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ABSTRACT

Changes in the employment patterns of psychologists have been predicted and confirmed by various researchers. To explore the training and employment patterns of doctoral level counseling, developmental, educational, and school psychologists, data were gathered from 45 doctorate-granting universities, 55 comprehensive colleges and universities, and the second 100 largest corporate employers. In addition, the linkage strategies used by these respondents were examined. Participants from these training programs and industrial corporations completed questionnaires on their anticipated training and employment patterns for selected behavioral scientists over the period 1983-1988, and on possible strategies to cope with changing employment patterns. Usable data from 45 academic respondents and 13 industrial respondents indicated that admission patterns varied widely among the different training programs, and suggested that these programs required varying numbers of years of graduate training. Employment patterns for the selected doctoral level psychologists indicated that inexperienced Ph.D. psychologists would find no employment in industry, but that new Ph.D.'s in counseling and school psychology would have more employment opportunities in academia than would developmental and educational psychologists. The findings indicate that training programs are doing little to enhance their students' marketability with industry. (Seven recommendations for enhancing graduates' marketability with industry are given.) (NRB)

PSYCHOLOGISTS IN EDUCATION AND INDUSTRY: A LINKAGE

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Since 1976, the American Psychological Association has conducted Human Resources Surveys which provide information on employment activities, and other characteristics of APA members (Stapp & Fulcher, 1982; Stapp & Fulcher, 1983; Stapp, Fulcher, Nelson, Pallak & Wicherski, 1981). Stapp and Fulcher (1983) point out that university employment for psychologists is decreasing, while independent practice and employment in business, government, and other related settings is increasing. In fact, they note a steady increase in percentages of doctorate and masters level psychologists in business, government and other settings (e.g., doctorate level employment was 12% in 1976, 13% in 1978, and 15.9% in 1982). Syverson (1982) reports that the percentage of doctorates in psychology who plan to seek employment in business or industry has doubled between 1970 and 1981.

Colleges of Arts and Science and Colleges of Education have produced large numbers of Ph. D.s in psychology (NCES, 1980; NRC, 1981; Stapp, Fulcher, Nelson, Pallack & Wicherski, 1981),

even when faced with warnings about oversupply (e.g., Little, 1972). However, the numbers of applicants accepted in psychology Ph. D. programs have decreased from 1978 to 1982 (Stapp & Fulcher, 1983). This decrease was accompanied by an increase in Ph. D. employment in business, government, and other related settings from 1978 to 1982 (Stapp & Fulcher, 1983). Thus, fewer students beginning Ph. D. work in psychology and greater employment in business, government, and other related settings seem to be two major, recent trends.

Changes in employment patterns of psychologists have been predicted (Banikiotes, 1975, 1977, 1980; Cartter, 1971; NRC 1967, 1980) and confirmed (Alcorn & Nicholas, 1983; Stapp & Fulcher, 1982, 1983). Employment patterns of psychologists, overall, may be described as reflecting the marketability of psychologists' skills, sex differences in employment, more opportunities for ethnic minorities, shifts from academic to nonacademic settings, and fewer new Ph. D. psychologists entering the job market in coming years (Stapp & Fulcher, 1983). The evolution of training and employment patterns for counseling psychologists has been described as well (e.g., Alcorn & Nicholas, 1983; Banikiotes, 1975, 1977, 1980). School psychologists have reported expanded roles and more potential employment settings (Kicklighter, 1976; Ramage, 1979; Winikur, 1982). Thus, the question where are jobs in psychology likely to be found in the near future is important for psychology students, as well as training programs. The present paper focuses on educational, counseling, school and developmental Ph. D. psychologists, since many such training programs are often found in the same departments, particularly in Colleges of Education.

Stapp and Fulcher (1983) reported that the developmental and educational Ph. D. psychologists are more typically found in academic settings (73% of the APA members surveyed in both areas) than counseling and school Ph. D. psychologists (35% and 21%, respectively). These investigators also found that the Ph. D. level psychologists surveyed in the areas of education, counseling, developmental, and school were employed in business, government, and other related areas in the following percentages, respectively, 9.9%, 9%, 7.7%, and %.6%. These data indicate that developmental and edcuational doctoral level psychologists find more employment in academia, while educational and counseling psychologists find more employment in business, government and other related areas.

Newsome and Stilwell (1983) examined the academic and industrial employment opportunities for counseling, developmental, educational and school Ph. D. level psychologists, in addition to gathering information on the strategies used by both industry and academia to facilitate industry/psychology linkages. These investigators surveyed the 100 largest research universities and the 100 largest corporate employers. Their results inidcated that among their responding academic employers for the 1981-1986 period, the average number of open academic positions for experienced and inexperienced Ph. D. level psychologists was estimated to be 1.27 for counseling psychologists, 1.23 for developmental psychologists, .89 for educational psychologists, and 1 for school psychologists. Newsome and Stilwell's study revealed a similarly bleak employment pattern for the Ph. D. psychologists in industry for 1981-1986 -- .23 for counseling psychologists, .042 for developmental psychologists, .313 for educational psychologists, and zero for school psychologists. They

also examine linkage strategies and found that industry recommended: (1) student enrollment in industrial administration courses (33% of the respondents), (2) establishment of internships in industrial sites (25%), and (3) advisement of students about the changing academic marketplace (23%). In contrast, academic respondents endorsed the following linkeage strategies: (1) advisement of students about the changing marketplace (89%), (2) encourage enrollment in a broader curriculum to enhance the graduates' employability (64%0, (3) offer courses in consultation skills (38%), and (4) offer professional courses at human service agencies (34%)>

The dismal employment opportunities represented in Newsome and Stilwell (1983) may be, in part, an artifact of their sample, since the data applied only to the 100 largest research universities and the 100 largest corporate employers. Perhaps academia's and industry's employment needs for these selected psychologists may be better understood through examination of smaller, more functionally specific academic and industrial populations. Stapp and Fulcher (1983) examined research universities, four-year colleges, and other academic settings and found higher employment rates for thes areas of psychology than did Newsome and Stilwell. Alcorn and Nicholas (1983) found that counseling psychology Ph. D. graduates (7.9%0 between June, 1981, and June, 1982, were employed in consulting firms and businesses. Stapp and Fulcher's data indicating higher employment of thse psychologists in business, government, and other related settings was higher than found by Newsome and Stilwell, perhaps due to the inclusion of government and similar settings. The purpose of the present study was to examine the academic and industrial employment opportunities for counseling, developmental, educational and school

Ph. D. level psychologists in other academic settings and in smaller industries than the authors previously examined. ... in, the present study did not consider the employment of these applied behavioral scientists in government. In addition, the linkage strategies used by the academic and industrial respondents were examined.

METHOD

Subjects

Two distinct populations provided data for this study of training and employment patterns of counseling, developmental, educational and school psychologists. Forty-five doctorate granting universities (Carnegie I and II) and 55 comprehensive universities and colleges (Carnegie, 1976) were surveyed. The second-100 largest corporate employers made up the industrial sample (Forbes, 1983). These samples were selected in order to collect information on specialized or smaller organizations, which probably have different employment patterns and linkage strategies than the two samples used in the previous study (Newsome & Stilwell, 1983).

Instrumentation

The authors prepared a two-page questionnaire which had two purposes. The first objective was to gather information on the graduate training programs' and the industrial employers' anticipated training and employment patterns over the period 1983-1988 for selected behavioral scientists. Specifically, the responding graduate training programs were asked to indicatge the number of graduate student openings for each year, the number of current doctoral students in each area, the number of anticipated gradautes, the number

of positions for "new" professionals, the number of openings for experienced psychologists, and the number of anticipated retirements. The second objective was to gather information on academic-industrial linkage strategies. The authors prepared a list of 20 possible strategies to cope with changing employment patterns for selected applied behavioral scientists. Each participant was asked to indicate which of the 20 coping strategies they had used. Space was provided for "other" responses and for the participants to ask for a copy of the report.

Procedures

A cover letter and the survey questionnaire were sent to the Department Chair in academia or the the Vice President/Director of Human Resources in industry. Based upon the experience gained from Newsome and Stilwell (1983) the basic questionnaire was redesigned to gather only appropriate information from academia or from industry. A cover letter in which the purpose of the study was restated and the same questionnaire was sent to responding academic institutions, who had not completed the original questionnaire. Nonrespondents will receive a follow-up questionnaire within the next month. Time did not allow follow-up with academic and industrial nonrespondents prior to this report.

RESULTS

Descriptive statistics are presented to characterize the training and employment patterns in academia and in industry. Training patterns include those academic respondents which have doctoral level training programs for the four selected applied behavioral scientists.

Employment patterns include anticipated hiring and retirement decisions in academia (Carnegie I and II) in the second largest 100 corporate employers (Forbes, 1983) for the period 1983-1988. Typically the department chair responded to the academic questionnaire and the human resource manager or a representative completed the industrial questionnaire. The data were collected from 56 of the 100 doctorate-granting and comprehensive universities and colleges. Thusfar, 16 of the 100 corporate employers have responded to the survey. Eleven questionnaires of the academic respondents were not used in the data analysis, since the directions were misunderstood. and three of the corporate respondents indicated that they were unable to complete the questionnaire. Thus, useable data were obtained from 45 academic respondents and 13 industrial respondents. The frequencies, means, and percentages are presented in the following tables.

Table 1 presents data on the training patterns planned for counseling, developmental, educational, and school psychologists for

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Insert Table 1 about here

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the 1983-1988 period. The number of responding programs for counseling, developmental, educational, and school psychology was 13, 9, 2, and 13, respectively. Admission patterns vary widely among the different training programs, ranging from zero to 13. On the average, educational, counseling, school, and developmental psychology admit 7.4, 5.34, 4.80, and 2.45 per year. The average number of graduates from each of the four programs appears to approximate the number of students admitted to the programs, with the exception of educational

psychology which is graduating fewer students than the two program appear to be admitting. However, this two program sample may not be representative of the educational psychology programs in our total sample. In contrast to the present results, Newsome and Stilwell (1983) found that school psychology appeared to be graduating about twice as many students as the programs were reportedly admitting, in their sample of the 100 largest research universities. . This inconsistent graduation pattern for school psychology might be related to the greater emphasis on full-time enrollment by school psychology programs (Newsome & Stilwell, 1983; Stroup & Benjamin, 1982) or to the establishment of new school psychology programs. The reasons for these inconsistent results may relate also to the differing natures of the two samples. However, the present data do not allow determination of the reasons for admissions and graduation discrepancies for the psychology programs examined.

Table 2 presents data on the academic employment patterns planned for counseling, developmental, educational, and school

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Insert Table 2 about here

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psychology for the 1983-1988 time frame. The range of employment opportunities is from zero to four, probably reflecting the different program sizes at the selected institutions. On the average, all four program types anticipated employing approximately the same number of "new" doctoral level psychologists as faculty members as they anticipated employing "experienced" psychologists. Overall, the typical professional training program anticipates hiring as few as zero to as many as four psychologists during the five year period

included in this study. The retirement situation shown in Table 2 indicates the anticipated retirments range between zero and three in the four different training programs for the 1983-1988 period.

Table 3 presents data on the corporate employment patterns for counseling, developmental, educational, and school psychologists for the time frame under study. The table reveals no employment opportunities for the recently graduated, inexperienced doctoral level psychologist. Experienced psychologists in counseling and in

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Insert Table 3 about here

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educational psychology have the greater employment opportunities in industry, while developmental and educational psychologists appear to have no employment opportunities with the second-100 largest corporate employers. These data suggest that there will be no retirements for the selected behavioral scientists over the five year period used in this study.

The respondents were also asked to indicate which of the linkage strategies presented on a checklist they used to cope with the changing employment patterns in academia and in industry. The academic programs appeared to be more involved in the changing marketplace (Figure 1). Academic institutions recommended strongly the use of the following linkage strategies: advising students about the shifting marketplace (84% of the respondents); encouraging a broader curriculum to enhance the graduate's job potential (51%); creating and offering courses on consulting skills (49%); appointing agency directors and business leaders to adjunct or volunteer faculty roles (44%), and establishing multidiscipline internships in human

service agencies(42%). In contrast, the corporate employers appeared to recommend strongly student enrollment in industrial administration coursework (46%), in-service courses at corporate sites (38%0, advising students about possible employment patterns (31%), and offering courses in counseling, individual differences, and human relations. The two groups of respondents appeared to agree on the need for students to take more courses in industrial administration.

DISCUSSION

The foregoing data offer a picture of training and employment patterns for four selected doctoral level psychologists -- counseling, developmental, educational, and school -- as well as information on linkage strategies used by selected academic institutions and corporations. Only 45 academic respondents of the 100 surveyed actually returned useable questionnaires. Thus, the proportion of training programs in each area of our sample may not be representative of the total sample. Similarly, the corporate respondents returned only 13 useable questionnaires which may also be non-representative. Additional data from the pool will be collected in a subsequent follow-up.

The admissions data for the academic institutions revealed a wide range of rates, probably reflected of the human and financial resources of the responding institutions and the increased program involvment in APA accreditation. The ratio of average program openings to the average number of students suggest that these training programs require varying numbers of years of graduate training (e.g., counseling psychology reports admitting about five students per year and carrying a student load of about 14 students per year; school

psychology reportes admitting about five students per year and carrying a load of about nine students per year). The varying numbers of years required for program completion may be due to greater program involvment in accreditation, parttime enrollment, or greater emphases upon broader or upon more specialized coursework. The reasons for the various patterns are not determinable from the present data.

Employment patterns for the selected doctoral level psychologists appear to reflect a broad spectrum of considerations. It appears that inexperienced Ph. D. psychologists will find no employment in industry, nor will experienced developmental and school psychologists. Only experienced Ph. D. counseling and educational psychologists will find employment within the present corporate sample (averages of 2.23 and .43, respectively). Corporate respondents report that no psychologists will be retiring during the present five year period, while academia reports 33 retirements within the sample. Overall, it appears that the present academic sample will hire 79 psychologists, thus increasing their present staff by .42. It appears that new Ph. D.'s in counseling and in school psychology will enjoy more employment opportunities in academia than will new Ph. D.'s in developmental and in educational psychology. However, the overall pattern is not supportive of either new or experienced counseling, developmental, educational or school Ph. D. psychologists securing employment in the present academic sample institutions for the 1983-1988 period. Indeed, the current sample reports that 25.85 counselnig psychology Ph. D.'s will enter the job market during this time period, while only .2 academic jobs in counseling psychology will be available. The patterns for developmental, educational, and school psychology graduates are similar (12.56 to 1.27, 3.6 to 1.67, and 3.43

to 1.16, respectively). Overall, school psychology and educational psychology Ph. D. graduates enjoy slightly more job opportunities in this academic sample than will counseling or developmental Ph. D. graduates. Counseling psychology Ph. D. graduates appear to have the poorest chances of obtaining employment opportunities with the present academic sample. These patterns are complemented by the job opportunities in the corporate sector, which reports a demand only for counseling and educational psychologists. Stapp and Fulcher (1983) had similar findings. Industry, however, reports only a need for experienced counseling and educational psychologists. One corporate employer in the study commented that "Ph. D. psychologists may or may not possess the competencies that we need. We hire by competencies, not by credentials." Other corporate respondents in the present study suggested the following competencies which will enhance psychologists' employment potential in industry: can develop skills and interest inventory systems, can perform selection research, can perform opinion survey research, can perform performance based training, can develop and validate tests, can validate selection tests for employment upgrading, and can develop programs to improve the utilization of employees' abilities and ideas -- organizational development and team building. It thus appears that those counseling and educational Ph. D. psychologists that are willing and able to "market" themselves to industry will secure employment with industry.

Stapp and Fulcher (1983) predict that diversity in settings, types of positions, and work activities will continue to increase for psychologists. At the same time, APA accreditation of counseling and school psychology training programs seems to be moving these fields toward greater uniformity and less specialty disctinctions (Alcorn &

Nicholas, 1983; Newsome & Stilwell, 1983). Stapp and Fulcher (1983) describe the employment of psychologists as reflecting the marketability of psychological skills, while at the same time, it appears that training programs are not specifically preparing their students with strategies for marketing themselves to industry.

Sanders (1983) interviewed participants from successful programs involved education and industry working together. The most frequent descriptors of such programs were as follows: for communications between education and industry, the training program was the point of contact; for industry, flexible educational programs enjoyed the greater attractiveness; for both parties, commitment, trust, and mutual understanding was paramount; and, for both parties, adequate funding was a must. The overall recommendations stemming from these interviews was to expose students in training programs to the corporate world.

The data presented in this study on training and employmebnt patterns and on linkage strategies seem to indicate that training programs are doing little to enhance their students' marketability with industry. Tuttle (1983) and Newsome and Stilwell (1983) seem to agree that psychologists have the skills to enhance industry in a number of ways. Tuttle delineates basic skills which are common to doctoral level psychologis, e.g., a fundamental knowledge of perception, attitude change and motivation which can be used to enhance productivity awareness at all organizational levels, fundamental skills in training, counseling, and communications which can be used to facilitate organizational restructuring, introduction of new technology, stimulation of employee decision-making, and fundamental skills in job analysis and psychometrics which may be used

to develop, implement, and evaluate corporate measurement systems. In sum, Tuttle (1983) and Newsome and Stilwell (1983) urge that industry and education cooperate to learn how each can benefit from the other's skills and needs. A positive start can be found in implementing the more cost effective of these recommendations:

1. adopt an information management model for collection of data on programs (e.g., how many are leaving the state? how many are finding employment in academic settings? mental health agencies? government? industry? and private practice?);
2. adopt a policy for planning program revision on a three to five year schedule (e.g., add learning experiences in consultation, family systems, ethnographic analysis, and industrial administration and drop courses which are no longer needed by the graduate program);
3. prepare students to advertise their skills, interests, and aptitudes rather than their specialty labels (e.g., conduct workshops on how to present skills to non-traditional employers);
4. invite mentors from non-academic settings to work with selected program students (e.g., discuss different expectations for industry and for academia);
5. develop more practica and internships in industrial settings;
6. advise graduate students to expand their curricula and thereby enhance their saleabiltiy with industry and other non-academic employers;
7. establish jointly sponsored three consituent advisory

program groups (i.e., include representatives from academia, professional groups, and industry).

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Table 1. Annual means and ranges for supply of selected doctoral level psychologists enrolled at the 100 largest research universities for the 1983-1988 period.

	New Admissions	FT and PT PhD Students	Anticipated Graduates
Counseling Psychology N = 13	X = 5.34 1 to 10	X = 14.34 1 to 35	X = 5.17 1 to 10
Developmental Psychology N = 9	X = 2.45 1 to 4	X = 4.98 2 to 15	X = 2.51 1 to 9
Educational Psychology N = 2	X = 7.4 2 to 13	X = 15.6 2 to 29	X = 3.6 1 to 7
School Psychology N = 12	X = 4.80 1 to 9	X = 8.90 1 to 19	X = 3.43 1 to 8

N = Overall 43 different research universities responded.

Table 2. Annual means and ranges for demand of selected doctoral level psychologists employed by the 100 largest research universities for the 1983-1988 period.

	Openings for Inexperienced PhD	Openings for Experienced PhD	Anticipated Retirements
Counseling Psychology N = 16	X = .20 0 to 1	X = .15 0 to 1	X = .18 0 to 1
Developmental Psychology N = 15	X = .02 0 to 1	X = .09 0 to 1	X = .08 0 to 1
Educational Psychology N = 6	X = .10 0 to 1	X = .23 0 to 1	X = .23 0 to 1
School Psychology N = 16	X = .17 0 to 1	X = .06 0 to 1	X = .06 0 to 1

N = Overall 43 different research universities responded.

Table 3. Annual means and ranges for demand of selected doctoral level psychologists employed by the 100 largest industrial employers for the 1981-1986 period.

	Openings for Inexperienced PhD	Openings for Experienced PhD	Anticipated Retirements
Counseling Psychology	X = 0 0 to 0	X = .23 0 to 3	X = .021 0 to 1
Developmental Psychology	X = 0 0 to 0	X = .042 0 to 1	X = .021 0 to 1
Educational Psychology	X = .125 0 to 3	X = .188 0 to 5	X = 0 0 to 0

Figure 1. Percentage of academic programs and coporate employers using selected strategies to cope with the changing employment patterns of selected applied behavioral scientists

Academic Employer	Industrial Employer	Recommended Linkage Strategy
	31	Advise employees about possible employment patterns
84		Advises students about possible employment patterns
18		Offers seminars on gaining employment in government/business
9		Offers courses in setting up private practice
49	23	Offers course in consulting skills
11	38	Offers courses at government/ business setting
31		Offers courses at human service agency setting
20	8	Offers course in personal job seeking in traditional and nontraditional settings
11	31	Offers selected courses to potential employers (e.g., research methods, intro to counseling, individual differences
44	8	Appoints business/agency leaders to adjunct/volunteer faculty
40	15	Establishes internship sites in selected industrial sites

42		Establishes multidiscipline internship in human service agencies
36	46	Encourages students to take courses in business administration
51	8	Encourages broader curriculum to enhance job potential
31		Encourages more focused curriculum to enhance job potential
18		Requires "refereed publications" during graduate training program
7	8	Supports sabbaticals or "personnel loans" between academia and school districts
4	8	Supports sabbaticals or "personnel loans" between academia and human service agencies
7	8	Supports sabbaticals or "personnel loans" between academia and business/government
18		Recruits foreign students
11		Reduce program size
62	23	Wants copy of results

N = Data obtained from 42 research universities and 13 industrial employers.

NOTES

1. Report of the Professional Employment Committee funded by American Educational Research Association Division E.

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