Fieldwork Performance and Academic Grades

(correlation, education, grade, occupational therapy)

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The literature examining the relationship between occupational therapy academic course work and fieldwork performance was reviewed. Responding to a recent suggestion calling for a reexamination of this relationship with a sample of significantly larger size, we initiated the present study. The results are similar to earlier studies, with little or no correlation found in most analyses. Further investigation of the results provides strong evidence supporting the conclusion that correlation analysis is inappropriate for this investigation; thus, it would be incorrect to assume that there is little or no relationship between occupational therapy academic course work and fieldwork performance. Suggestions of ways to study the relationship between course work and fieldwork are presented.

Working from the assumption that successful fieldwork performance (FWP) is highly correlated with successful entry-level therapist job performance, educators have sought to determine the relationship between academic course work and FWP. We hypothesized that the relevance of course work to clinical practice could be examined by applying correlational analysis to college grades and fieldwork performance ratings (FWPRs). Past studies, failing to establish a strong relationship between grades and FWPRs, offered varied explanations for the findings. Yet, the basic reasons for not establishing such a relationship have not been examined. Perhaps there is no relationship, or perhaps the methodology employed is inappropriate.

We address the relationship of academic course work to FWP in this study for the following purposes: a) to summarize previous studies of the relationship between FWPRs and academic grades, b) to replicate previous studies using a significantly larger sample drawn from student classes over a longer number of years, c) to examine the assumptions and potential problems associated with the use of correlational analysis in the investigation of this problem, and d) to suggest meaningful areas for research concerning the relationship of academic course work to FWP.

A summary of these studies, along with the present study, is presented in Table I. Sample size ranged from a low of 28 students (4) to a high of 104 students (5). The number of academic years from which samples were drawn in former studies ranged from one (2) to seven (5). Either entry-level masters degree students (1) or baccalaureate degree students (2–5) were studied in each case. Each study was carried out at a different institution.

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Review of Literature

The correlation between academic grades and FWP of occupational therapy students has been examined and reported most recently by Katz and Mosey (1) in 1980; this correlation was previously studied by Ford (2) in 1979, Lind (3) in 1970, Anderson and Jantzen (4) in 1965, and Englehart (5) in 1957. A summary of these studies, along with the present study, is presented in Table I. Sample size ranged from a low of 28 students (4) to a high of 104 students (5). The number of academic years from which samples were drawn in former studies ranged from one (2) to seven (5). Either entry-level masters degree students (1) or baccalaureate degree students (2–5) were studied in each case. Each study was carried out at a different institution.

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used the early form (RPSA) (3, 4), and two used the more recent form (1, 2). The grades used to examine relationships varied somewhat from study to study, but most studies used an overall grade point average (GPA) and/or individual occupational therapy course grades. Katz and Mosey (1) included averaged grades for several courses in a given content area, such as physical disabilities.

In studying the relationship of academic grades to FWPRs, Katz and Mosey (1) reported correlations ranging from .01 to .46 with a median correlation coefficient of .20; the strongest correlations were found for physical disabilities courses GPAs with each of the FWPRs and the occupational therapy course grade with physical disabilities FWPR. Relative to other correlations, the relationship between occupational therapy major course GPA with FWPRs was high. Ford (2) reported correlations ranging from .00 for physiology lab grade with physical disabilities FWPR to .40 for anatomy course grade with physical disabilities FWPR. Lind (3) did not present correlation coefficients; she used correlation analysis to determine a regression equation in which certain variables (course grades) were determined to be significant in predicting FWPRs. She did not report the proportion of variance accounted for by each grade. Anderson and Jantzen (4) found correlations ranging from .02 for the relationship between biology grade and Part 1 of RPSA for psychiatric affiliation and .25 for the relationship between logic course grade and Part 2 of the RPSA for the psychiatric affiliation. Englehart (5) found correlations ranging from .01 (she found several) to .37 for the relationship between pediatrics course and Tuberculosis affiliation.

**Methods**

Several differences exist between the methods used in the present study and those used in former studies of the relationship between academic grades and FWPRs. These differences are summarized in Table 1.

Sampling for the present study consisted of 328 undergraduate occupational therapy students who completed their bachelor of science degree between 1974 and 1981 at the State University of New York at Buffalo (SUNY/AB). The sample evaluated all occupational therapy graduates from SUNY/AB during these years. Students were admitted to the program at the end of their sophomore year. Mean age at graduation was 22.3 years. The sample included 22 males and 306 females.

Pearson product moment correlation coefficients were calculated to measure the strength of the relationship of course grades and GPAs with FWPRs. The significance of the correlation coefficients was tested using the Student's t test. Means and variances for each variable were calculated and examined.

**Results**

Results are presented in Table 2. Several weak but significant ($p = .05$) relationships were found. Correlation coefficients ranged from .01 to .20. The strongest correlations (although still weak) were for the relationship between academic grades and FWPRs (psychosocial and physical disabilities).

**Discussion**

We hypothesized that with an increased sample size and a greater diversity of students (eight class years in present study) significantly beyond that of previous studies we would find relationships between academic grades and FWPRs. In fact, our findings are similar to

<table>
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<th>Table 1</th>
<th>Summary of Demographic and Methodological Differences in Studies of the Relationship between Academic Grades and FWP</th>
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<tr>
<td>Degree level of subjects</td>
<td>Baccalaureate</td>
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<tr>
<td>Instrument used to measure FWP</td>
<td>FWPR</td>
</tr>
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<td>Site of study</td>
<td>State University of New York at Buffalo</td>
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FWP, fieldwork performance; FWPR, FWP rating.
those of previous studies; low correlations were found. If the $R^2$ ($R^2 = r^2$) values (the square of the correlation coefficient), which provide a measure of the proportion of variance in FWPRs explained by academic grades, are considered, even the highest reported $R^2$ value is a mere .21, describing the relationship between course grades in physical disabilities and the psychosocial FWPR (1).

The following is a summary of explanations offered to account for these low correlation coefficients. Englehart (5) concluded that grades may only be a partial predictor of clinical performance and that her findings may be influenced by the fallibility of grades and rating scales. Anderson and Jantzen (4) deemed academic achievement by a homogenous population of freshman and sophomore students to be a poor basis for prediction of performance while on affiliation. These researchers concluded that clinical performance cannot be predetermined from selected grades because the two are unrelated. Lind (3) acknowledged that the instruments used in her study may not measure all the variables that could have an effect on clinical performance; she also said that a small sample from a fairly homogenous population, along with differences among raters in completing a subjective evaluation, may have affected the validity of her results. Ford (2) suggested that investigation of the interaction between supervisors and students on clinical work may yield a relationship between this interaction and internship performance; this implies that low correlation coefficients are a result of differences in interpersonal mix between student and supervisor, Katz and Mosey (1, p 797), who found correlations between grade point averages and FWP reports ranging from .10 to .46, stated, "since these correlations were in the middle range, it is possible that there were some differences in the behaviors evaluated through paper and pencil testing." They further stated that some of their findings were "not expected" and thus were "difficult to interpret."

A careful examination of the distribution of course grades and FWPRs in our study suggests a reason for failing to achieve high correlation coefficients: the variance of course grades is very low. For example, the mean grade for the occupational therapy mental health course is 3.2, with a variance of .36. Over 95% of the 328 students received grades of A or B. This lack of variability in grades is typical of all grades and grade averages, although for some courses, such as gross anatomy, the variance is slightly higher (.52).

For FWPRs, there is a much higher variability relative to academic grades. However, it is fallacious to assume that with a wide range of FWPR scores (132 to 212) and a standard deviation of 16.86, there is much intersubject difference. FWPRs are translated into grades ranging from F to A, numerically from 1 to 5. For the psychological fieldwork, 95.4% of the 328 students received an A or B grade, with 270 students receiving A grades. For physical disabilities fieldwork, 95.4% of the students received an A or B grade, with 238 receiving A and 75 receiving B grades. In a situation where students are being scored on a form (FWPR) that has a certain amount of subjectivity and where interrater reliability studies determined a .75 interrater reliability (6), the high variance in the raw scores is more likely related to rater differences; this suggests, as with the letter grades (F to A) from translated raw FWPR scores, that the student group is indeed very much alike in terms of performance.

Interrater reliability for the FWPR falls within acceptable standards for instruments of its type. Development of the FWPR was due in part to a call for a more reliable measure of FWP. No published reports of interrater reliability could be found for the RPSA; however, Anderson and Jantzen (4) reported a correlation of between .7 and .8 between the two parts of the RPSA, indicating a fairly high

<table>
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<th>Table 2</th>
<th>Correlation Coefficients of Present Study: Academic Grades with FWPRs</th>
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<tr>
<td></td>
<td>Physical Disabilities FWPR</td>
</tr>
<tr>
<td>Prerequisite courses GPA</td>
<td>.232</td>
</tr>
<tr>
<td>Science courses GPA</td>
<td>.196</td>
</tr>
<tr>
<td>PSYQPA-psychology courses GPA</td>
<td>.164</td>
</tr>
<tr>
<td>PHYSQPA-physical disabilities course GPA</td>
<td>.000</td>
</tr>
<tr>
<td>MEDQPA-medical science courses GPA</td>
<td>.203</td>
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<tr>
<td>MAJORQPA-overall occupational therapy courses GPA</td>
<td>.094</td>
</tr>
<tr>
<td>Gross anatomy</td>
<td>.168</td>
</tr>
<tr>
<td>Occupational therapy mental health course</td>
<td>.105</td>
</tr>
<tr>
<td>Physical disabilities treatment course</td>
<td>.099</td>
</tr>
</tbody>
</table>

FWPRs, fieldwork performance ratings; GPA, grade point average.

"p < .05."
level of internal consistency. Englehart (5) reported a .81 correlation for internal consistency for the orthopedics affiliation when using the clinical training report scores converted to the RPSA scale. While these correlations are relatively high, they do indicate that a significant portion of variance in scores is due to other factors. Likewise, if measures of reliability could be obtained for academic course work (a difficult, if not impossible task), there is little doubt that they would also not prove to be 100% reliable.

Thus, the homogeneity of student performance in both academic course work and fieldwork is the cause of the low correlation coefficients. Correlation analyses depend on variance in scores. However, this does not mean there is no relationship between course work and fieldwork. What it does indicate is that a different approach is needed to study the problem.

If it is accepted, after having been studied six times, that correlation analysis is not appropriate, is there some other analysis that may be more useful? The concept of content validity regarding academic courses seems appropriate to apply in this analysis. It asks the question of whether or not the content of the academic course work is related to the expectations for fieldwork. Content validity is usually applied to empirical measurement, and a test would not be considered "content valid" if its questions did not cover what the test's title or description implied. Applied to an academic program, the preclinical curriculum would be content valid if it included learning experiences leading to knowledge and skills used in occupational therapy clinics. This analysis is actually what each curriculum must undertake at least every six years in preparation for accreditation. The quality of such an analysis, and the changes made in response to the findings, would have far more impact on occupational therapy education than more correlation studies. While Katz and Mosey (1, p 799) have called for more research "with larger samples to discover the relationship between occupational therapy courses and fieldwork performance," we have determined in this study that larger samples do not change the statistical findings of previous studies.

One further analysis is recommended. On occasion, students do very poorly on fieldwork. Doing a study of students who performed unsatisfactorily, that is, examining factors that might be associated with poor performance, could lead to initiation of preventative measures to decrease the possibility of unacceptable performance. These measures might relate to a) admissions criteria to the academic program, b) identification of personality problems associated with either or both the student and the fieldwork supervisor, or c) academic curricula deficits. This approach suggests a major shift away from studying the correlation of grades and FWPRs, if a curriculum is content valid and a student does poorly on the fieldwork only such an individualized, almost case study type of approach, will yield possible answers for the poor performance. Another approach would be to look at students with marginal academic course work grades who do well on fieldwork.

Summary

The relationship between academic grades and FWPs, having been studied on six separate occasions, all with similar results, was found to be low, using correlation analysis. Given the homogeneity of student performance in both academic course work and in fieldwork, correlation analysis was determined to be inappropriate to study the relationship between academic course work and FWPs. Individual curricula content review, such as that which is done for accreditation, might provide more substantive data on the relevance of academic course work to fieldwork expectations. Research on students failing fieldwork assignments would provide further insight for curricula planning. One last area in need of study is that of the relationship between FWPs and actual job performance. However, correlation analysis should once again be avoided.

REFERENCES


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