The minimum educational requirement of a profession is established on the basis of the general knowledge and skills needed to understand and apply the science as well as the art of practice. Many of the health professions, occupational therapy included, have set the bachelor's degree as the minimum requirement. Alternate postbaccalaureate routes of entry, such as those leading to a certificate or a master's degree, are often developed to attract college graduates to the profession. This allows us (a) to take advantage of a pool of educated persons who can contribute to the advancement of the profession and (b) to ease personnel shortages. These entry level programs have the same educational objective as bachelor's programs, namely, to prepare the student for general practice in the field. In addition, however, some programs seek to supplement this fundamental objective by imparting specialized practice skills, competence in administration or supervision, or beginning research skills. These goals are generally viewed as being "graduate" in nature and akin to those established for advanced professional programs at the master's level and offered for experienced practitioners.

Despite the existence of these diverse basic and advanced professional programs, few studies have been conducted to examine program outcomes. One potential benefit of such an investigation would be to shed light on the careers of individuals entering professional practice with different kinds of academic preparation. This information, in turn, would be helpful in making decisions regarding education, such as changing the minimum educational requirement or revising program level goals. The study reported here was undertaken specifically to investigate the influence of different patterns of occupational therapy education on professional activities.

Literature Review
The seminal study (Rogers & Mann 1980a, 1980b) exploring the relationship between the educational preparation of occupational therapists and their professional activities indicated that the achievements of graduates of master's programs in research, practice, education, publication, organizational activities, and health care policy exceeded those of graduates of baccalaureate and postbaccalaureate certificate programs. Differences were not discerned between the contributions of master's graduates of basic occupational therapy programs, advanced occupational therapy programs, and master's programs in fields other than occupational therapy. Conflicting evidence was recently presented by Brayley (1986), who found that compared with basic master's graduates, advanced master's graduates wrote more papers, presented more conferences and workshops, and made more
research presentations. However, these differences between basic and advanced master’s graduates were not tested for statistical significance.

In view of the variation between graduates of different colleges and universities identified by Rogers and Mann (1980a, 1980b), Clark, Sharrot, Hill, and Campbell (1985) confined their study to alumni of the University of Southern California. The population was restricted to graduates of basic professional programs. Compared with baccalaureate alumni, the master’s alumni held more offices in professional organizations and received more professional honors, published more papers in journals other than the American Journal of Occupational Therapy, gave more presentations at professional conferences, patented more assistive devices, constructed more marketable assessments, and wrote more grant proposals that were funded. These differences were not tested for statistical significance because the criteria for chi-square analysis were not met. A significant difference favoring the master’s graduates was found with regard to the number of articles published in the American Journal of Occupational Therapy.

A national comparison of bachelor’s and master’s basic professional graduates was conducted by Gilkeson and Hanten (1984). Although group differences were detected with regard to some characteristics, no trends were discernible over the 6 years after graduation. At various times after graduation, the master’s group reported higher salaries, more manuscripts submitted for publication, and more frequent workshop and program presentations. Contributions in terms of the presentation of professional papers and leadership in and service to occupational therapy at the district, state, or national levels were equivalent. The amount of time spent on professional activities was very low for both types of graduates.

In summary, these studies present conflicting evidence concerning educational background and professional activities. The contributions of basic master’s graduates have been found both to exceed (Clark et al., 1985) and to be equivalent to (Gilkeson & Hanten, 1984) those of bachelor’s graduates. Similarly, comparisons between basic and advanced master’s graduates have yielded both similarities (Rogers & Mann, 1980a, 1980b) and differences (Brayley, 1986).

Method

Five educational groups were surveyed and compared. The bachelor’s group was made up of therapists with a bachelor’s degree in occupational therapy and no higher degree. The certificate group consisted of therapists with a postbaccalaureate certificate in occupational therapy and no degree higher than a bachelor’s. Therapists holding a bachelor’s degree in a field other than occupational therapy and a master’s degree with a major in occupational therapy formed the basic master’s group; those with bachelor’s and master’s degrees in occupational therapy formed the advanced master’s group. Membership in the other master’s group required a master’s degree in a discipline other than occupational therapy and a bachelor’s or certificate in occupational therapy.

Subjects

Selection. The population was identified as professionally educated therapists certified by the American Occupational Therapy Association (AOTA) on or before 1979. This cutoff year was selected to provide a sample of therapists who were established in their careers. A total of 250 subjects was sought—50 in each educational group. Therapists from each of the five educational groups were randomly selected by the AOTA Research Information and Evaluation Division (October 1985). Letters explaining the study and requesting participation were sent to the first 50 therapists on each educational list. A questionnaire along with a stamped and addressed return envelope was mailed to those returning the reply card affirmatively. Replacements were drawn from the appropriate educational list for therapists who declined to participate. Although 50 subjects in each of the groups agreed to complete the survey, only 48 bachelor’s, 30 certificate, and 49 other master’s subjects returned the questionnaire within the 5-month data collection period (November 1985–March 1986). The other two groups, basic master’s and advanced master’s, each had 50 subjects.

Characteristics. There were 212 women and 15 men in the sample. Basic professional education at the bachelor’s level had taken place in 43 different institutions; at the postbaccalaureate certificate level in 15; and at the basic master’s level in 13. The advanced master’s group represented 13 occupational therapy programs. Therapists receiving master’s degrees in fields other than occupational therapy studied in over 40 fields, reflecting education, psychology, physiology, administration, and human services areas.

Clinician was the primary role of 40% of the sample; administrator or supervisor of 29%; and educator of 12%. The remaining 19% worked as consultants or researchers or were students. When surveyed, 65% were employed full-time and 22% part-time; 9% were unemployed and 4% were retired. The choice of occupational therapy as a career was satisfying to 58% and dissatisfying to 11%; 34% were neutral. Satisfaction was measured on a Likert-type scale.

Instrument

An 83-item questionnaire was devised specifically for use in this study. Item content was generated from
applicable sections of the 1976, 1978, and 1982 Human Resources Survey of the American Psychological Association (Richards & Gottfredson, 1984; Vanden Bos & Stapp, 1983; Vanden Bos, Stapp & Kilburg, 1981), the Graduate Program Self-Assessment (Clark, 1980), the review of relevant research, and from a pilot study in which therapists listed significant professional experiences that they had personally experienced and those that they regarded as noteworthy but had not experienced. There was a high degree of overlap in the content derived from these sources. The final questionnaire was intended to be comprehensive.

Of the 83 items, 5 involved clinical practice; 8, education; 6, public relations; 11, administration and supervision; 13, leadership; 10, oral presentations; 12, publications; 5, products development; 7, research; and 6, professional recognition. Respondents answered ‘yes’ or ‘no’ to each item to indicate whether that accomplishment applied to them. One point was given for each affirmative response, and the items in each of the 10 professional activity categories were summed to yield scores.

The “clinical practice” items involved receiving specialty certification, establishing a private practice, serving as an expert witness, responding to referrals from an occupational therapist, and testifying before a state or federal committee. Under “education,” fieldwork supervision, guest lecturing, teaching, course development, curricular conceptualization, continuing education, staff development, and workshop sessions were considered. “Public relations” covered television and radio appearances, presentations to community groups, articles in popular media, donation of occupational therapy services, and hosting foreign therapists. “Administration and supervision” dealt with the development of educational and clinical programs in occupational therapy in both new and established settings, as well as with administrative and supervisory responsibilities and the receipt of grant funds. “Leadership” covered elected and appointed positions in occupational therapy and other professional organizations and in government at the national, state, and district levels. Presentations at the state, national, and international levels were considered under “oral presentations.” The area of “publications” covered editing and writing in professional newspapers, journals, and books. Under “products development” were grouped contributions in assistive devices, splinting, test development, and media. “Research” covered investigations involving practice, education, and administration, research supervision and consultation, and funding. “Professional recognition” queried recognition through awards for research, writing, teaching, clinical practice, and overall professional contributions.

Results

The average years of experience for each of the educational groups is presented in the first row of Table 1. To test the significance of differences among these means a one-way analysis of variance (ANOVA) was conducted. Results indicate that these means are significantly different at the .01 level. The post hoc comparisons indicate that, on the average, the basic master’s group had significantly fewer years of experience than the certificate, advanced, and other master’s groups. Years of experience was used, therefore, as a covariate to test whether differences in the professional activity variable means for the five educational groups were significant, after adjusting for differences in years of experience. The results of these analyses are presented in Table 1. Six of the 10 F values were significant, 4 at the .01, and 2 at the .05 level.

Post hoc comparisons were examined to determine which of the five educational group means differed significantly. For the variables of education and

<table>
<thead>
<tr>
<th>Activity Variable</th>
<th>Number of Items</th>
<th>Bachelor’s (n = 48)</th>
<th>Certificate (n = 30)</th>
<th>Basic Master’s (n = 50)</th>
<th>Advanced Master’s (n = 50)</th>
<th>Other Master’s (n = 49)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of experience (covariate)</td>
<td>50</td>
<td>12.57</td>
<td>17.10</td>
<td>8.64</td>
<td>15.14</td>
<td>16.39</td>
<td>10.34**</td>
</tr>
<tr>
<td>Clinical practice</td>
<td>5</td>
<td>1.50</td>
<td>0.59</td>
<td>3.16</td>
<td>1.24</td>
<td>1.12</td>
<td>2.20</td>
</tr>
<tr>
<td>Education</td>
<td>8</td>
<td>3.84</td>
<td>3.37</td>
<td>3.46</td>
<td>5.65</td>
<td>5.27</td>
<td>11.93**</td>
</tr>
<tr>
<td>Public relations</td>
<td>6</td>
<td>2.47</td>
<td>1.70</td>
<td>2.03</td>
<td>2.43</td>
<td>2.48</td>
<td>2.25</td>
</tr>
<tr>
<td>Administration and supervision</td>
<td>11</td>
<td>3.84</td>
<td>2.53</td>
<td>3.74</td>
<td>4.16</td>
<td>4.30</td>
<td>4.55*</td>
</tr>
<tr>
<td>Leadership</td>
<td>13</td>
<td>2.22</td>
<td>0.55</td>
<td>1.78</td>
<td>3.42</td>
<td>3.31</td>
<td>13.51**</td>
</tr>
<tr>
<td>Oral presentations</td>
<td>10</td>
<td>1.05</td>
<td>0.18</td>
<td>1.08</td>
<td>1.93</td>
<td>1.30</td>
<td>4.82**</td>
</tr>
<tr>
<td>Publications</td>
<td>12</td>
<td>0.84</td>
<td>0.56</td>
<td>0.88</td>
<td>1.69</td>
<td>1.14</td>
<td>2.07**</td>
</tr>
<tr>
<td>Products development</td>
<td>5</td>
<td>0.08</td>
<td>0.09</td>
<td>0.16</td>
<td>0.32</td>
<td>0.25</td>
<td>1.57</td>
</tr>
<tr>
<td>Research</td>
<td>7</td>
<td>0.69</td>
<td>0.30</td>
<td>0.95</td>
<td>1.84</td>
<td>1.31</td>
<td>8.05**</td>
</tr>
<tr>
<td>Professional recognition</td>
<td>6</td>
<td>0.41</td>
<td>0.20</td>
<td>0.48</td>
<td>0.37</td>
<td>0.56</td>
<td>1.22</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
leadership, the means for the advanced and other master’s groups were significantly higher than for the other three groups. Also, for leadership, the certificate group mean was significantly lower than for the bachelor’s group. For the variable of administration and supervision the mean of 2.53 for the certificate group was significantly lower than the means for all other groups. Comparisons for the publications and research variables indicate that the advanced master’s group had a significantly higher mean than the bachelor’s, certificate, and basic master’s groups. Also, for research, the other master’s group mean was significantly higher than that for the certificate group. Lastly, for the variable of oral presentation, the advanced master’s group mean was significantly higher than that for the certificate group. No differences in adjusted means were found for the variables of clinical practice, public relations, products development, or professional recognition.

Discussion

This study compared the professional activities of occupational therapists with different kinds of academic preparation to provide data relating educational background and career characteristics. At the outset, the potential influence of career longevity was recognized, the idea being that the longer one practices occupational therapy, the more opportunity one has to participate in professional activities. However, even when longevity was taken into account, the results of this study showed differences between educational groups, thus highlighting the important role of education in participation in professional activities.

The greatest differences in professional activities were detected between the educational groups viewed as graduate professional by the profession, namely, the advanced master’s and other master’s, and those categorized as basic professional, namely, the bachelor’s, certificate, and basic master’s. In general, the graduate groups scored better than the basic groups. Although the overall finding that a higher level of education is associated with increased involvement in professional activities is consistent with the earlier results of Rogers and Mann (1980b), the findings regarding the basic master’s graduates are not. Rogers and Mann ascertained that the professional involvement of the basic master’s graduates was equivalent to that of the advanced and other master’s graduates and greater than that of the bachelor’s and certificate graduates. Our results, however, align the basic master’s group with the basic professional rather than the graduate professional group and are consistent with the research of Gilkeson and Hanten (1984), which failed to demonstrate differences between baccalaureate and basic master’s graduates, and that of Brayley (1986), which delineated greater contributions by advanced than by basic master’s graduates. Discrepancies between our results and those of Rogers and Mann (1980b) may be due to the failure to control for career longevity in the prior study. Since the Clark et al. (1985) investigation, which also discerned greater achievement by basic master’s than by bachelor’s graduates, sampled alumni from only one university, it is likely that their results are program specific.

Group-by-group comparisons reveal that the certificate group is the lowest in all but one of the professional activity variables, although the difference is not always statistically significant. Nonetheless, there is some suggestion that bachelor’s graduates of cognate fields who are being recruited to occupational therapy to enrich the profession, as well as to fill personnel needs, may not be realizing this promise. Rogers and Mann (1980b) also discerned no significant differences between the certificate and bachelor’s graduates. Since the contributions of basic master’s graduates were greater than those of the certificate group in the areas of education, research, publications and organizational activities, they recommended that the provision of basic professional education through certificate programs be abandoned. Although our results appear to support this recommendation, a more cautious interpretation is preferred. The certificate group surveyed for this study may have had a preponderance of therapists who received their basic professional education earlier than those who constituted the bachelor’s or basic master’s groups. This observation is supported by the average 17 years of professional experience of the certificate group, which is about 5 years more than the years of the bachelor’s group and about 8 years more than those of the basic master’s. The educational group comparisons may thus be confounded with cohort differences in educational preparation, since certificate graduates educated under older requirements are being compared with bachelor’s and basic master’s graduates educated under newer standards. It is conceivable that certificate graduates exposed to more recent educational programming might perform better.

Another interesting educational comparison to analyze is that between the advanced and other master’s groups. Although the graduate groups generally performed better than the basic professional groups, the professional activities of advanced master’s and other master’s groups were essentially equivalent. This finding concurs with that of Rogers and Mann (1980b) and implies that the effect of graduate education on a career in occupational therapy is the same, whether the course of study is within occupational therapy or in a related field. The advanced master’s group did appear to have a slight advantage over the
other master's group in publications, research, and oral presentations, as is evidenced by significant differences in these areas from the bachelor's, basic master's, and certificate groups. These differences may result from the scholarly component of most advanced master's curricula, which requires the conduct and dissemination of a research study. Scientific investigation in other fields is often deferred to the doctoral level, and master's theses and projects tend to be more optional. These data indicate, however, that the advantage achieved by the advanced master's group in these areas is minimal and may well be directly linked to program requirements, such as a thesis or research project. Thus, the impression is given that advanced master's programs are turning out scholarly products but not alumni heavily invested in academic pursuits.

Although statistically significant differences linked to education emerged on 6 of the 10 professional activity variables, the means for all groups are relatively low on all variables compared with the number of items. Hence, regardless of the level of educational preparation, therapists were not highly engaged in these professional activities. The professional activities surveyed were those associated with advancing the status of a profession and securing its place in the delivery of human services. The questions focused on activities involved in developing a scientific body of knowledge, organizing and transmitting the knowledge base, and extending services to new populations and settings. Although educational background has been shown to have an effect on participation in professional activities, specific interventions, such as research and administrative internships, seem needed to develop a cadre of therapists committed to advancing the profession. The mere manipulation of the entry level required for professional practice or a proliferation of advanced master's programs is unlikely to produce the desired outcomes.

Acknowledgments

This study was supported in part through funding received from the SHRP Research Development Fund, School of Health Related Professions, University of Pittsburgh.

References


