

The Impact of Student–Clinical Instructor Fit and Student–Organization Fit on Physical Therapist Clinical Education Experience Outcomes

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Background and Purpose. Person–environment fit has been found to predict a wide variety of outcomes in the workplace, including individual performance and satisfaction. In this study of physical therapist (PT) student clinical education experiences, *fit* refers to how well a student fits with the clinical education site’s organizational environment, as well as the fit between student and clinical instructor. This study investigates the relationship between PT student–organization fit and PT student performance and satisfaction outcomes, as well as PT student–clinical instructor fit and PT student performance and satisfaction outcomes.

Subjects. Participants included a total of 59 clinical instructor–student dyads as part of a 4-week and an 8-week clinical experience within a professional PT education program.

Methods. Students and clinical instructors completed personality and values assessments at the beginning of the clinical experience. Students completed a satisfaction questionnaire and a fit questionnaire at the end of the clinical experience and clinical instructors completed evaluations of student performance at the mid and final points. Consistent with the literature, fit was determined both by student-reported perception of organization fit, as

well as by objectively calculating absolute differences between student and clinical instructor personality and values profiles.

Results. Student-reported satisfaction with the clinical education experience was related to perceived student–organization fit and demographic similarity between student and clinical instructor. The fit between the student and the clinical instructor was important to understanding both student performance and satisfaction outcomes.

Discussion and Conclusion. Implications include the importance of using employee hiring-type strategies to match students to clinical education sites and instructors and ensuring that students have adequate information to select sites that fit their needs and interests.

Key Words: Clinical education, Student outcomes, Person–environment fit.

BACKGROUND AND PURPOSE

Clinical education is an integral component of the professional education of physical therapists. Students, under the supervision and guidance of licensed physical therapists, learn to apply the knowledge, skills, and behaviors acquired in the academic program to real patients in the clinical practice environment.¹ Clinical education experiences can be part-time or full-time and typically are interspersed throughout the education program and follow completion of all academic course work. A *Normative Model of Physical Therapist Professional Education*² and the *Evaluative Criteria for Accreditation of Education Programs for the Preparation of Physical Therapists*³ provide guidelines for clinical education experiences within professional programs. These documents emphasize the importance of structuring high-quality clinical education experiences to ensure that graduates of professional physical therapist education programs are clinically competent upon graduation.

Given the immense importance of the clinical education component within the pro-

fessional preparation of physical therapists, it is important that these experiences are designed to be most effective. Research in the fields of organizational behavior (OB) and industrial/organizational psychology (I/O psychology) has identified the potential influence of person–environment fit in employee satisfaction and performance.^{4,8} Person–environment (P–E) fit theory suggests that the compatibility between an individual’s personality and his or her psychological environment leads to satisfaction and performance outcomes.⁹ Further, Kristof⁶ suggests that fit is “the compatibility between people and organizations that occurs when: 1) at least one entity provides what the other needs, 2) they share similar fundamental characteristics, or 3) both.”^(p6) Employees who fit with an organization’s culture, their job, and others in the organization tend to have more positive work-related attitudes such as satisfaction, commitment, and intentions to stay, as well as better task and citizenship performance.^{4,8} While much is known about work-related outcomes and fit, very little is known about the impact of fit on PT student clinical education learning experiences.

Person–Environment Fit

Person–environment fit addresses one’s compatibility with various aspects of an organization’s environment, including the organization itself (eg, culture, climate), job, group, or supervisor. The broad notion of person–environment fit receives attention across a variety of work-related literatures, including organizational behavior,¹⁰ recruiting and selection,^{11,12} and vocational/career counseling.¹³ Fit is typically determined in one of two ways, directly or indirectly. Direct fit (or perceived fit) is determined by asking individuals to indicate the extent to which they fit the environment. Fit can also be assessed indirectly (or objectively), most typically by calculating the actual differences between the person and environment on any number of characteristics, such as age, personality, values, goals, etc.⁶ Researchers have noted that direct assessments of fit tend to be more strongly related to satisfaction and commitment than indirect assessments of fit.⁸

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Interest in fit itself is not only an academic exercise; relationships are consistently found between fit and work outcomes, and should be expected that fit would also predict important physical therapist student clinical education experience outcomes. For example, person–organization (P–O) fit has been found to be positively predictive of job satisfaction,^{4,5,8,14,15} organizational commitment,^{5,8,14–16} and negatively predictive of intentions to quit.^{8,16,17} Perceived matches between ideal and perceived organizational culture have been found to predict both task and contextual performance¹⁸ (ie, performing tasks that stretch beyond the requirements of one’s job). Research has also found stress and perceived fit to be negatively correlated.⁶ While similar patterns of findings within the clinical education experience context may be expected, there are important differences between fit as it is typically studied—in the traditional employment context and within physical therapist clinical education experiences. Next, hypotheses are developed with regard to expected outcomes of fit in the physical therapy internship context.

Fit and Physical Therapist Clinical Education Experience Outcomes

There are several student outcomes that might suggest a “successful” clinical education experience. Two important outcomes include development of competence and student satisfaction with the experience itself. To evaluate competence, the American Physical Therapy Association publishes a *Physical Therapist Clinical Performance Instrument*¹⁹ with multiple measures of student performance that tend to fall within two broad categories, which we will refer to as *technical* and *professional competence*. Technical competence includes such knowledge and skills as documentation, critical inquiry, screening, and examination. These are some of the skills that enable the functional effectiveness of a physical therapist. Professional competence includes such knowledge and skills as professional behavior, ethical practice, and professional/social responsibilities. In short, these are the ethical and interpersonal skills that enable one to effectively deploy technical competence with patients and colleagues and to successfully practice in a professional environment.

Student satisfaction with the clinical experience is also an important outcome; ideally the experience not only will hone students’ technical and professional skills, but also will build confidence and satisfaction with their choice of profession. Such confidence and satisfaction could be influenced by whether or not students have a positive or negative

experience during their clinical education experiences. There are likely some similarities and some differences in fit relationships within clinical education experiences for several reasons. For example, the relationship between fit and outcomes may be influenced by the nature of the student’s role; the relationship between student, organization, and clinical instructor (CI); and the relatively short duration of the experience itself.

The role of the physical therapist student is to learn through observation and hands-on experience through a fairly dependent relationship with a CI. In contrast, the role of a practicing PT is to apply professional and technical competence to identify, assess, and resolve patient health issues. Thus, the student’s role is unique in the work setting, which likely results in different motivations and restrictions within the work relationship. The student’s role and the finite duration of the experience likely limits a student’s attempts and ability to negotiate roles, learn the organization’s culture, and feel compelled to “fit in” with colleagues—in a sense, “fitting in” is not as important a goal for a student as it is with a long-term employee.

Given the importance of perceived person–organization (P–O) fit in understanding work-related outcomes, it seems reasonable that similar relationships will exist within the clinical education experience context. A recent meta-analysis of P–O fit and work-related outcomes found that perceived P–O fit predicted job and work satisfaction.⁸ Similarly, perceived P–O fit among students is expected to be positively predictive of satisfaction with the clinical education experience.

Considerably less is known about the relationship between person–supervisor (P–S) fit and outcomes. There is some evidence to suggest that P–S fit is positively related to job/career satisfaction,^{8,20} and some support was found for the connection between P–S fit and organizational commitment²¹ and perceived performance.⁸ Kristof-Brown et al⁸ suggest that objective fit most likely would be related to performance outcomes versus self-perception constructs such as satisfaction or commitment; their meta-analysis suggests that the correlation between objective fit and overall performance to be nonsignificant at $r = .09$. However, given the unique relationship between student and supervisor and the short duration of the clinical education experiences—in the case of this study, 4 weeks and 8 weeks—compared to a true employment relationship, objective fit is expected to predict student performance. This is expected because the clinical education experience itself provides a differential power structure within which, compared to

typical work relationships, there is likely less give and take with regard to role definition and mutual influence, which may allow objective fit to exert a larger influence.

Given the unique and dependent relationship between student and CI, this relationship is expected to have a significant impact on students’ evaluations of the broader organizational environment. Physical therapist students work under the close supervision of their CIs, rather than practice independently, and thus their fit with the supervisor will likely come to define their overall perception of fit with the organization. From a demographic standpoint, CIs are typically older than interns, and, consistent with research on generational differences,^{22–24} there may be a relationship between demographic fit (eg, age) and outcomes. For example, some generational research suggests that younger workers expect and need more feedback than older workers and expect greater independence in the workplace.²³ To the extent that older CIs do not provide the type and amount of feedback and autonomy desired by younger students, student perceptions of P–O fit may decrease. Thus, while age is a crude measure of differences, differences in age between student and CI will likely impact perceptions of fit and satisfaction.

Clinical instructors also are influenced by fit perceptions. Instructors are in the position to both teach and evaluate student competence. As the field of physical therapy has grown, there have been changes in technology, pedagogy, and expectations of practitioners. In addition to generational differences mentioned above, these differences in the field may influence CI perceptions and suggest that age differences will predict student performance ratings. Thus, age differences are expected to influence CI perceptions of student performance.

Gaps exist in both the educational and organizational psychology literature with regard to whether and how fit affects student learning experiences and outcomes within a clinical education experience. The purpose of this study is to evaluate the specific contribution of person–organization and person–supervisor fit to student outcomes (ie, satisfaction and performance) in physical therapist clinical education experiences. This study may lead to improvements in how physical therapist students are matched with CIs to enhance student outcomes.

Hypotheses

Hypothesis 1: Student-perceived person–organization fit will be positively related to student satisfaction with the clinical education experience.

Hypothesis 2: Objective determinations of CI–student fit on *personality* are inversely related to evaluations of student performance on the CPI.

Hypothesis 3: Objective determinations of CI–student fit on *work values* are inversely related to evaluations of student performance.

Hypothesis 4: CI–intern age differences and perceptions of fit are inversely related.

Hypothesis 5: CI–intern age differences and student satisfaction are inversely related.

Hypothesis 6: CI–intern age differences and CI assigned ratings on professional and technical competence are inversely related.

SUBJECTS

Participants consisted of a cohort of 33 physical therapist students enrolled in a professional (entry-level) clinical-doctoral program in physical therapy and their respective clinical instructors. In the second year of the program, these students participated in one 4-week and one 8-week full-time clinical education experience, assigned to a new location and CI each time. Thus, each student worked closely with two clinical instructors, creating 66 unique student–CI dyads. Of these 66 potential dyads, 66 students and 59 instructors followed through, leaving 59 dyads (89%). The students were primarily female (96%) and have a mean age of 27 (median = 26, mode = 25, range = 25–42). The CIs also were primarily female (75%), with a mean age of 38 (median = 36, mode = 28, range = 27–62), and had been with their organization for an average of 6 years (range 1.5–20).

METHODS

Measures

Demographics. Students provided their sex, year of birth, and their student ID number (for tracking purposes). Clinical instructors provided their gender, year of birth, and the number of months they have been employed with the host organization.

Personality. Goldberg's²⁵ International Personality Item Pool 50-item Big Five personality inventory was selected to measure personality. The measure contains five 10-item scales, one scale each for: extraversion, emotional stability, agreeableness, conscientiousness, and openness. Since first proposed by Norman²⁶ in 1963, researchers have found that most personality assessments factor into the 5-factor model, which likely represents the universal traits underlying the normal personality.²⁷ Goldberg's²⁸ freely-available measure is considered by personality-test developers and theorists as the criterion indicator for the 5-factor model, suggesting its widely-acknowledged construct

validity. Goldberg reports internal consistencies for each of the scales that are in the acceptable range ($\alpha = .79-.87$). The measure utilizes a Likert-type 5-point scale (1 = strongly disagree to 5 = strongly agree). A single difference score between student and CI personalities was calculated by summing the absolute difference between each of the 5 traits. Thus, higher scores indicate greater differences.

Work values. Participants completed a 24-item scale developed by Cable and Edwards²⁹ based upon Schwartz's³⁰ 4 original conceptual value dimensions: self-transcendence, self-enhancement, conservation, and openness to change. The Cable and Edwards²⁹ work values survey contains 8 work value dimensions, with 3 individual items, and are named as follows: altruism, relationship with others, pay, prestige, security, authority, variety, and autonomy. Cable and Edwards²⁹ report acceptable internal consistency statistics for the individual scales, with alpha ranging from .79 to .91 (mean $\alpha = .88$). The authors also report on the validity of this measure using a confirmatory factor analysis (Cable and Edwards, unpublished data, 2004). Using 183 Master of Business Administration students, the authors obtained a comparative fit index of .93, and a root-mean-square error of approximation of .07. This suggests a good fit with the values model underlying the inventory, and suggests discriminant and convergent validity. A single difference score between student and CI values was calculated by summing the absolute difference for each of the 8 values. Thus, higher scores indicated greater differences.

Fit. Student-perceived P–O fit was measured based upon a scale developed by Cable and Judge.^{11,31} Students answered 3 items using a 5-point agree-disagree Likert-type scale. Internal consistency statistics were $\alpha = .93$. The items were:

- 1) The things that I value in my life are very similar to the things that my clinical placement organization values.
- 2) My personal values match my clinical placement organization's values and culture.
- 3) My clinical placement organization's values and culture provide a good fit with the things that I value in life.

Performance outcomes. APTA's Physical Therapist Clinical Performance Instrument¹⁸ (CPI), described earlier, was selected to measure student outcomes in 2 areas that were subsequently termed professional and technical competence. Although the psychometric properties of the CPI currently in use have not been reported, testing on a preceding version found an intraclass correlation coefficient of

0.87 for interrater reliability.³² The CPI has 24 criteria, and not all items were evaluated across both the 4-week and 8-week clinical education experiences. For example, intervention was not a required item for grading in the first clinical education experience, and therefore was not included in the analysis. In addition, any criterion (such as safety) that might be classified by the authors as both technical and professional was excluded. A total of 10 items were evaluated for all dyads across both experiences and included in the analysis.

At the midpoint and conclusion of the internship, students received a supervisor-provided rating on each item to indicate their performance on a scale from "novice clinical performance" to "entry-level performance," using a 10-centimeter line. The mid and final evaluations were converted into a 10-point scale using a ruler, by dividing the line into 10 equal segments. The mean of the midpoint and final scores was calculated for each of the 10 items to create a performance score for the overall clinical education experience for each item. A factor analysis was conducted and resulted in 2 factors, with the items loading as expected. Students thus received 2 final performance scores, one for each factor. Reliability estimates for professional and technical competence were $\alpha = .93$ and $\alpha = .96$, respectively (Table 1).

Satisfaction. Students used a 1–5 satisfied/dissatisfied Likert-type scale to respond to a 2-item satisfaction questionnaire that was developed for this study. These items were: 1) overall satisfaction with clinical / educational experience and 2) overall satisfaction with the clinical work setting, and had an internal consistency of $\alpha = .85$.

Procedure

Students in this program choose clinical education sites through a lottery system, whereby students drew a number between 1 and 33, representing the order in which they chose their clinical education site. More than 50 sites were available for each of the 2 experiences, and students were able to refer to the clinical site information forms (CSIFs) on file for all sites prior to the selection meeting. Most sites do not conduct screening steps with the students; they are accepted and assigned to an available CI. Thus, in contrast to a traditional employment relationship, very little is done to ensure adequate fit between the student and CI and host organization. Demographic, personality, and values data were captured at the beginning of the clinical education experience. CIs provided performance measures at the mid point and conclusion of the internship, and student perceptions of fit and satisfaction were col-

Table 1. Student Technical and Professional Competencies With Factor Loadings*

	Professional Competence	Technical Competence
4. Adheres to ethical practice standards.	.88	.27
3. Demonstrates professional behavior during interactions with others.	.83	.28
2. Presents self in a professional manner.	.81	.37
8. Adapts delivery of physical therapy care to reflect respect for and sensitivity to individual differences.	.75	.34
22. Demonstrates that a PT has professional/social responsibilities beyond those defined by work expectations and job description.	.74	.45
5. Adheres to legal practice standards.	.71	.30
11. Performs a physical therapy patient examination.	.30	.92
12. Evaluates clinical findings to determine physical therapy diagnoses and outcomes of care.	.33	.92
10. Screens patients using procedures to determine the effectiveness of and need for physical therapy services.	.40	.89
9. Applies the principles of logic and the scientific method to the practice of physical therapy.	.42	.83
Variance explained	43%	39%

*Factor analytic method: principle components analysis; varimax rotation with Kaiser normalization (N = 59).

lected at the conclusion of the clinical education experience.

This study was approved by the Institutional Review Board of Oakland University for research involving human subjects. Student participants were recruited through a brief presentation at the conclusion of a class period. The presentation briefly summarized the purpose for the study, and the broad outcomes anticipated (eg, improving clinical education experiences). Students were assured that their information would be kept confidential. Clinical instructors were recruited through an invitation letter from the first 2 authors, providing similar information as that provided to the students. The CIs completed the survey through a paper copy sent to them directly with a return envelope. The demographics measure was first in each packet, with the personality and values measures included in random order. Those participants who agreed to participate returned their packets to the first author through the mail.

Data analysis. Data were entered and analyzed using SPSS* (Version 11.5). The CPI was factor analyzed using principle components analysis, with a varimax rotation and Kaiser normalization. Given the directional nature of all hypotheses, a one-tailed Pearson product moment correlation test with alpha at .05 was utilized to evaluate all relationships.

RESULTS

Hypothesis 1 was supported: Student-perceived P-O fit was significantly related to

Table 2. Inter-Item Correlation Matrix

	1.	2.	3.	4.	5.	6.	7.
1. Age difference	-						
2. Overall satisfaction	-.48* [†]	-					
3. Personality differences	.01	-.10	-				
4. P-O fit	-.34* [†]	.64 [†]	.17	-			
5. Professional competence	.03*	-.12	.19*	.11	-		
6. Technical competence	.16*	.00	-.33* [†]	.02	.01	-	
7. Values differences	-.09	.20 [†]	.14	.27 [†]	-.24*	-.27* [†]	-

*Hypothesized relationships (N = 59).

[†]P < .05.

overall satisfaction ($r = .64$; large effect size³³). Partial support was found for hypotheses 2 and 3: Greater differences in personality and values were associated with lower levels of technical competence ratings ($r = -.33$, and $r = -.27$, respectively; both moderate effect sizes³³). However, differences in personality and values were not associated with evaluations of professional competence ($r = .19$ and $r = .14$, respectively; nonsignificant).

With respect to hypothesis 4, student perceptions of P-O fit were negatively correlated with age differences; that is, as age differences increased, student perceived P-O fit decreased ($r = -.34$; moderate effect size³³). Finally, with regard to hypothesis 5, age differences were negatively correlated with student-rated overall satisfaction ($r = -.48$; moderate effect size³³) (Table 2).

DISCUSSION AND CONCLUSION

This study examined the association between the fit of the student with both the organiza-

tion and the clinical instructor and key outcomes of clinical education experiences: Student satisfaction and clinical competence as measured by CPI scores. Hypothesis 1 was supported. Student satisfaction with the clinical education experience was positively associated with student perceived person-organization fit. It is not clear whether student satisfaction led to fit perceptions, or whether fit perceptions led to student satisfaction. This positive association replicates findings from the broader P-O fit literature,^{4,6,8} extends it to clinical education experiences, and supports the rest of the findings in this study.

Hypotheses 2 and 3 were partially supported. As objective differences between CI and student personalities and values increased, ratings of technical competence decreased; however, ratings of professional competence did not decrease significantly. This finding is somewhat consistent with Kristof-Brown et al⁸ suggestion that objective P-S fit correlates with overall performance. While we can not

*SPSS Inc, 233 S Wacker Drive, 11th Floor, Chicago, IL 60606.

determine causal relationships in this study, we can suggest possible interpretations. For example, objectively calculated fit removes social perceptions, shared experiences, role negotiation, etc from fit determinations. Similarly, in order to evaluate performance objectively, CIs must attempt to remove their personal feelings, perceptions of fit, etc from their evaluations. These results are a reminder of the difficulty of true objectivity and underscore the importance of developing processes to ensure that students and CIs are matched based upon compatibility. For example, once students are assigned to a site at which more than one CI is available, perhaps the program's academic coordinator of clinical education and the center coordinator of clinical education could interview students and CIs to determine a good match.

Our findings also suggest that student clinical education experience outcomes may improve if barriers related to generational differences can be reduced, perhaps by the student and CI building rapport at the outset of the clinical education experience and developing shared expectations of how they will work together and what to expect from each other. If these results are replicated elsewhere, it may be that objective P-S fit is related to technical, rather than professional, performance. Given the lack of research in this area, additional work needs to be done to corroborate these findings.

Support for hypothesis 4 extends the P-S and P-O fit literature by finding that greater CI-student age differences were associated with decreased perceptions of P-O fit. Perhaps due to their semi-dependent working relationship, the CI comes to define the organization for the student, and age/generational differences may be interpreted by the students as a lack of fit with the organization. This result may not be unexpected, since students are just beginning their socialization into the profession; this may be the first time they are experiencing a truly professional environment.

The results of this study support hypothesis 5, which proffered that age differences are inversely correlated with student satisfaction. This is consistent with recent articles expressing concern about the "generation gap" and its potential impact on clinical education.³⁴⁻³⁸ Age differences between CIs and students were associated with both student perceptions of person-organization fit and student satisfaction with the clinical experience, but not with the professional or technical grades received by the students. These results should be viewed with caution: Although a generation gap may be one explanation for the lower technical competence grades, an-

other explanation could be that the older CIs have more experience and are more accurate and less lenient in their grading of students' technical competence. This lack of finding of a direct relationship between age differences and professional and technical scores on the CPI should be somewhat reassuring to the profession, because it indicates that the primary focus of attention should be on ensuring a good fit between CI and student in personalities and values versus age.

Taken together, these results suggest the importance of ensuring P-O fit between CIs and students. The lottery system underlying this particular internship program was designed to ensure fairness in the assignment of internship sites. However, the results suggest that random assignment of CI-student relationships favors students who happen upon good fit with their CI. In the context of these results, fairness—ensuring students are evaluated by an individual with whom they fit—can be better achieved through practical systems designed to achieve fit in an employment context. For example, using a traditional selection model, students could apply for a clinical instruction site by completing an application, submitting a résumé, and interviewing for the position. Further, PT education programs could speed up the socialization process by providing clear expectations for professional behavior, dress, expectations, etc, which might enhance perceptions of fit on the part of CIs and students. Clinical instruction sites should also clarify expectations during the application stage, similar to what is done during job interviews, to ensure the student applicant has enough information at the outset to determine how well they will fit with the environment. While perhaps adding some time and effort to the assignment process, the outcomes of good fit seem worth the investment.

Limitations

One major limitation of this study was the measurement of student satisfaction and students' perceived fit after the students had received their midterm and final clinical education experience grades. It is possible that unsatisfactory grades influenced student perception of fit versus the alternative hypothesis that the poor fit impacted the grades and satisfaction. Given the design of this study, cause and effect cannot be demonstrated. Also, the sample consisted of 59 dyads; a larger sample size may have resulted in additional support for other hypotheses which approached, but did not achieve, significance. These limitations notwithstanding, this study met the charge of Haddad and Jensen,³⁹ who recently discussed the value of considering

research from associated disciplines when addressing issues in the education of physical therapists.

Future Research

Future research should further replicate and extend these findings with PT and other internship/clinical instruction-driven education programs. Ideally, such research would avoid one of the limitations of this study by capturing information regarding perceived fit prior to students' receiving evaluations. Future research should also evaluate methods of increasing fit between internship site and CI and student, to evaluate which methods are most successful in making successful matches.

This study applies OB and I/O psychology theory and research models to PT clinical education and suggests P-O fit may be an important construct in bringing new insights to clinical education. This study further underscores the value of looking to research and theory within and beyond that found in the physical therapy education literature. Given the importance of the clinical education component within the professional education curriculum, research into what contributes to high-quality clinical education experiences must continue, and changes made in how clinical experiences are selected and assigned.

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