DOCUMENT RESUME

ED 315 691 CG 022 270

AUTHOR Gysbers, Norman C.; And Others
TITLE A Changing World of Work.
INSTITUTION American School Counselor Association. Alexandria, VA.; ERIC Clearinghouse on Counseling and Personnel Services, Ann Arbor, Mich.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE 90
CONTRACT RI88062011
NOTE 46p.; In: Elementary School Counseling in a Changing World, see CG 022 263.
AVAILABLE FROM ERIC/CAPS, 2108 School of Education, University of Michigan, Ann Arbor, MI 48109-1259.
PUB TYPE Information Analyses - ERIC Information Analysis Products (071)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Career Awareness; Change; Counseling Techniques; Counselor Role; Elementary Education; *Elementary Schools; Employment; *School Counseling; *School Counselors

ABSTRACT

This seventh chapter in "Elementary School Counseling in a Changing World" discusses theoretical and practical issues related to career development and offers suggestions to help elementary school counselors promote students' career exploration. Four journal articles are included. "Major Trends in Career Development Theory and Practice" by Norman Gysbers looks at predominant trends that may have substantial impact on the future of career development theory and practice. Four major trends are traced and summarized and then brought together to create a clearer picture of the future of career development. "The Impact of Technology on Occupational Change: Implications for Career Guidance" by Kenneth Hoyt presents basic facts on a number of aspects of the impact of technology on occupational change, and looks at this situation in the United States. "Using Books to Enhance Career Awareness" by Nancy Staley and John Mangieri provides a bibliography of suggested readings to enhance career awareness, which should be useful to teachers and counselors. "The Art of Career Exploration: Occupational Sex-Role Stereotyping Among Elementary School Children" by Mary Bowe Hageman and Samuel Gladding describes a study conducted to obtain further information in the field of occupational sex-role stereotyping among elementary school children. The chapter concludes with a set of issues for elementary school counselors to consider about a changing world of work. (NB)

CHAPTER 7

A CHANGING WORLD OF WORK

As we approach the close of the 20th century, the world in which we live and work continues to change and become more complex. Vast and far-reaching changes are occurring in the nature and structure of the social and economic systems in which people live, and the industrial and occupational structures where they work. Individuals' values and beliefs about themselves and their society are changing as are the ways they look at and understand their own growth and development. This includes their career development as well. More people are looking for meaning in their lives, particularly as they think about the work they do, their situation as a family member and as an individual, their involvement in their community, their role in education and training, and their involvement in leisure activities.

This observation by Norm Gysbers begins Chapter 7 and suggests that elementary school counselors face major challenges as they work with parents and teachers to introduce children to an ever changing world of work. Ken Hoyt reinforces this idea in his stimulating article, "The Impact of Technology on Occupational Change: Implications for Career Guidance." The emphasis on career education, however, seems to have diminished from its peak in the 1970s when Sid Marland and the United States Office of Education demanded high visibility for career education programs in schools. This decline in career education at the elementary school level is unfortunate because economic, political, and social changes have brought women and minorities into the work force in large numbers and have altered how children must be prepared to enter the world of work.

This chapter discusses theoretical and practical issues related to career development and offers suggestions to help elementary school counselors

promote students' career exploration. In addition to the issues covered by Gysbers and Hoyt, Chapter 7 presents ideas for practice on such topics as:

1. Using books to enhance career awareness
2. Examining sex-role stereotyping through career exploration
3. Using role models to expand occupational aspirations

Each of the articles in this chapter challenges elementary school counselors to examine creative ways of preparing children for the world of work in the 21st century.

Major Trends in Career Development Theory and Practice

Norman C. Gysbers

As we approach the close of the 20th century, the world in which we live and work continues to change and become more complex. Vast and far reaching changes are occurring in the nature and structure of the social and economic systems in which people live, and the industrial and occupational structures where they work. Individuals' values and beliefs about themselves and their society are changing as are the ways they look at and understand their own growth and development. This includes their career development as well. More people are looking for meaning in their lives, particularly as they think about the work they do, their situation as a family member and as an individual, their involvement in their community, their role in education and training, and their involvemc in leisure activities.

*Designing Careers: Counseling to Enhance Education, Work, and Leisure** is, in part, a chronology of these changes as they affect the career development of individuals, but it is much more than a chronology of people, places, and events in the evolution of career development theory and practice. *Designing Careers* helps us to understand these changes and hence career development theory and practice, in the context of the times in which we live and work from sociological, psychological, and economic perspectives. *Designing Careers* is a source of ideas, techniques, and resources to help us work more effectively with individuals and their career development needs, concerns, and plans. Finally, *Designing Careers* is a book that is grounded in the present but looks into the future and what is likely to be in store for career development practitioners and their clientele.

To accomplish these tasks, *Designing Careers* is composed of an introduction and 23 chapters organized into four major parts: (a) The World of Work Today: Personal, Social, and Economic Perspectives; (b) The Knowledge Base of Career Development; (c) Facilitating Career Development: Practices and Programs; and (d) Responding to Emerging Views of Education, Work, and Leisure.

---

*This article is adapted from the book *Designing Careers: Counseling to Enhance Education, Work, and Leisure* published by Jossey-Bass in 1984 for the National Vocational Guidance Association.

It is not the intent of this article to summarize what is in the book. It is, instead, the intent of this article to bring into sharp focus four predominant trends that may have substantial impact on the future of career development theory and practice from among the many trends identified by the chapter authors in this book. What are these predominant trends? They are as follows:

1. The meanings given to career and career development continue to evolve from simply new words for vocation (occupation) and vocational development (occupation development) to words that describe the human career in terms of life roles, life settings, and life events that develop over the life span. Super in Chapter 1, Jepsen in Chapter 5, McDaniels in Chapter 21, and Miller-Tiedeman and Tiedeman in Chapter 22 described and commented on this evolution of meanings.
2. Substantial changes have taken place and will continue to occur in the economic, occupational, industrial, and social environments and structures in which the human career develops and interacts, and in which career guidance and counseling takes place. Goldstein (Chapter 2), Herr (Chapter 3), Borow (Chapter 6), Dawis (Chapter 10), and Striner (Chapter 19) provided indepth analyses of these changes from a variety of perspectives.
3. The number, diversity, and quality of career developmental programs, tools, and techniques continue to increase almost in geometric progression. Crites (Chapter 9), Kinnier and Krumboltz (Chapter 11), Walz and Benjamin (Chapter 12), Harris-Bowlsbey (Chapter 13), and Miller (Chapter 16) discussed these developments in detail.
4. The populations served by career development programming, and the settings in which career development programs and services take place, have increased greatly and will continue to do so. Lotto in Chapter 4, Stumpf in Chapter 7, Hansen in Chapter 8, Miles in Chapter 14, Thomas and Berven in Chapter 15, Miller in Chapter 16, Johnson and Figler in Chapter 17, Knowdell in Chapter 18, and Sinick in Chapter 20 documented and described this major trend in the field.

To carry out the intent of this article, the first section traces and summarizes each of these four trends. The last section of the article brings these trends together and looks briefly at the future of career development.

Evolving Meanings of Career and Career Development

Modern theories of career development began appearing in literature during the 1950s. At that time the occupational choice focus of the first 40 years of career

development began to give way to a broader, more comprehensive view of individuals and their occupational development over the life span. Occupational choice was beginning to be seen as a developmental process. It was during this time that the term *vocational development* became popular as a way of describing the broadening view of occupational choice.

By the 1960s, knowledge about occupational choice as a developmental process had increased dramatically. At the same time, the terms *career* and *career development* became popular. Today, many people prefer them to the terms vocation and vocational development. This expanded view of career and career development was more useful than the earlier view of career development as occupational choice because it broke the time barrier that previously restricted the vision of career development to only a cross-sectional view of an individual's life. As Super and Bohn (1970, p. 15) pointed out, "It is well . . . to keep clear the distinction between occupation (what one does) and career (the course pursued over a period of time)." It was also more useful because it made it possible for career development to become the basis for organizing and interpreting the impact that the role of work has on individuals over their lifetimes.

In the 1970s, the definitions of career and career development used by some writers became broader and more encompassing. Jones, Hamilton, Ganschow, Helliwell, and Wolff (1972) defined career as encompassing a variety of possible patterns of personal choice related to an individual's total lifestyle, including occupation, education, personal and social behaviors, learning how to learn, social responsibility, and leisure time activities.

Gysbers and Moore (1975; 1981) proposed the concept of life career development in an effort to expand and extend career development from an occupational perspective to a life perspective in which occupation (and work) has place and meaning. They defined life career development as self-development over the life span through the integration of the roles, settings, and events of a person's life. The word *life* in the definition means that the focus is on the total person—the human career. The word *career* identifies and relates the roles in which individuals are involved (worker, learner, family, citizen); the settings where individuals find themselves (home, school, community, workplace); and the events that occur over their lifetimes (entry job, marriage, divorce, retirement). Finally, the word *development* is used to indicate that the individuals are always in the process of becoming. When used in sequence, the words *life career development* bring these separate meanings together, but at the same time a greater meaning emerges. Life career development describes unique people with their own lifestyles.

Similarly, Super (1975; 1981) proposed a definition of career that involved the interaction of various life roles over the life span. He called it the life career

rainbow. "Super emphasizes that people, as they mature, normally play a variety of roles in many different theatres. . . . For Super, the term *career* refers to the combination and sequence of all the roles you may play during your lifetime and the pattern in which they fit together at any point in time" (Harris-Bowlsbey, Spivack, & Lisansky, 1982, p. 17–18).

Recently, the National Vocational Guidance Association (NVGA) updated its definition of career development to reflect these changes. Although the concept of life roles is not explicit, it is implicit in the new definition. The 1982 NVGA definition is as follows: Career development is "the total constellation of psychological, sociological, educational, physical, economic, and chance factors that combine to shape the career of any given individual over the life span" (Sears, 1982, p. 139).

Wolfe and Kolb (1980, p. 1–2) summed up the life view of career development when they defined career development as involving one's whole life.

> Career development involves one's whole life, not just occupation. As such, it concerns the whole person, needs and wants, capacities and potentials, excitements and anxieties, insights and blindspots, warts and all. More than that, it concerns him or her in the ever-changing contexts of his or her life. The environmental pressures and constraints, the bonds that tie him or her to significant others, responsibilities to children and aging parents, the total structure of one's circumstances are also factors that must be understood and reckoned with. In these terms, career development and personal development converge. Self and circumstances—evolving, changing, unfolding in mutual interaction—constitute the focus and the drama of career development.

Changing Environments and Structures

The nature, shape, and substance of career development and the practices of career guidance and counseling are not separate and independent from the economic, occupational, industrial, and social environments and structures in which they take place. Our understanding of career development and how we practice is closely related to what happens in these environments and the changes that have occurred and will occur in the future. Not only are the changes within environments important, but so are the interactive effects that occur across environments as a result of change.

What are some of these changes? Since 1900, our country has undergone substantial changes in its economic, occupational, industrial, and social environments and structures. Occupational and industrial specialization have increased dramatically and apparently will continue to do so in the future.

Social structures and social values have changed and will continue to change, by becoming more complex and diverse. New and emerging social and political groups are challenging established groups by demanding equality. People are on the move from rural to urban areas and back again, and from one region of the country to another, in search of psychological, social, and economic security.

Today, changes such as these and others that have been well documented by previous chapter authors, continue at a rapid pace. Here are just a few specifics to sum up what has been stated previously:

1. We have moved from a goods producing economic base to a service-information economy. This does not mean that goods producing industries are unimportant and that people will no longer find employment in them. What it does mean, however, is that more and more workers will be employed in service-information industries. Two years ago the number one occupation in the United States, which had long been Laborer, became Clerk. The number of workers in agriculture fell to a low of 3.5 percent. Information or knowledge occupations, including all persons who process and disseminate information increased from 17 percent in 1950 to 60 percent today. (National Association of Manufacturers, 1982).
2. We are continuing to experience rapid acceleration in the use of high technology and automation in the work place due to the continued introduction of new and more highly sophisticated automated techniques, machinery, and computers of all types and sizes.
3. We live in a world economy closely linked by fiscal policies, energy resources, multinational corporations, competition for raw materials, and the sales of goods and services.
4. We continue to experience population shifts that find people moving from the north and northeast to the south and southeast.
5. We continue to see changing demographic patterns in our labor force. "After more than two decades of growth, the United States population in the 16–24 age range peaked at 36 million in 1980. The Department of Labor predicts a 10 percent decrease in this age group by 1985 and another 7% drop, to 30 million, by 1990. As the number of younger workers declines, there will be a demographic 'bulge' in the prime-age (24–44) work force from 39 million in 1975 to an estimated 60.5 million in 1990. Many experts also believe there will be a shift away from early retirement" (National Association of Manufacturers, 1982, p. 2).

What about tomorrow? What will likely happen in the future? Experts who study change tell us that the pace of change in the future will be even more rapid. Governor Pierre S. du Pont IV, who chaired a recent ad hoc National

Committee on Displaced Workers, concluded that "it is entirely possible that the changes recorded in the past 80 years, will be matched and surpassed by the changes in the final 20 years of this century" (Ehrbar, 1983, p. 107).

One note of caution is needed, however, as projections are made about what the future will look like. In the same issue of *Fortune* magazine in which the article by Ehrbar appeared, the following statement also appeared: "The far-off will not be that far-out." Although changes will occur, and with increasing rapidity, the familiar lines of our economic, occupational, industrial, and social environments and structures, as we know them today, in all probability, will still be visible.

Increasing Numbers, Diversity, and Quality of Programs, Tools, and Techniques

A number of decennial volume chapter authors documented the rapid expansion in and the almost bewildering diversity of career development programs, tools, and techniques available today to help individuals with their career development. These same authors project that this expansion will continue into the foreseeable future. Also, as previous chapters make clear, these programs, tools, and techniques are better organized, are more frequently theory-based, and are used more systematically than ever before. It also projected that these emphases will continue into the future.

Let us look more specifically at what is involved in this major trend. The theory and research base of counseling psychology has been expanded and extended substantially during the past 20 years but particularly during the past 10 years. The growth in the theory and research base for career psychology has been equally dramatic during this same time period. One result has been an interesting convergence of ideas in counseling and career psychology concerning human growth and development, and the interventions to facilitate it. This convergence of ideas has stimulated a new array of career guidance and counseling programs, tools, and techniques. These new programs, tools, and techniques are emerging from this convergence through the application of marriage and family counseling concepts to career counseling (Zingaro, 1983) and cognitive-behavioral psychology (Keller, Biggs, & Gysbers, 1982). We also are seeing it in the application of contemporary thinking about personal styles (Pinkney, 1983), learning styles (Wolfe & Kolb, 1980), and hemispheric functioning to career guidance and counseling.

A recent publication by the National Vocational Guidance Association also documents this trend from another perspective. The publication is titled "A Counselor's Guide to Vocational Guidance Instruments" edited by Kapes and

Mastie (1982). In it are reviews of career guidance and counseling instruments. A number of them have been around for a long time. Some have been developed more recently, and they represent new directions for the field. There are new instruments in the traditional category of interest inventories but the new directions for the field are in the category of work values, career development and maturity, and card sorts.

There also are encouraging signs that career and labor market information, important tools in career guidance and counseling, are continuing to improve. Not only have the nature and content of career and labor markets been improving, but so have the relationships between the producers and users of career and labor market information (Drier & Pfister, 1980). A major step was taken in 1976 to facilitate this trend through the establishment of the National Occupational Information Coordinating Committee (NOICC) and the corresponding State Occupational Information Coordinating Committees (SOICCs) by the Vocational Education Amendments of 1976. Their charge was to improve communication and coordination between federal and state agencies that produce career and labor market information and those agencies and individuals that use it. NOICC and the SOICCs also are charged to develop and implement an occupational information system to meet the common occupational information needs of vocational education and employment and training programs at the national, state, and local levels. Finally, NOICC and SOICCs are mandated to give special attention to the labor market information needs of youth, including such activities as encouraging and assisting in the development of local job outlook data and counseling programs for youth who are in correctional institutions and those who are out of high school.

Recently, NOICC joined forces with other government agencies, including the Department of Labor and the Department of Defense, to upgrade the career and labor market information knowledge of counselors. The effort is called the Improve Career Decision Making project. It is designed to assist counselors in training as well as those on-the-job to become knowledgeable about career and labor market information concepts and sources and become skillful in their use.

In addition, there are encouraging signs that delivery systems for career and labor market information using state-of-the-art technology are being put into place with increasing frequency across the country. In 1979, NOICC assumed responsibility for assisting states to develop and implement career information delivery systems. Commercial vendors, publishers, and others also have become very active in making such systems available for use in a wide array of settings with an equally wide array of people.

Finally, it is clear that career guidance and counseling programs, tools, and techniques are more frequently theory-based. Matthews (1975) pointed out several years ago that there were some missing links between materials and

people; and that one of the missing links was the lack of an organizing philosophy. "In essence," she stated, "we are now confronted with random materials in search of a philosophy" (Matthews, 1975, p. 652). According to a number of authors of decennial volume chapters, this point has been recognized; now, theorists, researchers, and practitioners are devoting more time and energy organizing and using career guidance and counseling programs, tools, and techniques in comprehensive, systematic ways that are theory-based.

Expanding Populations and Settings

At the turn of the century, career guidance and counseling (then called vocational guidance) was designed to help young people in the transition from school to work; to make occupational choices in line with their understandings about themselves and the work world through a process called true reasoning (Parsons, 1909). Today, young people are still the recipients of career guidance and counseling and will be in the future. Additional populations to be served by career guidance and counseling have been added over the years and have included such groups as individuals with handicapping conditions, college students, the disadvantaged, and unemployed individuals. As the world in which we live and work continues to become more complex, the needs of people in these populations for career guidance and counseling will increase, not decrease.

As new concepts about career and career development began to appear and evolve, it became obvious that people of all ages and circumstances had career development needs and concerns, and that they and society could and would benefit from comprehensive career development programs and services. Two such concepts, in particular, had an impact. First was the shift from a point-in-time focus to a life span focus for career development. And second, was the personalization of the concept of career (the human career) relating it to life roles, settings, and events. By introducing these two concepts, the door opened for career guidance and counseling personnel to provide programs to a wide range of people of all ages in many different kinds of settings.

These newer concepts of career and career development emerged as a result of and in response to the continuing changes that are taking place in our social, industrial, economic, and occupational environments and structures. Because of these changes, adults and adult career development became a focal point for an increasing number of career development theorists and practitioners in the 1970s (Campbell & Cellini, 1981). This focus continued into the 1980s and, in all probability, will continue to do so into the future. As a result, institutions and agencies, who serve adults traditionally, have added career development

components. And, new agencies and organizations were established to provide adults with career development programs and services where none had existed.

Career development programs and services in business and industry also became a focal point in the 1970s and 1980s. This trend, too, will continue and probably be intensified in the foreseeable future. More businesses and industries as well as many other organizations are realizing the benefits of career development programs and services for their employees. And, if employees benefit, then the organizations benefit also.

The Future

The four predominant trends discussed in this chapter—the evolving meanings of career and career development; the changing environments and structures in which people live and work; the increasing numbers, diversity, and quality of career development programs, tools, and techniques; and the greater number and variety of people and settings being served—are not separate and discreet. They are closely linked and related. This brief look at the future examines the collective impact these trends may have on the theory and practice of career development.

The behavior of individuals is, in part, determined by their thought processes. The language people use represents their underlying conceptual schemes, and, in turn, their conceptual schemata determines their behavior (Gerber, 1983). As definitions of career and career development have evolved, and become broader and more encompassing, particularly during the past 10 years, there has been a corresponding broadening and expansion of programs and services to people of all ages and circumstances. What was once thought of as mainly for young people, is now for everybody. What was once thought of as a program in schools, is now taking place in a whole new array of settings including public and private agencies, institutions, and business and industry.

Although it is clear that a broad definition of career and career development opens up more possibilities and opportunities for programs and services for individuals and groups than a narrow definition, it is equally clear that other variables are involved. The changing economic, occupational, industrial, and social environments and structures in which people live and work have created conditions and needs not previously present. Individuals must now give more attention to their career development. In addition, a more complete understanding of human growth and development from counseling and career psychology, and the corresponding improvement of intervention strategies and resources, have helped in the expansion and extension of career development programs and services for more people in more settings than ever before.

As these trends converge they have begun to shape a new focus for career development programs and services for the future. What will be the focus of career development programs and services in the future? Will future programs and services be remedial, emphasize crises, and deal with immediate concerns and issues in peoples's lives? Will they be developmental and emphasize growth experiences and long range planning activities? Or, will they do both? The sense of the trends discussed in this chapter and in the literature in general clearly indicate that career development programs and services of the future will respond to the developmental, long-term career needs of people as well as to their more immediate career crises needs.

Traditionally, career development programs and services focused on immediate problems and concerns of people. Personal crises, lack of information, a specific occupational choice, and ineffective relationships with spouse, children, fellow employees or supervisors are examples of the immediate problems and concerns to which counselors are asked to respond. This focus for career development programs and services will continue and new and more effective ways of helping people with their problems and concerns will continue to emerge. To help people meet the challenges they may face in the future, however, this focus for programs and services is not sufficient. What is needed is a developmental focus.

The developmental focus for career development programs and services is not new. It has been part of professional literature for a number of years. Gordon (1974), for example, pointed out that traditional practices tended to overemphasize selection and placement instead of nurturing interests and aptitudes. Tennyson (1970, p. 262) made the same point when he stated that "guidance personnel have been inclined to capitalize upon aptitudes already developed rather than cultivating new talents" in their clientele. What is new now is the sense of urgency about the importance of helping people toward the goal of becoming competent, achieving individuals and of helping people focus on their competencies (skills) rather than only on their deficits as they are involved in their career development over the life span.

What began at the turn of the century under the term vocational guidance, with a selection and placement focus, and then shifted in the 1920s and 1930s to a focus on personal adjustment, has now assumed a developmental focus. Selection, placement, and adjustment remain but are encompassed in the concept of career development over the life span. Societal conditions, interacting with our more complete knowledge of human growth and development in career terms, as well as with the broader array of tools and techniques, have brought us to the realization that career development is a life span phenomenon and that all individuals can benefit from career development programs and services, whatever their ages or circumstances.

References

Campbell, R. E., and Cellini, J. V. (1981). A diagnostic taxonomy of adult career problems. *Journal of Vocational Behavior, 19*, 175–190.

Drier, H. N., and Pfister, L. A. (Eds.). (1980). *Career and labor market information: Key to improved individual decision making.* Columbus, OH: National Center for Research in Vocational Education.

Ehrbar, A. F. (1983). Grasping the new unemployment. *Fortune, 107*(10), pp. 107–112.

Gerber, A., Jr. (1983). Finding the car in career. *Journal of Career Education, 9*, 181–183.

Gordon, E. W. (1974). Vocational guidance: Disadvantaged and minority populations. In E. L. Herr (Ed.). *Vocational Guidance and Human Development.* Boston: Houghton Mifflin.

Gysbers, N. C., and Moore, E. J. (1975). Beyond career development—Life career development. *Personnel and Guidance Journal, 53*, 647–652.

Gysbers, N. C., and Moore, E. J. (1981). *Improving guidance programs.* Englewood Cliffs, NJ: Prentice-Hall.

Harris-Bowlsbey, J., Spivack, J. D., and Lisansky, R. S. (1982). *Take hold of your future.* Iowa City, IA: The American College Testing Program.

Jones, G. B., Hamilton, J. A., Ganschow, L. H., Helliwell, C. B., and Wolff, J. M. (1972). *Planning, developing and field testing career guidance programs: A manual and report.* Palo Alto, CA: American Institutes for Research.

Kapes, J. T., and Mastie, M. M. (Eds.). (1982). *A counselor's guide to vocational guidance instruments.* Washington, DC: National Vocational Guidance Association.

Keller, K. E., Biggs, D. A., and Gysbers, N. C. (1982). Career counseling from a cognitive perspective. *Personnel and Guidance Journal, 60*, 367–371.

Matthews, E. (1975). Comment. *Personnel and Guidance Journal, 53*, 652.

National Association of Manufacturers. (1982). *Perspective on national issues: America's human resources—Keys to productivity.* Washington, DC: Author.

Parsons, F. (1909). *Choosing a vocation.* Boston: Houghton Mifflin.

Pinkney, J. W. (1983). The Myers-Briggs type indicator as an alternative in career counseling. *Personnel and Guidance Journal, 62*, 173–177.

Sears, S. (1982). A definition of career guidance terms: A National Vocational Guidance Association perspective. *Vocational Guidance Quarterly, 31*, 137–143.

Super, D. E. (1981). The relative importance of work. *Bulletin—International Association of Educational and Vocational Guidance, 37*, 26–36.

Super, D. E. (1975). Vocational guidance: Emergent decision making in a changing society. *Bulletin—International Association of Educational and Vocational Guidance, 29*, 16–23.

Super, D. E., and Bohn, M. J., Jr. (1970). *Occupational Psychology.* Belmont, CA: Wadsworth.

Tennyson, W. (1970). Comment. *Vocational Guidance Quarterly, 18*, 261–263.
Wolfe, D. M., and Kolb, D. A. (1980). Career development, personal growth, and experimental learning. In J. Springer (Ed.), *Issues in career and human resource development*. Madison, WI: American Society for Training and Development.
Zingaro, J. C. (1983). A family systems approach for the career counselor. *Personnel and Guidance Journal, 62*, 24–27.

The Impact of Technology on Occupational Change: Implications for Career Guidance

Kenneth B. Hoyt

The impact of technology on occupational change will probably vary greatly from nation to nation in the next decade. The need for an exchange of views between nations is obviously great. As a beginning effort, I have prepared a short summary of the situation in the United States. This summary includes some basic facts on a number of aspects of the problem. For each set of facts, implications for career guidance are considered. In my opinion, the best source of data relative to expected occupational changes during the next decade in the United States is the *Occupational Outlook Handbook*, published biannually by the U.S. government (U.S. Department of Labor, 1986). The 1986-87 edition indicates, among other things, that the civilian work force is expected to grow from 114 million in 1984 to 129 million by 1995, a 14% increase. Furthermore, women will account for more than three-fifths of the labor force growth during this period. These two statistics alone are helpful in understanding both (a) how some so-called "declining industries" will actually have more workers in 1995 than they did in 1982, and (b) how the two-worker family is changing America's occupational structure.

When all occupations are divided into either the *service-producing or goods-producing* category, about 70% of current occupations are in the service-producing category. About 75% are expected to be so classified by 1995. Service-producing industries are projected to account for about 9 out of 10 new jobs between 1984 and 1995. It is only in this sense that America can now be said to be a "service type" occupational society. That is, although service industries are the fastest growing part of service-producing industries, they will, even by 1995, represent only about 31.2 million jobs—a fraction of the total of 129 million jobs. (The *Occupational Outlook Handbook* classifies *service industries* as one of seven service-producing industries. *Butler*, for example, is one occupation within the service industries. *Education* is a kind of service-producing industry, but it is not included within the service industry set of occupations.)

To clarify further, data in the *Handbook* make clear that it is absolutely false to contend that America has moved from an agricultural to an industrial to a post-industrial occupational society. Goods-producing industries are still alive

and well in America. As a matter of fact, they are expected to increase 22% between 1982 and 1995 (from 27.1 million to 33.0 million). Today's popular myths about the disappearance of factory jobs because of the "high tech" revolution seem to stem primarily from the fact that Americans have lost about 500,000 jobs in the smokestack industries associated with automobile and steel production (Rosenthal, 1985). Job abolishment is no myth for displaced workers in these industries, but it would be mythical to apply that example to goods-producing industries in general.

Given facts such as these, it seems safe to say that in terms of work, America has moved from being primarily an agricultural society to being primarily an industrial society to being primarily a service, information-oriented, and high technology society (Morris, 1975; Naisbitt, 1982). No one seems sure what one should call the emerging society or exactly how far America is into it (Cook, 1983; Reich, 1983). What is certain is that neither the agricultural society nor the industrial society has disappeared. True, the proportion of the work force engaged in agriculture in America has dropped from about 40% in 1910 to 3% in 1980 (Rumberger & Leven, 1984). It is true that, in a relative sense, service-producing industries are growing at a more rapid rate than are goods-producing industries, but manufacturing jobs are expected to grow by about 1.3 million jobs between 1984 and 1995—a 7% increase.

Further insights into America's probable occupational future can be found in statistics on entrepreneurship (U.S. Small Business Administration, 1984). Small businesses today furnish two-thirds of all new jobs being created in the United States. Women-owned businesses are growing at an all-time high rate: In 1983, 2.8 million sole proprietorships were owned by women (4 times the number of women-owned businesses in 1977). In the 1980–1985 period, entrepreneurs created almost 3 million new corporations. By 1990, nearly one-quarter of the U.S. population—60 million people—will be between 30 and 45 years old, the prime ages for launching new businesses.

Statistics such as these hold multiple implications for professionals in the career guidance movement. Certainly, they make clear the inadvisability of adding one's voice to those urging today's youth to assume, when making career decisions, that the industrial age has disappeared. Similarly, they should help both counselors and those they counsel recognize that, contrary to some popular myths, most of tomorrow's jobs will not be in service occupations. The "certainty of uncertainty" being predicted by many for today's youth is not as inevitable as some have claimed. Finally, it is very clear that career guidance professionals are going to have to pay much more attention to the topic of entrepreneurial careers than most do today. A steady and continuing increase in the number and variety of small businesses in the United States seems certain.

Expected Rate of Occupational Change

Serious arguments exist regarding the expected rate at which America's occupational structure will change over the next 10 years. Some experts have seemed to concentrate on emphasizing how relatively little change can be expected (Kirkland, 1985; Rumberger, 1984). They have pointed out, for example, that most of the 19 million new jobs expected to be generated during the 1980-1990 period will be in very traditional kinds of occupations (e.g., sales clerks, janitors, waiters and waitresses, truck drivers). Jobs in high-tech industries will represent only a small proportion of these 19 million new jobs. Those occupations requiring the greatest numbers of new workers will not be characterized by high technology (Samuelson, 1983). Furthermore, most jobs in the so-called "high-tech" industries will be in "low-tech," not high-tech, occupations (Rumberger & Leven, 1984). High-tech occupations are, at best, no more than 6.2% of America's current work force and, even with expected rapid growth, cannot be much higher than that by 1995 (Rosenthal, 1985).

Those on the other side of this argument seem to delight in identifying what they predict will be new occupations that today's youth should be seriously considering (Bridges, 1983; Borchard, 19 ; Feingold, 1983). Illustrative of such new occupations are (a) aquaculturist, (b) artificial intelligence technician, (c) energy auditor, (d) genetic biochemist, (e) information broker, and (f) space mechanic. There seems little doubt that new occupations such as these—and many more--will be part of America's occupational society by the time this year's kindergarten pupils finish high school.

Career guidance professionals must consider all these data and both sides of this argument as they prepare to help persons choose careers. Personal values of clients will undoubtedly be major factors in career choices. For example, those valuing a high probability of finding any job may choose those occupations expected to employ the greatest numbers of persons in the next decade. Those who value being in on the "ground floor" of occupations just now beginning to grow rapidly may choose occupations that today have relatively few job openings.

There seems little doubt that those who are arguing that tomorrow's occupational society will very much resemble today's are more nearly right than those arguing the case for completely new occupations. Another U.S. Department of Labor publication, *Occupational Projections and Training Data* (U.S. Bureau of Labor Statistics, 1986, pp. 12–13), contains the following data with respect to occupational growth between 1984 and 1995:

Largest Job Growth Occupations	Fastest Growing Occupations
Cashiers	Paralegal personnel
Registered nurses	Computer programmers
Janitors and cleaners, including maids and housekeepers	Computer systems analysts, electronic data processing (EDP)
Waiters and waitresses	Medical assistants
Wholesale trade sales workers	Data processing equipment repair
Nursing aids and orderlies	Electrical and electronics engineers
Salespersons, retail	Computer operators
Accountants and auditors	Travel agents

Clearly, although several of the fastest growing occupations are high-tech in nature, no high-tech type occupations are included in the list of the 10 occupations expected to employ the most new workers between now and 1995. With an expected 120 million or more employed workers, even an increase in a high-tech occupation, of, say, 500,000 employees would not change the overall statistics very much. Career guidance professionals need to be cognizant of the remarkable degree of stability to be expected in America's occupational structure over the next 10 years. If this perspective is kept clearly in mind, then relative growth or decline in a given occupation can be interpreted to clients in a much more realistic fashion.

Effects on Availability of Jobs

There is no clear consensus in the United States with respect to the effect high technology will have on availability of jobs. Both optimists and pessimists can be found among manpower experts. Predictions range all the way from those who predict that jobs will be plentiful (Main, 1982) to those who claim that, unless drastic countermeasures are taken, unemployment in the United States could exceed 25% of the labor force by 1995 (Schwartz & Neikirk, 1984). The official position of the U.S. government, as expressed in the 1986–87 edition of the *Occupational Outlook Handbook* is:

> The overall impact of technology will be to increase the amount of goods and services each worker can produce. Output of goods and services is expected to increase rapidly, however, so that employment should continue to increase in most industries and occupations. (p. 16)

Part of this argument centers around the probable impact of robots on the availability of jobs in the future. The robots are coming; that is certain. It seems

that one robot displaces approximately 1.7 workers in an assembly plant and 2.7 workers in a manufacturing plant (Main, 1982). The fact that, to date, robots seem to have replaced more U.S. workers in the automobile and steel industries than in the clothing and apparel industries seems to have more to do with the relatively high wages of automobile and steel workers than with susceptibility of each industry to robotics. There seems to be general agreement that, if robots can deliver the same skills as humans at the same or lower hourly cost, it is preferable to use robots. After all, as Clapp said, "Robots don't unionize, get pregnant, call in sick, or drop Twinkies in the machinery" (Clapp, 1983).

One apparently conservative argument is that although technology destroys some jobs, it creates others. For example, it has been predicted that robots will eliminate 100,000 to 200,000 jobs by 1990 while creating 32,000 to 64,000 new ones (Hunt & Hunt, 1983).

The capability of robots to displace workers is unmistakable and is growing rapidly as expertise in artificial intelligence develops. But robots cannot really care about persons with whom they work in a human way, and some experts believe that this, in itself, will be enough to ensure that "the office of the future will keep a human face" (Kirkland, 1985, p. 43). Furthermore, robots have not yet become cheap enough to be good investments for most small businesses, and that is where a majority of new jobs will be found in the coming decade (U.S. Small Business Administration, 1984).

Questions of probable availability of jobs in the future extend beyond simply the impact of high technology on job availability. For example, the problem in the United States is further complicated by the great increase in the various subpopulations seeking to enter the labor force. The growing numbers of women, structurally displaced middle-aged workers, minority persons, illegal immigrants, and senior citizens seeking jobs have greatly compounded the prediction problem over what it was when the prime source of new workers was expected to be people recently leaving school. As noted above, the U.S. Department of Labor can and does make 10-year predictions of numbers of persons likely to be employed. It does not, however, make similar predictions regarding numbers likely to be unemployed. Thus, data-based predictions of how many will be unsuccessful in seeking employment are not available.

Even if assumptions of very rapid technological diffusion are accepted, it has been predicted that the maximum number of jobs to be eliminated by the year 2000 is 20 million—or 11% of all the jobs that would exist in the absence of further technological diffusion (Rumberger & Leven, 1984). Several implications for professionals in career guidance are obvious. They can be briefly summarized as follows:

1. No matter how many persons lose jobs because of technology, the human need of all human beings to work will remain. If, for some

persons, that need cannot be met through paid employment, then counselors must provide help in meeting it through unpaid work done as part of productive use of leisure time.

2. Workers whose jobs are displaced by robots are very likely to find it necessary to enter occupations with lower pay scales than those in the jobs they formerly held. This will create serious career guidance problems for both individuals and families.
3. The continuing growth in both service-producing industries (where a personal touch is an important ingredient in success) and small businesses (that cannot afford robots) has great implications for the ways that career guidance professionals deal with clients. The importance of human interactions in career decision making is almost sure to increase.
4. High technology will have some impact by destroying some current jobs while creating others. Its greatest impact seems likely to be on the number of times a given person is forced to change occupations during his or her career.
5. The ability of any nation to compete successfully in the world marketplace is a function of producing higher quality products at lower costs. To whatever extent that goal can be better met by robots than by people, robots can be expected to dominate. The reverse is equally true. The challenge to career guidance professionals clearly includes encouraging clients to produce high quality efforts at a wage that enables the employer to make a reasonable profit.

Effects on Education Required for Jobs

American experts strongly disagree about the likely impact that high technology will have on the amount and kinds of education required to fill tomorrow's jobs. Some emphasize the expected increases in worker dissatisfaction resulting from a combination of a much better educated work force and the "deskilling" of many occupations made possible by high technology (Leven, 1983). The general principle involved in this dissatisfaction is that as machines become more sophisticated through applications of high technology, the knowledge required to operate such machines declines (Rumberger & Leven, 1984). Others seem very optimistic regarding the positive potential of high technology for relieving the drudgery of routine tasks, for freeing individuals to be more creative in their thinking, and for multiplying options available to workers with respect to both where they work and when they work (Aspen Institute for Humanistic Studies, 1982).

Most writers on this subject, however, seem to make dual kinds of predictions; that is, they predict that occupations will become more challenging and

exciting for those in highly skilled occupations while simultaneously becoming even less meaningful than today's jobs in occupations at the lower end of the occupational wage scale (Edgerton, 1983; Main, 1982; Schwartz & Neikirk, 1984).

The basic argument is clearly seen in the following contrasting statements:

> Future job growth will favor service and clerical jobs that require little or no post secondary schooling and that pay below average wages. (Rumberger & Leven, 1984)

> We are moving from a work force in which 38% have the . . . skills associated heretofore with the college-bound to a labor market in which nearly half the new hires will be expected to be so qualified. (Honig, 1985)

Obviously, both views cannot be right. Returning to the *Occupational Outlook Handbook* (1986-87 edition) as a prime source of data, the following quotes are germane:

> Between 1970-1984, employment of college graduates grew 127% . . . the proportion in professional technical/managerial occupations declined . . . because . . . [they] . . . did not expand rapidly enough. As a result, 1 of 5 college graduates (1970-1984) took jobs not usually requiring a college degree. This oversupply of college graduates is likely to continue through the mid 1990s. (p. 14)

> Through the mid-1990s, most jobs will become available as the result of replacement needs. . . . Occupations with the most replacement openings generally are large, with low . . . training requirements. (p. 21)

Another set of implications for career guidance professionals seem apparent here. These implications include:

1. Career guidance professionals should not be surprised to discover that most of tomorrow's jobs are expected to require no more than a high school education. After all, that is true for today's jobs, and as pointed out above, profound change in the total occupational society will not occur very rapidly.
2. It is not necessarily inappropriate for career guidance professionals to continue helping their clients attend 4-year college and university settings. After all, the *Handbook* provides clear evidence demonstrating that (a) the chances of having no job at all decline as one's educational level increases, and (b) college programs that last 4 years or longer provide qualifying training to more workers than do all other types of schooling combined (U.S. Bureau of Labor Statistics, 1986).
3. With the sizable oversupply of college graduates expected to continue well into the 1990s, career guidance professionals have a clear

responsibility to include an emphasis on alternative career planning for those whose college degrees are not directly useful in the labor market. This topic must be included in counseling.

4. There is clearly a need for career guidance professionals to increase their emphasis on helping persons consider postsecondary educational opportunities at the subbaccalaureate level, particularly in technical education.
5. In discussing educational plans with clients, career guidance professionals must emphasize more than the goal of education as preparation for paid employment. As high technology continues to influence occupational change, it becomes more and more important that career guidance professionals help clients see work as an integral part of a total lifestyle. There is a need to broaden the perspective provided to clients in career counseling.
6. The fact that more workers received the specific training needed for their jobs through on-the-job (OJT) training than through any form of schooling is significant here. The growing presence of training provided by the employer is important for career guidance professionals to convey to those they counsel.

The "Declining Middle?"

A considerable number of experts have projected that in the future U.S. occupational society a relatively small number of highly skilled workers and a somewhat larger number of poorly skilled workers will find the "middle" of the occupational society occupied by robots and other forms of automation (Kuttner, 1983; Leven, 1983; Schwartz & Neikirk, 1984). Others have stated that predictions of such a two-tier work force seem plausible only if efforts to meet training needs of the displaced, the underemployed, and the unemployed are insufficient (Harris, 1985). The logic of this argument is undeniable; that is, it is not difficult to envision conditions in which machines of various kinds do most of the work, leaving many persons with, in effect, no productive societal contributions to make in the occupational society.

Opponents of this point of view also present formidable arguments. Samuelson (1983) provided data indicating that the relative percentages of total income distributed a mg various quintiles of employed workers has remained remarkably steady over several decades. Kirkland (1985) contended that the concept of the *declining middle* is a statistical fluke caused by a U.S. Census Bureau effort to improve measurement of family income distribution. At the same time, he hinted that the continuation of middle-income families may be

largely due to the rise in two-income households and that, if this condition did not exist, statistics might, indeed, show a declining middle.

The most compelling data, in my opinion, are those presented by Rosenthal (1985), showing that between 1973 and 1982 the percentage of total employment in the one-third middle earnings category actually increased. Additionally, Rosenthal has produced data demonstrating that one of the expected outcomes of moving to high-tech industries is to increase, not decrease, the growth of middle-income jobs. Furthermore, his data are based on occupational, not family-income, statistics (Rosenthal, 1985).

The implications for career guidance professionals of this argument and of the data on both sides of the issue include:

1. The declining middle phenomenon, although commonly discussed in today's popular literature, cannot, at present, be well validated with firm data. It would not be advisable to counsel persons today as though an occupational society with a declining middle is something they can expect soon.
2. It may well be that the declining middle phenomenon will come into existence 20 to 30 years from now. Thus, it is a topic that should be a part of today's career guidance conversations. Career guidance professionals will not be fair to their clients if they pretend that the possibility of the declining middle does not exist.
3. To whatever extent any given worker at the lower skill levels of the occupational society finds the declining middle to be a reality for him or her, career guidance must include discussion of how such workers can continue to maintain positive self-concepts and feelings of self-worth in their total life-style.

Conclusion

The impact of high technology on the occupational structure clearly varies—and will continue to vary—from nation to nation. Thus, the special problems in career guidance posed by such technology must also vary from nation to nation. In this article I have approached the problem only from the standpoint of the United States.

In the United States, it it clear that high technology is having an impact on the occupational society and thus on the challenges for change in vocational guidance. It is equally clear that neither the magnitude nor the rapidity of change brought about by technology is as great as some writers seem to suggest. The rate of change is, to be sure, more rapid than in the past and, as high technology emerges, the rate of change will increase still more. Yet in viewing

the U.S. occupational structure as a whole, it seems unlikely that high technology will have great impact on the basic nature of the occupational society at least up to the year 2000.

This observation, of course, does not mean that the individual jobs of many workers will be unaffected by high technology. That simply is not true. High technology will require many workers to adapt to new tools and new procedures even while remaining in the same job and in the same occupation. The adjustment problems associated with such change pose significant challenges for vocational guidance.

The major challenge to career guidance being posed by high technology is that of finding ways of helping clients retain a basic commitment to work as an important part of their total system of personal values. At the same time, counselors must also help clients fit the concept of work into clients' total lifestyles in a meaningful and satisfying manner. This includes helping persons plan for productive use of work as part of leisure time.

References

Aspen Institute for Humanistic Studies. (1982). The hopes and fears of the information revolution. *Communications and Society Report-in-Brief*, No. 82–1.

Borchard, D. (1984, August). New choices: Career planning in a changing world. *The Futurist*, pp. 26–27.

Bridges, L. (1983, September). Brave new work. *Success*, pp. 22–26.

Clapp, D. (1983, May 30). Robot boom could lead to disaster or discovery. *Infoworld*, p. 14.

Cook, J. (1983, April). You mean we've been speaking prose all these years? *Forbes*, pp. 142–149.

Edgerton, R. (1983, June). A college education up to beating the Japanese. *AAHE Bulletin*, pp. 3–7.

Feingold, N. (1984, February). Emerging careers: Occupations for post industrial society. *The Futurist*, pp. 9–16.

Harris, P. R. (1985). Future work. *Personnel Journal*, *64*(6), 52–58.

Honig, B. (1985, May 29). Jobs and education. *Education Week*, p. 23.

Hunt, H. A., & Hunt, T. L. (1983). *Human resource implications of robotics*. Kalamazoo, MI: W. E. Upjohn Institute for Employment Research.

Kirkland, R. I., Jr. (1985, June). Are service jobs good jobs? *Fortune*, pp. 38–43.

Kuttner, B. (1983, July). The declining middle. *Atlantic*, pp. 60–72.

Leven, H. M. (1983). The workplace: Employment and business interventions. In E. Seidman (Ed.), *Handbook of social intervention* (pp. 499–521). Beverly Hills, CA: Sage.

Main, J. (1982, June). Work won't be the same again. *Fortune*, pp. 58–65.

Morris, W. (1975). *Work and your future: Living poorer, working harder.* Reston, VA: Reston Publishing.

Naisbitt, J. (1982). *Megatrends: Ten new directions transforming our lives.* New York: Warner.

Reich, R. B. (1983, April). The next American frontier. *Atlantic*, pp. 97–108.

Rosenthal, N. H. (1985, March). *Tomorrow's jobs.* Unpublished paper presented at the annual meeting of the American Association for Counseling and Development, New York.

Rumberger, R. W. (1984). The growing imbalance between education and work. *Phi Delta Kappan, 65*, 342–346.

Rumberger, R. W., & Leven, H. M. (1984). *Forecasting the impact of new technologies on the future job market.* Palo Alto, CA: Stanford University, School of Education, Institute for Research on Educational Finance and Governance.

Samuelson, R. J. (1983, December). Middle-class media myth. *National Journal*, pp. 2673–2678.

Schwartz, G., & Neikirk, W. (1984). *The work revolution.* New York: Rawson Associates.

U.S. Bureau of Labor Statistics. (1986). *Occupational projections and training data* (Bulletin 225). Washington DC: U.S. Department of Labor.

U.S. Department of Labor. (1986). *Occupational outlook handbook: 1986-87.* Washington, DC: U.S. Government Printing Office.

U.S. Small Business Administration. (1984). *The state of small business: A report of the President.* Washington, DC: U.S. Government Printing Office.

Using Books to Enhance Career Awareness

Nancy K. Staley
John N. Mangieri

Career education has had an important place in our elementary schools. In the early 1970s Sidney P. Marland, then Undersecretary of Health, Education, and Welfare, established career education "to be the number one priority in America's schools." It was envisioned by the U.S. Office of Education "to be a comprehensive curriculum-related effort which attempts to meld diverse instructional materials and various teaching strategies into a sequential K–12+ program" (Marland, 1971, p. 22).

Although career education no longer occupies such a prominent national position, it should be an important area of concern for both elementary school teachers and school counselors. It is widely acknowledged that children begin to formulate career decisions at a relatively young age. Hoppock (1967) advised that, with rare exceptions, children in the early grades are not ready for concentrated doses of occupational information or formal coursework in careers. Yet he believed that they become aware of many occupations that were unknown to them before. They acquire impressions of the work people do in these occupations, the kinds of people employed, the compensations offered, and the abilities that are required for acceptable performance. On the basis of these impressions, they enthusiastically embrace some occupations as possible careers for themselves and absolutely remove others from either present or future consideration. (Hoppock, 1967)

It is ironic that at a time when the fourth edition of the *Dictionary of Occupational Titles* (U.S. Department of Labor, Employment, and Training Administration, 1977) gives information on some 20,000 jobs, many children have so little awareness of career options. A children's librarian reported that the results of a casual survey that she conducted with first and second graders showed that their responses to the age-old question—"What do you want to be when you grow up?"—differed little from those of previous generations. Most of the children's answers fell into the doctor-teacher-fireman category (Ridenour, 1980). Surveys such as this remind us that one of the major goals of adults who work with children must be to broaden children's awareness of job possibilities.

There are a variety of strategies and activities that are appropriate for helping boys and girls learn about career options. Hoppock (1967) suggested that the teacher be a good listener and let children talk about their occupational choices. He also advised encouraging children to fantasize about possible

careers: "From kindergarten to third grade let the child dream. The child-development people tell us that these are the ages during which fantasy is a good thing . . . " (p. 363).

A wide assortment of children's books will provide children with vicarious experiences and the necessary background for dreaming and fantasizing about career options. Trade books can be used in a variety of ways. In some classrooms they will be a supplement to other activities, such as discussions, field trips, units of work. In other situations, books will form the nucleus for learning about career awareness.

Many elementary school teachers have book corners or classroom libraries, and most elementary schools provide libraries or media centers so that books are readily accessible to children and faculty. It is important that books about career awareness be included in these collections. Children should be given the opportunity to read both informational books that offer facts about many kinds of occupations and fiction that portrays positive role models. Counselors, teachers, and librarians should provide children with the best of the many books that are available about career awareness. An effort should be made to select books that portray men and women who have equal opportunities, and illustrations should reflect sexual as well as racial balance.

Suggested Readings to Enhance Career Awareness

The bibliography presented below will be helpful to teachers and counselors. Many books and book reviews were read in the process of compiling it. An attempt was made to choose books that were both culturally and sexually unbiased. Reading levels are indicated as a grade level span to suggest a time period during which children would probably be interested in reading these particular books.

Book reviewers and publishers usually designate in some way the appropriate age or interest level for which the book is intended. For uniformity, in this bibliography this information is organized as follows:

Grades K–3: P (primary), ages 5 to 9
Grades 4–6: I (intermediate), ages 10 to 12
Grades 7–9: A (advanced), ages 13 to 15

These designations are not meant to be applied rigidly. If, for example, a book is recommended for use with children in grades 4 through 6, it would probably be enjoyed by children in grades 4, 5, and 6. Younger children might enjoy it if it were read aloud to them, and accelerated readers in the second or third grades might like reading it independently. It is important to note that more than chronological age or grade in school is important in matching an appropriate

book with a child. According to Huck (1979), "the readability level of a book is not as important as its content in relation to the reader's actual interest in a subject" (p. 528). Cullinan (1981) pointed out that "the developmental level of the reader is a major factor in the equation when selecting a good book" (p. 7).

The books in this bibliography are assigned to one of the 15 career categories that were established by the U.S. Office of Education or to a category termed *career options*. The names of the publishers are in abbreviated form; their complete names and addresses can be found in a standard reference work such as *Literary Market Place* (1982).

Agribusiness and Natural Resources

Benson, C. *Careers in agriculture.* Lerner, 1979. (Grades K–6)
Benson, C. *Careers in animal care.* Lerner, 1979. (Grades K–6)
Clymer, E. *Me and the eggman.* Dutton, 1972. (Grades 4–6)
Demuth, P. *Joel: Growing up a farm man.* Dodd, 1982. (Grades 4–6)
Facklam, M. *Wild animals, gentle women.* Harcourt, 1978. (Grades 7–9)
Garner, A. *Granny Reardun.* Collins/World, 1978. (Grades 4–6)
Hall, L. *Careers for dog lovers.* Follett, 1978. (Grades 4–6)
Krementz, J. *A very young rider.* Knopf, 1977. (Grades 4–6)
Lerner, M. *Careers in a zoo.* Lerner, 1980. (Grades K–6)
O'Conner, K. *Maybe you belong in a zoo! Zoo and aquarium careers.* Dodd, 1982. (Grades 4–6)

Business and Office

McHugh, M. *Law and the new woman.* Watts, 1975. (Grades 4–6)
Ray, J. A. *Careers in computers.* Lerner, 1979. (Grades K–6)

Communications and Media

Bendrick, J., & Bendrick, R. *Finding out about jobs: T.V. reporting.* Parents Magazine Press, 1976. (Grades 4–6)
Davis, M. *Careers in printing.* Lerner, 1979. (Grades K–6)
Davis, M. *Careers with a telephone company.* Lerner, 1979. (Grades K–6)
Duncan, L. *Chapters: My growth as a writer.* Little, Brown, 1982. (Grades 4–6)
Edmonds, I. G. *Broadcasting for beginners.* Hoal, 1981. (Grades 4–6)

Construction

Adkins, J. *How a house happens.* Walker, 1972. (Grades 4–6)
Berger, M. *Building construction.* Watts, 1978. (Grades 4–9)

Harmon, C. *Skyscraper goes up.* Random House, 1973. (Grades 4–6)
Kelly, J. E. *Tunnel builders.* Addison-Wesley, 1976. (Grades K–3)
Lieber, A. *You can be a carpenter.* Lothrop, Lee & Shepard, 1974. (Grades 6–9)
Ramos, G. *Careers in construction.* Lerner, 1979. (Grades K–6)
Sobol, H. L. *Pete's house.* Macmillan, 1978. (Grades K–6)

Consumer and Homemaker Operations

Lerner, M. *Careers in a supermarket.* Lerner, 1979. (Grades K–6)
Miles, B. *The real me.* Knopf, distributed by Random House, 1974. (Grades 3 and up)
Perl, L. *That crazy April.* Seabury, 1974. (Grades 4–9)
Rabe, B. *Naomi.* Thomas Nelson, 1975. (Grades 6–9)
Vestly, A. *Hello, Aurora.* Crowell, 1974. (Grades 4–6)

Environment

Benson, C. *Careers in conservation.* Lerner, 1979. (Grades K–6)
Bergaust, E. *Next 50 years on the moon.* Putnam, 1974. (Grades 4–6)
Berger, M. *Jobs that save our environment.* Lothrop, Lee & Shepard, 1973. (Grades 4 and up)
Chester, M. *Let's go to the moon.* Putnam, 1974. (Grades 4–6)
Cobb, V. *Supersuits.* Lippincott, 1975. (Grades 4–6)
Fodor, R. V. *What does a geologist do?* Dodd, 1977. (Grades 4–6)

Hospitality and Recreation

Adler, D. A. *You think it's fun to be a clown?* Doubleday, 1981. (Grades K–3)
Babcock, D., & Boyd, P. *Careers in the theater.* Lerner, 1980. (Grades K–6)
Cook, S. *The Alvin Ailey American Dance Theater.* William Morrow, 1978. (Grades 4–6)
Davis, M. *Careers in baseball.* Lerner, 1979. (Grades K–6)
Dean, K. S. *Maggie Adams, dancer.* Avon Books, 1980. (Grades 4–6)
Gross, R. B. *If you were a ballet dancer.* Scholastic Book Services, 1979. (Grades K–6)
Hancock, S. *Bill Pickett: First Black rodeo star.* Harcourt, 1978. (Grades 4–6)
Kelly, K. *Careers with the circus.* Lerner, 1979. (Grades K–6)
Klein, D. *On the way up.* Messner, 1978. (Grades 4–6)
Krementz, J. *A very young dancer.* Knopf, 1976. (Grades 4–9)
Krementz, J. *A very young gymnast.* Knopf, 1978. (Grades 4–9)
Lerner, M. *Careers in a restaurant.* Lerner, 1979. (Grades K–6)
Lerner, M. *Careers in hotels and motels.* Lerner, 1979. (Grades K–6)

Palladian, A. *Careers in soccer.* Lerner, 1979. (Grades K–6)
Peck, R. H. *Hotel and motel careers.* Watts. (Grades 4–6)
Ray, J. A. *Careers in football.* Lerner, 1979. (Grades K–6)
Ray, J. A. *Careers in hockey.* Lerner, 1979. (Grades K–6)
Streatfield, N. *Thursday's child.* Random House, 1971. (Grades 4–6)

Manufacturing

Cooke, D. C. *How books are made.* Dodd, Mead, 1963. (Grades 4–6)
Langer, H. *Who puts the print on the page.* Random House, 1976. (Grades 4–6)
Lerner, M. *Careers in auto manufacturing.* Lerner, 1979. (Grades K–6)
Lerner, M. *Careers in shipping.* Lerner, 1980. (Grades K–6)
Lerner, M. *Careers in toy making.* Lerner, 1980. (Grades K–6)
Lieber, A. *You can be a machinist.* Lothrop, Lee & Shepard, 1975. (Grades 7–9)
Lieber, A. *You can be a mechanic.* Lothrop, Lee & Shepard, 1975. (Grades 7–9)
Lieber, A. *You can be a printer.* Lothrop, Lee & Shepard, 1975. (Grades 7–9)
Lieber, A. *You can be a welder.* Lothrop, Lee & Shepard, 1977. (Grades 7–9)

Marine Science

Berger, M. *Oceanography lab.* Day, 1973. (Grades 4–6)
L'Engle, M. *A ring of endless light.* Farrar, Straus & Giroux, 1980. (Grades 7–9)

Marketing and Distribution

Asch, F. *Good lemonade.* Watts, 1976. (Grades K–6)
Bulla, C. R. *Shoeshine girl.* Crowell, 1975. (Grades 4–6)
Krantz, H. *100 pounds of popcorn.* Vanguard Press, 1961. (Grades 4–6)
Merrill, J. *The toothpaste millionaire.* Houghton Mifflin, 1974. (Grades K–6)
Pfeffer, S. B. *Kid power.* Watts, 1977. (Grades 4–6)
Williams, B. *I know a salesperson.* G. P. Putnam's Sons, 1978. (Grades K–3)

Personal Service

Beam, R. *What happens to garbage?* Messner, 1975. (Grades 4–6)
Bunting, E. *Barney the beard.* Four Winds, 1975. (Grades K–3)
Criner, B. & Criner, C. *Jobs in personal services.* Lothrop, Lee & Shepard, 1974. (Grades K–6)
Goldreich, G., & Goldreich, E. *What can she be? A newscaster.* Lothrop, 1972. (Grades 2–5)
Jahn, M. *How to make a hit record.* Westminister, 1975. (Grades 4–6)

Jeness, A. *The bakery factory: Who puts the bread on your table?* Crowell, 1978. (Grades 4–6)
Klever, A. *Women in television.* Westminister, 1975. (Grades 4–6)
Lerner, M. *Careers in beauty and grooming.* Lerner, 1979. (Grades K–6)
Lerner, M. *Careers with a newspaper.* Lerner, 1979. (Grades K–6)
Lieber, A. *You can be a plumber.* Lothrop, Lee & Shepard, 1974. (Grades 7–9)
Lieber, A. *You can be a professional driver.* Lothrop, Lee & Shepard, 1974. (Grades 7–9)
McGonagle, B. & McGonagle, M. *Prepare for a career in radio and television announcing.* Lothrop, Lee & Shepard, 1974. (Grades 4–9)
Pelta, K. *What does a lifeguard do?* Dodd, 1977. (Grades 4–6)
Pompian, R. O. *Advertising.* Watts, 1970. (Grades 7–9)
Ray, J. *Careers with a television station.* Lerner, 1979. (Grades K–6)
Steinberg, B. *Who keeps America clean?* Random House, 1976. (Grades 4–6)
Steinberg, B. *Who puts the news on television?* Random House, 1976. (Grades 4–6)

Public Service

Benson, C. *Careers in education.* Lerner, 1979. (Grades K–6)
Benson, C. *Careers with the city.* Lerner, 1979. (Grades K–6)
Criner, B., & Criner. C. *Jobs in public service.* Lothrop, Lee & Shepard, 1974. (Grades K–6)
Palladian, A. *Careers in the air force.* Lerner, 1979. (Grades K–6)
Palladian, A. *Careers in the army.* Lerner, 1979. (Grades K–6)
Palladian, A. *Careers in the navy.* Lerner, 1979. (Grades K–6)
Peterson, J. *Careers with a fire department.* Lerner, 1979. (Grades K–6)
Peterson, J. *Careers with the postal service.* Lerner, 1979. (Grades K–6)
Ray, J. A. *Careers with a police department.* Lerner, 1979. (Grades K–6)
Shuttlesworth, D. E. *Zoos in the making.* Dutton, 1977. (Grades 4–9)

Transportation

Dean, J. B. *Careers with an airline.* Lerner, 1979. (Grades K–6)
Gray, G. *Jobs in transportation.* Lothrop, Lee & Shepard, 1973. (Grades 4–6)
Lerner, M. *Careers in trucking.* Lerner, 1980. (Grades K–6)
Meade, C. *Careers with a railroad.* Lerner, 1979. (Grades K–6)

Fine Arts and Humanities

Berger, M. *Jobs in fine arts and humanities.* Lothrop, Lee & Shepard. (Grades 4–6)

Blumfield, M. J. *Careers in photography.* Lerner, 1980. (Grades K–6)
Busnar, G. *Careers in music.* Mesner, 1982. (Grades 4–9)
Cost, L. *The young ballet dancer.* Stein and Day, 1979. (Grades 4–6)
Cretan, G. Y. *All except Sammy.* Little, 1966. (Grades K–3)
Edmonds, E. G. *The mysteries of Troy.* Nelson, 1978. (Grades 4–6)
Goffstein, M. B. *Two piano tuners.* Farrar, 1977. (Grades 4–6)
Shapiro, I. *Darwin and the enchanted isles.* Coward, 1978. (Grades 4–6)
Smith, B. C. *Breakthrough: Women in religion.* Walker, 1978. (Grades 4–6)
Thomson, P. *Museum people: Collectors and keepers at the Smithsonian.* Prentice-Hall, 1977. (Grades 4–6)

Health

Berger, M. *Animal hospital.* John Day, 1973. (Grades 4–6)
Berger, M. *Medical center lab.* John Day, 1976. (Grades 7–9)
Bowman, K. *New women in medicine.* Creative Education/Children's Press, 1976. (Grades 4–6)
Buchenholtz, B. *Doctor in the zoo.* Viking Press, 1974. (Grades 4–9)
Dodge, B. S. *The story of nursing.* Little, Brown, 1965. (Grades 4–6)
Englebardt, S. L. *Jobs in health care.* Lothrop, Lee & Shepard, 1973. (Grades K–9)
Feather, J. H. *Sawtooth Harbor Bay.* Nelson, 1973. (Grades 4–6)
Iritani, C. A. *I know an animal doctor.* Putnam, 1970. (Grades K–3)
Lee, M. P. *The team that runs your hospital.* Westminister, 1981. (Grades 4–6)
McPhee, R. *Rounds with a country vet.* Dodd, 1977. (Grades 4–6)
Rockwell, H. *My doctor.* Macmillan, 1973. (Grades K–3)
Shay, A. *What it's like to be a doctor.* Regnery, 1971. (Grades 4–6)
Smith, D. B. *Kick a stone home.* Crowell, 1974. (Grades 7–9)

Career Options

Alexander, S. *Finding your first job.* Dutton, 1981. (Grades 4–6)
Ancona, G. *What do you do? A book about people and their work.* Dutton, 1976. (Grades 4–6)
Cleary, B. *Ramona and her father.* Morrow, 1977. (Grades 4–6)
Cole, S. *Working kids on working.* Lothrop, Lee & Shepard, 1981. (Grades 4–6)
Cowles, K. *What will I be?* Golden Press, 1979. (Grades K–3)
English, B. L. *Women at their work.* Dial, 1977. (Grades K–9)
Faber, N. *I found them in the yellow pages.* Little, Brown, 1973. (Grades K–3)
Fitzhugh, L. *Nobody's family is going to change.* Dell, 1975. (Grades 4–6)
Harper, A. *How we work.* Harper, 1977. (Grades K–3)

Hart, C. *Delilah.* Harper, 1973. (Grades K–6)
Horn, Y. *Dozens of ways to make money.* Harcourt, 1977. (Grades 4–6)
Johnston, T. *Odd jobs.* Putnam, 1977. (Grades K–3)
Kraus, R. *Owliver.* Windmill Press, 1974. (Grades K–3)
Lisker, S. O. *I am.* Hastings House, 1975. (Grades K–3)
Ott, J., & Stroer, R. *Work as you like it: A look at unusual jobs.* Messner, 1979. (Grades 4–6)
Saul, W. *Butcher, baker, cabinetmaker: Photographs of women at work.* Crowell, 1978. (Grades K–3)
Scarry, R. *Richard Scarry's busiest people ever.* Random House, 1976. (Grades K–6)
Seed, S. *Saturday's child: 36 women talk about their jobs.* O'Hara, 1973. (Grades 7–9)

Four Strategies for Using the Bibliography

Choosing Books

In selecting appropriate books from the bibliography, it is important to remember that children at a particular grade level are not all alike. There will be a wide range of reading abilities and interest levels among the children in a class. Therefore, when selecting books for a group of children, it is a good idea to choose many titles that appeal to both younger children and older ones. If possible, choose multiple copies of some books so that children can read together in small groups or with partners.

Read Aloud

It is recommended that some books be selected that will appeal to the entire class and that these be read aloud to the class. The selection may also include a difficult book that will stretch the children's imaginations. If a counselor is working with the teacher in a classroom situation, it may be possible for one of the adults to read to a small group of children or even to an individual child. Reading aloud to children is important throughout the elementary school years; it should not be limited to small children. Older children need to be introduced to good books that may be too difficult for them to read but that they can understand and enjoy if someone else reads to them. The reading aloud period should be followed by questions and discussion. Hearing these books read can provide students with vicarious experiences that they talk about, write about, and think about.

Sustained Silent Reading (SSR)

Children will enjoy reading many of these books silently. Blocks of time should be allocated for independent reading activities. One strategy that works well is Sustained Silent Reading (SSR). In many classrooms all members of the class (including the teacher) voluntarily read books of their choice for a predetermined time period. Students in the early grades may start with a 15-minute period that stretches to 30 minutes later in the year. Older children read silently for longer periods. The emphasis does not have to be on silence. Children might read with partners. The teacher might read with individual children at times; at other times they would read silently to themselves.

One may wonder how beginning readers cope with the decoding of words they encounter in their independent reading. Psycholinguistic theory supports the idea that even beginning readers read for meaning (Smith, 1973). As they try to make sense of the story and reconstruct the author's message, they deal with the words and sentences in context; they do not gain comprehension by looking at each word in isolation. It is helpful if the unknown word is explained so they can continue their efforts to understand the meaning of the passage. During SSR or other free reading periods, there will be times when the teacher is unavailable to explain new words. When the teacher is busy, he or she may assign this responsibility to some of the more able readers, who will be "word helpers." Because there is normally a wide range of reading abilities within one classroom, word helpers probably can be chosen from class members. When children read together with partners, they should be encouraged to help one another with unknown words.

Career Awareness Units

Teachers and counselors can work together to present a unit or theme that emphasizes career awareness. In the early grades the emphasis may be on community workers such as the druggist, dentist, grocer, and librarian. In the upper grades, a more sophisticated approach should be used. Children might explore more complex issues such as supply and demand, requirements for entry into occupations, and the effect of change on the future of occupations. Trade books can be a valuable source of information for the implementation of these career awareness units.

The preceding are not, of course, the only strategies in which counselors and teachers can use trade books to integrate career awareness in the elementary school curriculum. Other comparable measures can be used successfully to accomplish this goal. What we are advocating is the employment of trade books to enlarge the career awareness of children.

References

Cullinan, B. E. (1981). *Literature and the child.* New York: Harcourt Brace Jovanovich.

Hoppock, R. (1967). *Occupational information.* New York: McGraw-Hill.

Huck, C. S. (1979). *Children's literature in the elementary school.* New York: Holt, Rinehart and Winston.

Literary market place: The directory of American book publishing. (1982). New York: R. R. Bowker.

Marland, S. B. (1971). Career education. *Today's Education, 60,* 22–25.

Ridenour, S. C. (1980, February). Doctor-teacher-fireman: Career books for children. *School Library Journal,* pp. 32–33.

Smith, F. (1973). *Understanding reading.* New York: Holt, Rinehart and Winston.

U.S. Department of Labor, Employment and Training Administration. (1977). *Dictionary of occupational titles.* Washington, DC: U.S. Government Printing Office.

The Art of Career Exploration: Occupational Sex-Role Stereotyping Among Elementary School Children

Mary Bowe Hageman
Samuel T. Gladding

There has been considerable research in recent years on occupational sex-role stereotyping (Farmer, 1978; Navin & Sears, 1980; Remer & O'Neill, 1980; Wolleat, 1979; Worell, 1980) Much of this research has demonstrated that children think certain traditional vocations are definitely for men and others are for women (Schlossberg & Goodman, 1972) unless a concerted effort is made to change their perception.

Of the investigations into occupational sex-role stereotyping, many have focused on females and how to effectively change their attitudes. For example, Cramer, Wise, and Colburn (1977) reported positive results in a study of the effectiveness for eighth grade girls of a short "mini-course" designed to modify some of their stereotyped attitudes about vocations and make them more informed about career choices. Another study involving female high school students (Burlin, 1976) indicated that girls were aware of innovative occupations, but they did not feel free to pursue them. Significant others in the girl's lives, especially parents and boyfriends, were a very strong inhibiting influence. It was concluded that, unless these others changed their attitudes, very little actual change would take place for the girls themselves.

With elementary school children, indications have been mixed concerning a decline in occupational sex-role stereotyping. For example, Gregg and Dobson (1980), in a study of first and sixth graders, found that children accepted both men and women working in a variety of occupations. They found no significant difference between boys and girls in assigning occupational roles to either men or women. They did, however, find that girls, when asked to state their own interest in specific careers. chose traditionally female occupations, even though they had been willing to accept females in nontraditional jobs. It seems that even young girls still have a conflict between traditional feminine behavior and the active pursuit of a career. Patterson (1973) has indicated that many girls feel they have a choice between marriage and a career. Most of them, however, will work outside the home at some point in their lives (Conger, 1981).

The purpose of this study was to obtain further information in the field of occupational sex-role stereotyping among elementary school children. New data

was gathered on children's willingness to accept men and women in various occupations and on their own willingness to aspire to a nontraditional occupation. The study was unique because of its incorporation of art as a concrete adjunct means of examining career aspirations in children. Children's socioeconomic backgrounds, grade level, and gender prejudices regarding specific careers were also considered.

Method

Participants

The participants were 90 sixth graders (47 females, 43 males) and 84 third graders (39 females, 45 males) in two elementary schools in Fairfield County, Connecticut. Socioeconomic differences existed between the children in the two schools: In one school a majority of the children came from upper-middle and lower-upper class families, while the other school's children were from upper-lower and lower-middle class backgrounds. Both schools, however, were located in suburban settings.

Instrument

Using as a guide the annual averages of employed persons that were published in January 1981 by the Bureau of Labor Statistics, U.S. Department of Labor (*Employment and Earnings*, 1981), the researchers compiled a checklist of 50 occupations. The Department of Labor breaks all occupations down into four major categories (with various subgroups under each): (a) white-collar workers, (b) blue-collar workers, (c) service workers, and (d) farm workers. The same annual table lists the percentages of females in each occupation.

We attempted to incorporate into our list occupations from each category, with emphasis on those occupations that would be familiar to children in the age group surveyed. We also attempted to use occupations that are considered traditional and nontraditional for women. The Labor Department defines an occupation as nontraditional if it has few, if any, female workers. A stricter interpretation classifies an occupation as nontraditional for women if 75% of the workers in that occupation are men (Bucknell & Gray, 1981). In our list 22 occupations met the latter definition of a nontraditional occupation for women, 23 were traditional by this standard, and 5 were "unclassified" because of a lack of government data on the percentage of women employed in them.

The percentage of females employed in a particular occupation was deleted from the list before it was given to the children. In its place were instructions

asking the children to check after each occupation whether the occupation should be done by a man, a woman, both, or that it made no difference. The emphasis was on the word *should* rather that *could* so the actual prejudices of the children would come out. At the end of the list, there were two fill-in-the-blank statements: (a) "Career you would *most like* to have _____," and (b) "Career you think you *will have* _____."

Procedure

The same procedure was followed at both schools. Children were given the survey during their art classes. Each job title was read aloud to each class to ensure that there were no titles with which the children were unfamiliar.

The children were asked in filling in the first blank at the end of the list to think of the career they would follow if there were no obstacles of any kind (i.e., they could be whatever they wanted to be). For the second statement, the children were asked to try and be realistic (i.e., stating what they thought they really would do). The children were told the two answers could be the same or different. They were then given crayons and drawing paper and asked to draw themselves in the occupation they would most likely have.

Statistical Analysis

The data were analyzed by percentage of response according to gender, grade level, and socioeconomic differences. A 60% concurrence level was designated *a priori* to the research as a cutoff standard for "agreement" between groups. This figure was a compromise by the researchers between the Labor Department's definition of a nontraditional occupation for women as one in which its work force was 75% men and the Shepard and Hess (1975) use of 50% or more agreement to designate a liberal or conservative attitude toward occupational sex role stereotyping. Significant statistical differences at the 0.01 and 0.05 level were noted through chi-square analysis.

Results

In terms of actual percentage, third graders were in agreement on three times as many occupations appropriate for both sexes as sixth graders. Third graders agreed that men and women were equally suited to be writers, elementary teachers, school principals, pharmacists, musicians, artists, cashiers, salespersons, high school teachers, bank tellers, reporters, and cooks. Sixth graders had a 60% or better agreement only for the occupations of writer, elementary teacher, musician, and artist as appropriate for either gender.

The two grade levels agreed that males were still preferred for some predominantly male-dominated vocations. Sixth graders agreed that males were best suited to be television repairpersons, auto mechanics, engineers, park rangers, plumbers, cabinetmakers, construction workers, soldiers, fire fighters, or carpenters. The third graders agreed that men should be employed as television repairpersons, farmers, auto mechanics, surveyors, astronauts, electricians, plumbers, construction workers, truck drivers, soldiers, fire fighters, and carpenters.

The list of agreed-upon occupations for women was much smaller for both grades. Sixth graders concurred that women should be employed as secretaries, nurses, telephone operators, librarians, and sewing machine operators. The third graders only agreed on the occupations of secretary, nurse, and sewing machine operator.

Chi-square analysis showed a number of significant differences between the various groups. Sixth-grade girls were very willing to accept both men and women in sixteen traditionally male occupations; sixth-grade boys differed significantly as a group from the girls and thought only males should be employed in the occupations of: auto mechanic, architect, electrician, carpenter, doctor, school principal, astronaut, pilot, pharmacist, professional athlete, lawyer, dentist, truck driver, police officer, radio announcer, and reporter. Sixth grade boys also differed significantly from sixth-grade girls by indicating that the occupations of dental assistant and cleaner/servant should be "for women only."

For third graders the only significant differences between males and females were in the occupations of doctor, professional athlete, astronaut, and park ranger. Girls were more liberal than boys in checking who should work in these occupations.

When young girls were compared to older girls, there was only one occupation, lawyer, in which there was a significant difference. The older girls were more willing to accept both men and women as lawyers.

When the third-grade boys were compared to the sixth-grade boys, there were significant differences in seven occupations: waiting on tables, cashier, radio announcer, librarian, salesperson, cleaner/servant, and reporter. In each case, the older boys were more traditional and conservative in their choices.

In another aspect of the survey, the third-grade males all chose as their career choices traditionally male occupations. There was no difference for these boys in their choice of occupations they would most like to have and those they thought they would later have.

Approximately 25% of the third-grade girls listed nontraditional female jobs as the occupations they would most like to have. Half of these girls, however, changed their answers to traditionally female or neutral occupations when asked what occupation they thought they would have later.

A similar pattern occurred with sixth-grade students. Boys either chose a very traditional male job or an occupation connected with the arts. In contrast, more than 40% of sixth-grade females chose nontraditional jobs. Of these girls, 26% changed their choice to a more feminine-oriented occupation as the occupation they would eventually have. It is significant that even though one-fourth of the sixth-grade girls changed their minds about what occupation they would eventually have, nontraditional occupations were the final choices of 30% of these girls, a much larger figure than that for third-grade girls (13%).

Because the schools were different in their socioeconomic composition, it was possible to examine the differences that background might have. Looking first at the percentages, sixth graders in both schools felt that men and women were equally suited to be writers, pharmacists, and musicians. There was also agreement that men should be television repairpersons, electricians, members of the clergy, plumbers, construction workers, soldiers, fire fighters, and carpenters. Students in both schools concurred that women should be secretaries, nurses, phone operators, librarians, and sewing machine operators.

Third graders in both schools agreed that both men and women could become writers, elementary school teachers, pharmacists, musicians, artists, cashiers, salespersons, high school teachers, and reporters. Third graders in both schools also agreed that men should be television repairpersons, farmers, auto mechanics, surveyors, astronauts, engineers, electricians, plumbers, construction workers, truck drivers, soldiers, fire fighters, and carpenters. There was further agreement that women should be secretaries and nurses. Chi-square analysis revealed only one significant difference between the third graders in the two schools. This was for the career of school principal. The children from lower socioeconomic backgrounds believed this was a male-only occupation.

There were eight significant differences between the sixth graders of the two schools. The children from lower socioeconomic backgrounds were generally more conservative and preferred males in the occupations of doctor, engineer, chef, carpenter, school principal, scientist, astronaut, and elementary teacher.

Discussion

Several of the findings observed in this study merit further elaboration. First, the large number of differences between sixth-grade males and females over whether females should engage in sixteen traditional male occupations is noteworthy. The finding that sixth-grade males, in contrast to sixth-grade females, did not agree that females should work in these occupations seems to contradict the findings of Schlossberg and Goodman (1972) and Gregg and Dobson (1980), in which very few differences were found between the sexes over occupational roles. The discrepancy between this study and previous

studies may be explained, however, by the very wide choice of occupations in this study, many of them purposely very traditionally male or female oriented. The influence of a different region and population could also be important factors.

The greater willingness of third-grade boys than sixth-grade boys to accept men and women in more occupations deserves some comment. By the sixth grade, boys are beginning to move into adolescence. Associated with this move is a search for identity and peer pressure to distinguish gender roles. This pressure possibly influences boys not only to close off avenues of career exploration for themselves, but mentally to limit girls, too.

Regarding the girls in this study, it is significant that sixth-grade girls chose nontraditional jobs as occupations they would most like to have considerably more often than third-grade girls (i.e., 40% versus 25%). It may well be that as girls become aware of the world of work, they feel freer to explore it mentally. The discouraging part of this finding is that so many girls resigned themselves to having a traditionally female or neutral occupation (i.e., 60% of sixth graders and 75% of third graders). While it is encouraging to realize that some of the girls are considering nontraditional alternatives, the findings of this research concur basically with Burlin's (1976) conclusion that most girls do not feel free to pursue a nontraditional career.

An unexpected finding of this study was the importance of role models and career consideration, a discovery revealed in the significant difference between opinions of third graders in the two schools over the career of school principal. One school had just replaced a male principal with a new female principal. The other school had had a male principal for over 10 years. The change in gender was probably responsible for the difference noted between schools. Whereas role models may not encourage children to consider an occupation, they do make such explorations possible.

Finally, the discovery that children from lower socioeconomic backgrounds were more conservative is not surprising. This finding is in line with research reported by Mussen, Conger, and Kagan (1979) on the effects of social class, sex, and peer group influences on the choice of vocations. A finding of this nature emphasizes the continued need to work more intensely with children from lower socioeconomic backgrounds in exploring career options.

Recommendations

There are no pat solutions to the problem of overcoming occupational sex-role stereotyping. The results of this study, however, suggest several directions that elementary school counselors and educators may take in working with children on career awareness.

1. One of the most obvious ways of working with children of this age is through play. As we have suggested, art may be incorporated as an adjunct technique to help boys and girls get more in touch with their vocational aspirations. Art is viewed in most schools as a type of creative play. When children express themselves in their art work, especially about vocations, they are leaving a paper trail that the counselor may use with the child in career exploration. By examining collected art work on careers, the counselor helps make an art as well as a discipline out of this important aspect of counseling. Other art forms (e.g., poetry, music, drama) may also be used by the counselor to help elementary school children become more in touch with themselves and the world of work.
2. Another facet of career exploration, which requires both an artistic and a diplomatic touch by the school counselor, is helping to eliminate subtle or blatant occupational prejudices in teachers and other school personnel. During in-service workshops the artistic works of children drawn or composed in career exploration classes can be displayed and discussed, giving teachers and other personnel an opportunity to examine their own biases.
3. A third recommendation that this study suggests is to work artistically with groups of all boys or all girls in exploring career fantasies. Female groups may be used to help girls reinforce one another on career aspirations. In a similar manner, boys, especially boys from lower socioeconomic groups, may benefit greatly by interacting with visiting tailors, chefs, or designers invited in by the counselor. These careers can be examined by boys who may have traditionally not explored such occupations because of peer or family pressure.
4. Finally, counselors can help make career exploration an art by forming committees within the school setting of parents, teachers, and other interested personnel who can make suggestions on the career exploration aspect of the counseling program. Just as most artists use a variety of brushes and colors on their canvases to create works of art, so the counselor may be equally artistic by using a variety of interested personnel to help children explore careers. New ideas and the reshaping of old ideas may result in a blending of talent that not only benefits the children, but the counselor and the school as well.

Conclusion

To truly effect change, the child's whole school environment must be involved. Support personnel must be included, as well as administrators, teachers, and

counselors. There must be careful planning and a system of regular follow-up. The planning and work involved are worth the effort, however, when the alternative is considered. With occupational sex stereotyping, both sexes lose. We need scientists with "polished nails" if they choose. Girls need to know they can achieve and still wear gardenias in their hair. We need strong men teaching gentleness to children. Boys need to know they can be caring and still drive trucks if they choose. The keyword is *choice*.

As this study shows, some children of both sexes still have less choice than others because of socialization patterns associated with gender, socioeconomic class, and age. There is still a long way to go before most occupations will be considered "sex-free." However, by incorporating art, as well as other artistic awareness techniques (e.g., role play) (Schmidt, 1976), into career guidance curriculums, it is hoped that children of both sexes may feel freer to choose vocations of interest to them and in the process become more completely human.

References

Burlin, F. (1976). Sex-role stereotyping: Occupational aspirations of female high school students. *School Counselor, 24*, 102–108.

Bucknell, S., & Gray, F. (Eds.). (1981). *Nontraditional jobs for women: A resource guide for Connecticut women and career counselors*. Hartford, CT: Permanent Commission on the Status of Women.

Conger, J. J. (1981). Freedom and commitment: Families, youth, and social change. *American Psychologist, 36*, 1475-1484.

Cramer, S., Wise, P., & Colburn, E. (1977). An evaluation of a treatment to expand the career perceptions of junior high school girls. *School Counselor, 25*, 124–129.

Bureau of Labor Statistics. (1981). *Employment and Earnings*. Washington, DC: U.S. Department of Labor.

Farmer, H. S. (1978). Why women choose careers below their potential. In L. S. Hansen & R. S. Rapoza (Eds.), *Career development and counseling of women*. Springfield, IL: Charles C Thomas.

Gregg, C., & Dobson, K. (1980). Occupational sex stereotyping and occupational interests in children. *Elementary School Guidance and Counseling, 15*, 66–74.

Mussen, P. H., Conger, J. J., & Kagan, J. (1979). *Child development and personality*. New York: Harper & Row.

Navin, S. L., & Sears, S. J. (1980). Parental roles in elementary career guidance. *Elementary School Guidance and Counseling, 14*, 269-277.

Patterson, L. (1973). Girl's career—Expression of identity. *Vocational Guidance Quarterly, 21*, 268–274.

Remer, P., & O'Neill, C. (1980). Clients as change agents: What color could my parachute be? *Personnel and Guidance Journal, 58*, 425–429.

Schlossberg, N., & Goodman, J. (1972). A woman's place: Children's sex stereotyping of occupations. *Vocational Guidance Quarterly, 20*, 266–270.

Schmidt, J. A. (1976). Career guidance in the elementary school. *Elementary School Guidance and Counseling, 11*, 149–153.

Shepard, W. D., & Hess, D. T. (1975). Attitudes in four age groups toward sex role division in adult occupations and activities. *Journal of Vocational Behavior, 6*, 27–39.

Wolleat, P. L. (1979). School-age girls. *Counseling Psychologist, 8*, 22–23.

Worell, J. (1980). Psychological sex roles: Significance and change. In J. Worell (Ed.), *Psychological development in the elementary years*. New York: Academic Press.

Chapter 7
Counseling Issues in a Changing World of Work

Issues for elementary school counselors to consider about a changing world of work:

1. Create several classroom activities that will help students develop career awareness. Discuss the importance of increasing career awareness among elementary school children.
2. How can counselors reduce occupational sex-role stereotyping among elementary school children?
3. What might elementary school counselors do to help teachers incorporate career awareness activities into regular school subjects?
4. Discuss the pros and cons of having a career day in elementary schools?
5. Discuss the following statement: "Teachers need to concentrate on the basic subjects and don't have time for extras such as career education."
6. What kinds of career awareness activities can be used with children in kindergarten and first grade?
7. How can computers and other forms of technology be incorporated into career education programs at the elementary school level?
8. How can parents be involved in classroom programs of career education? What might parents gain from their participation in such programs?
9. What ways can elementary school counselors use to assess the effectiveness of career education programs?
10. How might activities for improving self-concept be incorporated into career education programs? What theoretical support is available for incorporating self-concept activities into career education?