A Study of the Development of Traits of Entry-Level Occupational Therapy Students

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Key Words: education, occupational therapy • education, professional • research

Objectives. This study compared the personality traits of entry-level occupational therapy students before and after their participation in 2 years of academic and clinical education in order to examine the change of traits in their professional personality profile.

Method. Forty-nine occupational therapy students completed the 18 scales of the California Psychological Inventory during their first fall and second spring semesters. This time span included two Level I and one Level II fieldwork experiences.

Results. T tests were used to analyze the students' scales. Students' scores in the second test showed a statistically significant increase in 13 of the 18 scales as compared to their first test scores. Achievement via independence and psychological-mindedness emerged as the highest ranking personality traits of the students in their second test scores.

Conclusion. The occupational therapy curriculum may have influenced the scores of the entry-level students, in both intellectual and psychosocial traits, in a positive direction.

Responsibility for shaping the professional traits of future occupational therapists is of as much concern to educators as is responsibility for assisting in the assimilation of the knowledge base of the student. Certain questions arise naturally in the minds of occupational therapy educators as the curriculum continuously expands in content and as the personality profile of student applicants appears to shift from one decade to another. While educating occupational therapy students cognitively, are academic programs also enhancing their professional personality traits? Or are students so focused on the intellectual challenges of the occupational therapy curriculum that they manifest a decline in professional socialization traits rather than an increase in the desired hallmarks of a balanced therapeutic profile? Questions such as these led to this study, which was carried out over a 4-year period, on the change of traits in the professional personality profile of occupational therapy students in one educational program.

Literature Review

Professional socialization traits of occupational therapy students have been examined empirically for at least three decades. In 1962, Pickett discovered that the highest factors motivating persons' entry into the occupational therapy profession included working in direct contact with other persons and assisting persons with physical or mental disabilities. Most studies in the 1970s focused on one or several professional traits rather than looking at a composite picture of characteristics. Nevertheless, the totality of these studies provides a profile of the occupational therapy student of the 1970s and 1980s.

Trait-Specific Studies: 1970s

Patterson, Marron, and Patterson (1970) found that occupational therapy students both wanted and expressed high levels of behavior designed to include themselves in the lives of others. Occupational therapy students aimed at interacting with others on a personal basis. In their interpersonal relationships they showed less controlling behavior than did teachers (Patterson et al., 1970). In 1973, Posthuma and Posthuma found similar results: Occupational therapy students became "less desirous of controlling others and more likely to express affection to others and to want others to express affection to them" (p. 482). The findings of both Patterson et al. and Posthuma and Posthuma and Posthuma are similar to those of Pickett (1962).

Greenstein (1975) examined the three traits of authoritarianism, dogmatism, and Machiavellianism in students during fieldwork. No significant change was found in these characteristics among occupational therapy students during one 3-month period of fieldwork. In contrast, among education students, there was a significant

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increase in authoritarianism and in Machiavellianism during their student teaching experience.

In research on the characteristics of incoming occupational therapy students, Blaisdell and Gordon (1979) compared students who were entering programs with students who were withdrawing their applications. They found that the entering students manifested a significantly higher level of expectations of support than did students who were withdrawing. They also reported that students who were withdrawing scored higher in conformity than did students who were entering.

Research toward the end of the 1970s focused on the professional trait of empathy (Christiansen, 1977; Wise & Page, 1980). The Christiansen study found no significant difference in empathy between occupational therapy students and general college students.

Wise and Page (1980) assessed empathy levels of occupational therapy students at three points in their educational process. Although there was no increase in empathy levels after a Level I fieldwork experience, there was a significant difference before and after a semester that included their group process course. Wise and Page pointed out that they could not conclude that the significant increase was a direct result of that course; however, they did note that no change in empathy occurred after that semester.

 Trait-Specific Studies: 1980s

In the 1980s, occupational therapy researchers examined learning style as a trait of their students. Cunningham and Trickey (1983) found no significant correlation between occupational therapy students' learning styles and their fieldwork performance; however, a stronger relationship was found between academic grades and physical disabilities fieldwork performance than that found between academic grades and mental health fieldwork performance. Stafford (1986) reported what she considered a related finding of preference in occupational therapy students for learning through logical, systematic processing of information. Stafford perceived this style as perhaps "more relevant in physical disabilities settings than in mental health dysfunction" (p. 38).

 Trait-Specific Studies: In Sum

These studies, collectively, provide a picture of the occupational therapy student of the 1970s as a person who wished to interact with and assist persons with disabilities, wished to express affection to others in a mutual manner, expected to be supported in his or her endeavors, and had the ability to progress from average to high levels of empathy. The picture of the occupational therapy student of the 1980s showed a person who began to manifest a desire to learn through logical, systematic processing that appeared to be more closely associated with the knowledge base of physical disabilities. Although these various studies piece together a picture of the traits of the average occupational therapy student, the value of a profile provided by a multiple factor personality assessment cannot be underestimated as a weighted, simultaneous assessment of strength of traits (Cattell, 1967).

 Composite Profile Studies: 1980s and 1990s

In 1985, Posthuma and Sommerfreund used a 12-factor interview rating scale designed and tested by occupational therapy faculty members at the University of Western Ontario to study student applicants. Scores on this scale were correlated with students' previous academic standing and with 3 years of the occupational therapy academic program. A significant correlation was found between the academic grades of students entering directly from high school and their traits of commitment and problem-solving ability. For students with one or more years of university experience, no significant correlation was found between academic record and professional traits.

Madigan (1985) assessed 15 traits to examine the values of occupational therapy students and occupational therapy assistant students in four schools. She found that, in selecting occupational therapy as a career, both student groups ranked their three highest values as altruism, achievement, and way of life. Occupational therapy students also ranked variety and intellectual stimulation highly, whereas occupational therapy assistant students ranked good supervisory relationships and security as high among their values.

In a related study, Danko (1993) sampled 494 occupational therapy students in baccalaureate, professional master's, and postprofessional master's programs in 20 schools. Respondents ranked 30 professional values on a 3-point scale. All three groups ranked self-respect highest or second highest. The baccalaureate and professional master's students valued honesty as highest and second highest, respectively, whereas postprofessional master's students' rankings of intellectual stimulation and self-respect tied for first place in their estimation. Significant differences among the rankings of these three groups emerged for intellectual stimulation, exciting life, comfortable life, and helpfulness. Baccalaureate students placed an exciting and comfortable life high in their estimation. The ranking for helpfulness among baccalaureate students was significantly higher than among master's students.

Most students in both Madigan's (1985) and Danko's (1993) studies rated altruism and helpfulness as high-priority professional traits. These results are reminiscent of Pickett's (1962) findings in which the highest factors motivating occupational therapy students were the possibility of working with persons and of assisting persons with disabilities. Many of the students in Pickett's study selected way of life and an exciting and comfortable life.
—values listed in Madigan's and in Danka's studies—as motivating factors. The two recent studies (Danka, 1995; Madigan, 1995) depicted occupational therapy students as perceiving their future career to be capable of satisfying others' needs as well as their own. Rozier, Gilkeson, and Hamilton (1992) also indicated that students are influenced in choosing occupational therapy as a career by the combination of these intrinsic and extrinsic factors.

Ranking traits and values provides the participants of a study an opportunity to consciously select traits and values that are of professional importance to them. Studies by Estes, Deyer, Hansen, and Russell (1991), Posthuma and Posthuma (1973), and Wise and Page (1980) looked at the influence of the curriculum in a before and after design. However, these researchers only focused on one factor in each study. None of these studies offered a comprehensive assessment of the development of occupational therapy students' traits and simultaneously combined a pretest and posttest research design.

The intent of this study was to examine whether the personality traits of entering-level occupational therapy students change after their participation in a 2-year academic and clinical curriculum. It also sought to identify which student traits showed the greatest changes. The findings may be useful to students, to faculty members who design curricula, and to admissions personnel at the departmental and school levels.

Because it was hoped that the level of scores of professional factors of the profile of students would increase, the hypothesis of this study was that most of the scores of professional socialization personality factors of occupational therapy students would increase after 2 years of academic and clinical curriculum. Most factors is operationally defined as at least 12 (two thirds) of the 18 personality trait scores on the California Psychological Inventory (CPI) (Gough, 1956).

Method

This design of this study is preexperimental and descriptive. The independent variable—academic and clinical education—was provided but not manipulated. The dependent variable—professional socialization—consists of the 18 personality traits of the CPI.

Subjects

Students in two consecutive classes at New York University were offered the opportunity to participate in this study, which provided them with personality trait profiles at the beginning and at the end of their 2 years of study. Whereas 109 students participated in the first test, only 49 students participated in the second test. The sample of this study is based on the 49 subjects who participated in both tests.

The two consecutive entry-level classes included both undergraduate and basic master's graduate students. In order to determine whether the classes could be treated statistically as one group, 18 initial t tests were calculated to ascertain whether there were significant differences between the scores of the 18 CPI traits for the two consecutive classes. Seventeen of the t tests indicated that there was no significant difference between the first test scores of the two classes (see Table 1). This result was not surprising, statistically, because the raw score difference between the two groups for each of these 17 traits was less than 1.0. Only on the trait of femininity, where there was a raw score difference of 1.87, was there a significant t-test difference (p = .003). These results indicated that the two consecutive classes sampled could be considered to have been drawn from the same population pool.

Instrumentation

The 18 traits of professional socialization, measured by the 18 scales of the CPI, provided the broad spectrum of characteristics needed for a comprehensive personality profile. These traits include: dominance, capacity for status, sociability, social presence, self-acceptance, well-being, responsibility, socialization, self-control, tolerance, good impression, communality, achievement via conformity, achievement via independence, intellectual efficiency, psychological-mindedness, flexibility, and femininity-masculinity.

The CPI has a history of extensive use with many populations, including physicians, research scientists, psychiatric residents, mathematicians, and psychology.

Table 1

| Comparison of First Test Trait Scores of Two Classes of Occupational Therapy Students |
|----------------------------------|------------------|------------------|-----------|
| Traits                          | Class 1 Means   | Class 2 Means   | t Test    |
|                                 | n = 65           | n = 44           | p = .05   |
| Dominance                       | 27.3385          | 26.1591          | .299      |
| Capacity for status             | 19.7385          | 20.0227          | .679      |
| Sociability                     | 24.6308          | 25.5909          | .307      |
| Social presence                 | 35.4769          | 35.9158          | .652      |
| Self-acceptance                 | 21.3846          | 21.7045          | .672      |
| Well-being                      | 35.2908          | 35.5409          | .919      |
| Responsibility                  | 28.2938          | 28.4901          | .817      |
| Socialization                   | 36.6452          | 36.7275          | .496      |
| Self-control                    | 28.2923          | 28.5000          | .886      |
| Tolerance                       | 22.1077          | 22.0455          | .944      |
| Good impression                 | 15.9602          | 16.3804          | .418      |
| Communality                     | 25.7602          | 26.0802          | .449      |
| Achievement via conformity      | 27.2615          | 27.5909          | .680      |
| via independence                | 21.000           | 21.7500          | .290      |
| Intellectual efficiency         | 37.2769          | 37.0455          | .809      |
| Psychological-mindedness        | 11.8769          | 11.8049          | .950      |
| Flexibility                     | 11.2933          | 11.0909          | .787      |
| Femininity                      | 22.3077          | 24.1818          | .003      |

Note: Students were tested with the California Psychological Inventory. These numbers are raw scores.
The CPI traits have both face validity and construct validity because they are based on typical behavior patterns, personality perceptions, and dispositions that persons tend to use and observe naturally in their daily interpersonal interaction with each other (Megargee, 1972). Validation procedures for the CPI have incorporated the use of criterion groups, internal consistency analyses, and a panel of psychologists (Gough, 1975). The CPI's validity has been documented in a multitude of international studies across a large number of cultures (Megargee, 1972).

The CPI has been found to be reliable in numerous studies carried out by Gough (1975). Test-retest correlations of the 18 scales average at .75 for adults (Gough, 1975). The percentile 50 is the mean standard score for the CPI, with the first standard deviation ranging from the 40th to the 60th percentiles. The second standard deviation scores are placed at the 30th and 70th percentiles.

Procedure

The first administration of the CPI was offered to each class in the fall semester of their first year. The second administration was offered after a four-semester academic sequence, which included two Level I and one Level II fieldwork experiences. Measures of central tendency and analysis of variance of traits as measured at both tests were used to test the hypothesis. $T$ tests for paired samples comparing 49 students' first test scores with their second test scores were carried out with the Statistical Package for the Social Sciences (1990).

Results

Results are reported as percentages (see Table 2). Findings indicate that 13 of the 18 scores increased significantly on the second testing. These findings support the hypothesis that an increase from the first test to the second test would occur in at least two-thirds of the personality traits listed in the CPI. The scores that increased were: dominance, capacity for status, sociability, well-being, responsibility, socialization, self-control, tolerance, good impression, achievement via independence, achievement via conformity, intellectual efficiency, and psychological-mindedness.

The five scores that did not increase are nonetheless found, in both the first test scores and the second test scores, at or slightly above the CPI mean of 50%. In second test scores, achievement by independence received the highest score (mean of 60%), and psychological-mindedness received the second highest score (mean of 57%). All first test and second test scores began and remained within the first standard deviation above and below the mean of the CPI (40th to the 60th percentile).

### Table 2

<table>
<thead>
<tr>
<th>Traits Increasing Significantly</th>
<th>First Test Percentages (M)</th>
<th>Second Test Percentages (M)</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dominance</td>
<td>50</td>
<td>54</td>
<td>0.001</td>
</tr>
<tr>
<td>Capacity for status</td>
<td>48</td>
<td>52</td>
<td>0.004</td>
</tr>
<tr>
<td>Sociability</td>
<td>51</td>
<td>53</td>
<td>0.032</td>
</tr>
<tr>
<td>Well-being</td>
<td>40</td>
<td>44</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Responsibility</td>
<td>41</td>
<td>46</td>
<td>0.108</td>
</tr>
<tr>
<td>Socialization</td>
<td>44</td>
<td>47</td>
<td>0.015</td>
</tr>
<tr>
<td>Self-control</td>
<td>45</td>
<td>47</td>
<td>0.635</td>
</tr>
<tr>
<td>Responsibility</td>
<td>41</td>
<td>46</td>
<td>0.002</td>
</tr>
<tr>
<td>Tolerance</td>
<td>48</td>
<td>52</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Good impression</td>
<td>42</td>
<td>43</td>
<td>0.043</td>
</tr>
<tr>
<td>Achievement</td>
<td>58</td>
<td>60</td>
<td>0.599</td>
</tr>
<tr>
<td>Achievement via independence</td>
<td>50</td>
<td>52</td>
<td>0.010</td>
</tr>
<tr>
<td>Intellectual efficiency</td>
<td>46</td>
<td>52</td>
<td>0.001</td>
</tr>
<tr>
<td>Psychological-mindedness</td>
<td>54</td>
<td>57</td>
<td>0.001</td>
</tr>
<tr>
<td>Social presence</td>
<td>53</td>
<td>53</td>
<td>0.582</td>
</tr>
<tr>
<td>Self-acceptance</td>
<td>56</td>
<td>56</td>
<td>0.636</td>
</tr>
<tr>
<td>Communality</td>
<td>51</td>
<td>51</td>
<td>0.582</td>
</tr>
<tr>
<td>Flexibility</td>
<td>56</td>
<td>56</td>
<td>0.705</td>
</tr>
<tr>
<td>Femininity</td>
<td>50</td>
<td>50</td>
<td>0.735</td>
</tr>
</tbody>
</table>

Note. Students were tested with the California Psychological Inventory (CPI). Fifty percent is the mean standard score based on CPI norms.

Discussion

### Trait Scores That Increased

The findings of this study support the hypothesis that most factors of professional socialization of occupational therapy students increase during the students' academic and clinical studies. While occupational therapy students are expanding their cognitive knowledge base during a demanding and intense curriculum, they are also increasing their personality trait scores of professional socialization. This finding should be encouraging to faculty members who sometimes express doubt over whether, due to an emphasis on academic excellence, occupational therapy values and professional norms are simultaneously being transmitted. The findings of this study may reassure academic and clinical educators that efforts made in experiential courses and during fieldwork experiences are being incorporated as professional social traits. Particularly noteworthy is that the occupational therapy student profile of this study exhibited the highest scores in achievement via independence and in psychological-mindedness.

How are these traits conceptualized as components of professional socialization? Dominance (50% first test; 54% second test) and capacity for status (48% first test; 52% second test) are essential traits that an occupational therapist needs to advocate for clients with other profes-
sionals, sometimes in a hostile health care system. Some educators might wish to see higher levels of these traits in occupational therapists. On the other hand, as has been observed in earlier studies (Brofekier, 1970; Patterson et al., 1970; Peacock & O'Shea, 1984), in contrast with teachers and other professionals, occupational therapists prefer to guide consumers rather than dominate or impress them with their own personal values or goals.

Sociability (51% first test; 53% second test) and socialization (44% first test; 47% second test) are of assistance to occupational therapists in their interpersonal relationships with consumers, both individually and in groups. Because socialization relates to societal roles, professionals, sometimes in a hostile health care system, some therapists may wish to see higher levels of these traits in occupational therapists.

Gough (1956) defined self-acceptance as including the elements of confidence and self-esteem. Gough's (1956) definition overlaps with his concept of self-acceptance, a perception of oneself as competent within one's environment. However, Gough's (1956) concept of self-acceptance in the CPI incorporates a view of the environment as negative or not supportive. The lower score of 44% first test; 47% second test) could increase from that of a beginning therapist.

Well-being also increased significantly (40% first test; 44% second test). This trait is important as a foundation in a profession that demands caring for others. Low level well-being scores upon entry to a program raise questions for further study for both the students' self-selection process and the academic selection of candidates.

The difference between the well-being score of 44% and the self-acceptance score of 56% is curious because Gough (1956) defined self-acceptance as including the elements of confidence and self-esteem. Gough's (1956) definition of self-acceptance overlaps with his concept of well-being, a perception of oneself as competent within one's environment. However, Gough's (1956) concept of well-being in the CPI incorporates a view of the environment as negative or not supportive. The lower score of 44% first test; 47% second test) could reflect their status of being in the student role.

In contrast to the well-being score of 44%, the self-acceptance score of 56% is reassuring for future occupation therapists who need to provide treatment with dependability and accountability. The increase in tolerance (48% first test; 52% second test) was viewed as positive for growth in professional socialization because occupational therapists work with consumers of a variety of cultural and lifestyle backgrounds.

The traits of this sample increased both in achievement via independence (58% first test; 60% second test) and in achievement via conformity (50% first test; 52% second test) scores. The fact that the second test score of achievement via independence (60%) was the highest outcome in this study can provide satisfaction to faculty members and fieldwork supervisors who are concerned that students merely memorize information to achieve high grades. This trait may be indicative of creative and objective problem solving that is essential to adaptation for and with consumers and necessary to sustaining appropriate practice in private and solitary settings. It may be of some importance that this sample began their education with achievement via independence as their highest first test trait. A personality trait that occupational therapists believed needed to be developed in occupational therapists in the past (Lehmann, 1973).

Combined with an increase in percentiles in intellectual efficiency (46% first test; 52% second test), an increase in the scores of the trait of psychological-mindedness (54% first test; 57% second test) is positive feedback for occupational therapy faculty members and clinical supervisors. Teaching students how to expedite the learning process and how to develop clinical reasoning as integrated cognitive skills are desirable traits in a field where large caseloads are often the norm. The role modeling of insightfulness toward the emotional aspects of satisfactory rehabilitation seems to have occurred among this sample of students whose psychological-mindedness was their second highest trait in the second test. Given the field's current concern about the integration of psychosocial principles into all areas of practice, faculty members can be heartened by this finding.

The focus on the interaction between the three cognitive factors of achievement via independence, achievement via conformity, and intellectual efficiency and the factor of psychological-mindedness is reminiscent of the studies that examined the relationship between occupational therapy student learning styles and clinical performance (Cunningham & Trickey, 1985; Stafford, 1986). The finding of the present study, that cognitive and psychosocial traits advance in tandem, seems to indicate that progress in the intellectual arena is not inconsistent with development of insightful awareness skills. This finding can hopefully counteract the impression provided by the studies of Brofekier (1970) and Stafford (1986) that indicated that there may be a split between learning styles and traits needed in physical disability therapy and those needed in mental health therapy.

**Trait Scores That Remained Stable**

There may be cause for concern among educators and clinicians over those trait scores that did not increase (see Table 2). Social presence can at times be of assistance in the efforts of occupational therapists to present rehabilitation in an appealing manner that includes a persuasive element and an ability to attract others. Community can be helpful in working with teams of professionals. A lack of increase in this trait needs to be examined in future studies. Above all, the lack of increase in flexibility could be a deficit for future occupational therapists focused on encouraging consumers in the rehabilitation process who need to accommodate for their losses, adapt their residual abilities, and assimilate new skills. The stability of femininity scores at 50% is perhaps desirable to the extent that therapists wish to be viewed as gender neutral in relationships with consumers. Whereas self-acceptance remained stable, its position at the 50th percentile is slightly above the average, a healthy but realistic rating.
The use of the CPI with its broad configuration of traits of professional socialization has presented a profile of factors that occupational therapy educators hope to instill in their students. Whereas many earlier studies of occupational therapy students examined individual factors or small clusters of traits, as a multifactor assessment the use of the CPI has the advantage of being able to embed the focus of its questions in an extensive assortment of personality elements designed to provide a more balanced picture of a person (Cattell, 1967).

Further examination of Table 1 reveals that the occupational therapy students in this sample did not exhibit a wide variance of trait scores. As indicated earlier, all (first and second test) scores fell within the first standard deviation above or below the mean. This finding seems to parallel a finding that surprised Peacock and O’Shea (1984): that the overall personality profile of 87 Canadian occupational therapists did not distinguish a personality profile that varied from that of the average person. Brown (1989) also found that Canadian occupational therapy students and clinicians’ personality profile was not distinguishable from that of the general population.

Does this finding suggest that occupational therapists are relatively balanced, integrated persons without unique or unusually high trait scores? Does this finding suggest why, among health professionals, occupational therapists tend to be close to the persons they serve? This composite profile of averageness in occupational therapy students may contribute to the ability of occupational therapists to be consumer-oriented enablers. The studies of Patterson et al. (1970) and Posthumus and Posthumus (1973) reflected the image of occupational therapists as caregivers who are not desirous of controlling others.

Although no traits for students in this study extended beyond the first standard deviation above or below the mean, the two traits with highest second test scores (achievement via independence and psychological-mindedness) imply that students in this sample have the potential for the autonomy needed to be professional decision makers and the ability to perceive and incorporate the body–mind dimension for and with consumers with disabilities.

**Limitations**

A limitation of this research was the lack of participation by students unwilling to repeat the CPI again at the end of their studies. This lack of follow-up participation may have been due to the time needed to take the test (1 hr) or to students feeling that the test results are personal in nature. The absence of data from these 60 nonparticipants raises questions about their profile of traits. This limitation is partially offset by the evidence from the preliminary tests comparing the two classes, indicating that there was no significant statistical difference between the two groups.

Another aspect of this study that needs to be kept in mind in interpreting the findings is that the influence of natural development during the 2 years of this study has not been measured separately by this research, but may have been a factor contributing to the increase in traits in the second test.

This study was begun before the current influx of large numbers of applicants to occupational therapy programs of study, which has provided the field with a more select group of students. Future studies are needed to examine the changes in the profile of professional traits brought to current programs by this recent influx of occupational therapy students.

**Conclusion**

This study indicated that student increases in a number of traits of professional socialization may be fostered by participation in an occupational therapy academic and clinical curriculum. Whereas occupational therapy student profiles in this sample were similar to those of the average person (as established by CPI norms), higher scores of achievement via independence and psychological-mindedness reflect a profile of both a professional and a therapist. Both the responsible educator’s concern for quality assurance and the researcher’s curiosity about the possible impact of the occupational therapy curriculum have been at least partially satisfied by the undertaking of this study.

**Acknowledgment**

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**References**


