stationary machines. 263. Guides for selecting equipment. 264. Suggestions to teachers. 265. Placing equipment.	
PART III. THE SHOP TEACHER AS A PART OF THE SCHOOL AND THE PROFESSION	359
CHAPTER XVIII. EXTRA-CURRICULAR RESPONSIBILITIES . . .	361
266. A many-sided occupation. 267. Sponsorships. 268. The student morale. 269. Special student activities. 270. The teacher as a counselor. 271. Exhibits. 272. Objections to exhibits. 273. Advantages of exhibits. 274. To be a faculty member. 275. Teachers' meetings. 276. Watch bulletin-boards. 277. Personal appearance. 278. Civic and social relationships. 279. Contacts with business and industry. 280. Out of the basement.	
CHAPTER XIX. USE OF PUBLICITY IN PROMOTING SHOPWORK	374
281. It pays to advertise. 282. Why publicity is not used. 283. The local newspaper. 284. The school paper. 285. Special bulletins. 286. Contests as means for publicity. 287. Civic projects. 288. Exhibits as a publicity feature.	

	PAGE
289. The open night. 290. Signs and sign-boards. 291. For the superintendent and principal. 292. A publicity schedule.	
CHAPTER XX. THE TEACHER AND HIS PROFESSION	382
293. Learning to teach. 294. Cardinal qualifications for teaching shopwork. 295. Growing with the job. 296. The upgrading process. 297. Misunderstood motives. 298. Advantages of upgrading. 299. The teacher's library. 300. Conventions and institutes. 301. Benefits in conventions. 302. When summer comes. 303. Strengthening weak points. 304. Looking for the new. 305. Contributing ideas.	
CHAPTER XXI. STAYING OR LEAVING?	395
306. The migratory nature of teaching. 307. Unsatisfactory service. 308. Lack of agreement with superior. 309. Ambition. 310. Better salaries. 311. Outgrown possibilities for progress. 312. Petty grievances. 313. The moving habit. 314. The high cost of moving. 315. Why teachers lose jobs. 316. The cost of turnover. 317. When moving is legitimate. 318. Advantages of small school system. 319. Advantages of the larger system. 320. Release from contract. 321. Oral promises versus contracts. 322. Stabilizing the profession.	
CHAPTER XXII. SOURCES AND TRAINING OF INDUSTRIAL-ARTS TEACHERS	407
323. What background is superior? 324. The teachers-college product. 325. Strong characteristics of the trained teacher. 326. Weaknesses of the college-trained teacher. 327. The engineering-college graduate. 328. Strong qualities of the engineer. 329. Weaknesses of the engineer as an instructor. 330. The tradesman as an industrial-arts teacher. 331. Strong qualities of the tradesman. 332. Weaknesses of the tradesman teacher. 333. The efficient shop teachers.	
CHAPTER XXIII. SCOPE OF SERVICE AND FUTURE OPPORTUNITIES	420
334. New demands upon the shop teacher. 335. A comparison with industry. 336. Special rewards in teaching. 337. The future outlook. 338. As a teacher of shopwork. 339. The field of supervision and administration. 340. Two types of supervision. 341. The coordinator. 342. Occupational study and guidance. 343. In conclusion.	
INDEX	429

LIST OF ILLUSTRATIONS

	PAGE
FIG. 1. A Sample Job-Sheet, Page 1	72
FIG. 2. A Sample Job-Sheet, Page 2	73
FIG. 3. Building a Play-House as a Carpentry Project	80
FIG. 4. A Well-Organized Tool-Room is an Important Factor in Teaching Shopwork	122
FIG. 5. Form for Student's Requisition Blank	131
FIG. 6. Form for Record of Purchase of Supplies	134
FIG. 7. Form for Permanent Record or Inventory of Equipment	135
FIG. 8. A Few Minutes of Intensive Reading May Occupy a Portion of the Shop Period	148
FIG. 9. A Collection of Toys Like This Will Stimulate the Christmas Spirit	172
FIG. 10. A Home Workshop	186
FIG. 11. A Form for Use in Receiving Reports on Home Work Done by Students	189
FIG. 12. A Form Illustrating One Method of Grading Students' Work	228
FIG. 13. This Form Provides for Grading Students' Work Daily with a Minimum Expense of Time	229
FIG. 14. Graph Showing the Distribution of 200 Men According to Height	233
FIG. 15. Graph Showing the "Curve of Normal Distribution"	234
FIG. 16. A Progress-Chart for a Class in Woodwork	243
FIG. 17. Graph Showing Relationship Between I Q's and Shop Scores for 25 Students	256
FIG. 18. Graph Showing Relationship Between I Q's and Shop Grades for 150 Students	258

	PAGE
FIG. 19. Inventory and Requisition Form for Shop Supplies	274
FIG. 20. Inventory and Requisition Form for Shop Equipment	277
FIG. 21. A Typical Electrical Shop	304
FIG. 22. A Home-Mechanics Shop in a Small High School	306
FIG. 23. Suggested Floor-Plan for a Comprehensive General Shop	308
FIG. 24. Suggested Floor-Plan for a General Metal-Shop in a Junior High School	309
FIG. 25. Form of Chart for Use in Testing the Value of Subject-Matter	330
FIG. 26. Students of Electricity at Work in an Exhibit Booth	366
FIG. 27. Students of Printing at Work in an Exhibit Booth	368
FIG. 28. Signboard Made in the Carpentry Class to Advertise a Trade School	378
FIG. 29. Float Representing a High School in a School Pageant	389

PART I
PROCEDURE IN TEACHING SHOPWORK

CHAPTER III

METHODS OF TEACHING AND LESSON PLANNING

33. Teaching Methods in the Shop. Teaching methods for shopwork as here conceived and discussed comprise the various types and procedure engaged in or promoted by the instructor for the purpose of making the desired content or subject matter interesting and acceptable to the learner.

With this idea in mind, such topics as exercises versus useful articles, free choice of problems, group organization of subject matter, quantity production schemes, and the like, are thought of as devices and methods in shop organization rather than methods of teaching; since it seems evident that any of these types of approaches to the subject can be made by employing one of several available teaching methods.

The fundamental methods in use by teachers at the present time which receive special consideration in this Chapter are the following:

1. The Demonstration Method.
2. The Lecture Method.
3. The Use of Instruction Sheets.
4. The "Project" Method.

None of these methods can or should be used exclusively with students of all ages. The skilful teacher will use them in such combination as best fits the conditions under which the teaching is done.

34. The Shop Demonstration. From the earliest time that instruction in the manual arts was introduced as a school subject the demonstration has stood

out as the most definite and valuable means of instruction. It continues to be so at the present day wherever it is desirable to have students learn exact and acceptable methods of performance in mechanical operations. Its success is based upon imitation as a factor in learning, and it is a well known fact that imitation is a natural instinct which figures greatly in all types of education.

The shop demonstration as performed by the skilful teacher is unfailing in developing and maintaining interest among students for various reasons: (1) there is an appeal to the sense of vision; (2) skilful performance in hand manipulations always attracts attention; (3) students see immediate progress as result of effort; and (4) a desire is aroused to emulate the work of the teacher.

The demonstration, then, is probably the teacher's greatest asset in arriving at certain fundamental skills and practices, and in the shortest possible time. It may well be said without fear of contradiction that for the average school shop the quality and quantity of work produced will depend greatly upon the instructor's use of the demonstration.

In this connection there should be no need to emphasize the fact that the outstanding mark of teaching ability is effectiveness in giving demonstrations. And ability to perform in industry, or expert craftsmanship, is not a sufficient guarantee of ability to demonstrate to others, necessary and desirable as such craft skill is as a prerequisite. Ability to demonstrate, however, comes only from analysis of the problem, and organization of teaching procedure, plus an intimate

tor needs to revise his method of procedure. If 90 per cent can go on with the work without special difficulty, the teacher may be proud of his job, and hasten to assist the remaining ten per cent.

Acquaintance with the students and their capacities should make one more able to give class demonstrations adjusted to the needs of the entire class as the school year progresses, and thus eliminate greatly the need for "patchwork" in the follow-up. But since many other factors, some of which have already been mentioned, will come in to diversify the work of the class as the time goes on, the time spent with individual students and their problems will probably increase.

38. The Lecture Method. The lecture or "talk method" is essentially the method of teaching outside of manipulative work. In the shop it is also useful, provided its place and function are known and appreciated. Facts to be learned in connection with the work performed are often as important as the tool processes involved in the performance. To tell facts to students may be the shortest way to their acquisition of such facts. And, while the argument has been advanced that this is not teaching, it at least offers opportunities for learning useful and essential content, at a minimum expense of time. In many cases knowledge may be just as effectively assimilated as if students were to go to much trouble in finding it for themselves in reference material and other sources. Because a student takes much time to obtain certain facts is no guarantee of the increased value of such facts.

39. The Illustrated Lecture. Whenever possible, the lecture or class talk should be illustrated in some

way. This will increase the interest in the materials presented, and give a chance for impression through various senses, as sight, hearing, touch, smell. Wall-charts, blue-prints, samples of materials of various kinds, and motion pictures offer suggestions for illustrative materials. The illustrated lecture is particularly valuable in dealing with facts to be learned, and material related to the operations performed.

This type of presentation of subject matter must not be confused with the demonstration nor substituted for it. Some teachers are in the habit of telling how to do things instead of actually showing how, using tools only to illustrate their lecture, and failing to carry out the actual performance of the demonstration in detail. Of course, any good demonstration involves oral explanations, but these come only as means for strengthening the manipulative processes.

A good policy to establish, particularly with students of junior high school ages, is to keep lecturing of all types down to a minimum, and to confine oral presentations to very brief periods. Instructors who naturally like to talk need to watch themselves at this point. Unless there is a definite need felt by the students, or unless such need can be established at the outset, the instructor has no right to give vent to his constant "desire to talk."

40. The Use of Instruction-Sheets. Instruction-sheets of various kinds may now be considered one of the standard means of employed in shop teaching. The changes in shop organization and layouts that have brought about a variety of mechanical activities in schools in place of the old program of one or two such