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Review Article

# Understanding Perspectives on Practice-Research Links: Research Aspirations of PsyD Clinical Students

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## Abstract

In order to examine the myth that students who apply to a PsyD program rather than a PhD program in clinical psychology are research-avoidant, students across several cohort years who were entering a clinical PsyD Program were assessed on measures related to beliefs and attitudes about research. Although their interests in practitioner skills and outcomes were stronger than their scientific interests, PsyD students did not have vastly different attitudes than students entering PhD programs. Since the majority of PsyD programs admit applicants with strong research backgrounds and then do require dissertation research, evidence for this myth of research avoidance was confusing. PsyD students may be less interested in analyzing data, presenting results and publishing research, but there is still support for a scientific approach to psychological practice.

## Introduction

Different graduate training models have traditionally fostered divergent attitudes about the role of research. For example, the scientist-practitioner or Boulder model of psychology training places an equal emphasis on research and practice. The practitioner-scholar or Vail model emphasizes the preparation for clinical practice while acknowledging the importance of training in science. Graduate students are taught to be “local clinical scientists” by applying research skills to solve local (individual) contextual and clinically relevant problems (Ready and Santorelli, 2014). According to Stricker and Trierweiler (2006), the “local clinical scientist brings the attitudes and knowledge base of a scientist to bear on the problems that must be addressed by the clinician in the consulting room” (p. 37). The clinical setting is seen as analogous to the scientific laboratory and thus represents an opportunity to integrate psychological science and “real world” practice. Gelso (2006) acknowledges that most applied graduate students enter training with the wish to be a practitioner and not a researcher, and that only a small proportion of graduates continue to produce research, even those from a scientist-practitioner model [1]. However, in a survey by Hughes et al (2019) about research criteria used to accept prospective students, it was found that faculty from clinical PhD programs rated research experience as more important, and they expected a greater amount of research experience from applicants, a match between their research and applicants’ research experience, and more independent research experience from applicants [2].

The NCSPP competency model for professional training includes the scientific approach to psychological practice as a core competency; one that distinguishes psychologists from other health care providers [3]. However, a 10-year longitudinal study of over 200 graduate students who completed the Scientist-Practitioner Inventory, a questionnaire with items reflecting both research and clinical activities, indicated that the Boulder model does not succeed in producing “scientists first and practitioners second” [4]. Only a small percentage of doctoral recipients continue to conduct research, and those that become academic psychologists often did not engage in clinical practice. A survey of 653 clinical psychology graduate students focused on their experience in a scientist-practitioner training program indicated that the majority report confidence in their abilities to integrate science and practice and satisfied with their training in the scientist-practitioner model [5]. However, despite understanding the ways that science can inform clinical practice, only one third of the sample indicated that they would actually use science-based decisions when working with clients. Many researchers in the field continue to examine this apparent disconnection occurring after the psychology dissertation experience.

In many applied fields, the gold standard is to ensure that practice is informed by research. Despite the strides in the field of evidenced based practice, there has been limited examination of the development of research interests and competencies of PsyD clinical students. This research examines a common assumption that students selecting the PsyD Practitioner-Scholar training model have negative attitudes towards research and report limited research expectations or self-efficacy. A review of websites indicates that of the 67 APA accredited PsyD program, 94% require a dissertation project, although there is great variability across professional training programs. In 1983, Perl and Kahn conducted a national survey about psychology graduate students’ attitudes toward research. Although they did not use standardized self-report inventories, the authors’ results from over 2000 participants, and over 700 who were clinical psychology students, indicated positive attitudes and enthusiasm for research as part of their graduate training. They also reported that a small sample (n=139) from professional schools preferred to do less research than others, but their overall attitudes towards research did not differ significantly than other graduate students completing the survey [6]. The goal of this research project was to assess attitudes towards research of students entering a clinical PsyD program prior to being involved with any research and before planning their steps towards a dissertation project. Further, this study aimed to incorporate standardized measures of research interests and research self-efficacy and compare clinical PsyD students to other graduate student samples reported in the literature.

## Method

### Participants

Subjects were a sample of PsyD students (N=137) from one program (Long Island University) across several entering cohorts that included 103 women, 32 men, and 2 individuals not indicating gender. Participants’ ages ranged from 20 to 49 years



with a mean age of 25.5 years. During their orientation meeting, prior to starting their doctoral studies, participants volunteered to complete a packet of measures.

## Dependent Measures

Across 7 cohort years upon entrance into the PsyD Clinical Program, the following self-report inventories (for a total of 129 items) were administered:

### a) Scientist/Practitioner Inventory (SPI):

The SPI is a 42-item measure of interests in activities associated with both scientist and practitioner aspects of psychology. The measure contains a 21-item scientist interest scale and a 21-item practitioner interest scale. The SPI utilizes a five-point Likert scale on which 1 indicates very low interest and 5 indicates very high interest. The measure includes seven subscales: research activities, statistics and design, teach/guide/edit, academic ideas, therapy activities, clinical expert/consultant, and tests and interpretation. *Leong and Zachar (1991)* demonstrated that the SPI has very respectable factorial validity, internal consistency, test-retest reliability, freedom from response bias, concurrent and criterion-related validity, sensitivity to important differences between samples, and sensitivity to differences between subgroups within the same sample [7]. The SPI is a valid measure of scientist and practitioner interests among a sample of graduate students in psychology, and specifically help to discern whether individuals are primarily interested in the science or the practice of psychology. A high score on the scientist inventory would indicate high interest in the science aspect of psychology, whereas a high score on the practitioner score would indicate high interest in the practice of psychology. These scales are not mutually exclusive, and scores are calculated independently.

### b) Research Outcomes Expectations Questionnaire (ROEQ):

The ROEQ is a 20-item measure of expectations of outcomes of participating in research related activities. The items measure both personal and professional expectations. The measure does not operationalize research, and thus the definition of research is subjective based on the participant. The scale utilizes a 5-point Likert scale, with 1 indicating strongly disagree, and 5 indicating strongly agree. Reliability data showed strong internal consistency, with coefficient alphas of .89 and .90 [7, 8]. This measure has been validated with a sample of graduate students in psychology.

### c) Interests in Research Questionnaire (IRQ):

The IRQ is a 16-item measure of interest in various research activities. The measure utilizes a 5-point Likert scale, ranging from 1 (very disinterested) to 5 (very interested) to indicate their degree of interest in a given research related activity. As described in the instructions, the term “research” included both qualitative and quantitative aspects of research. Reliability data showed good internal consistency, as evidenced by coefficient alphas of .89 [7] and .90 (*Bieschke et al., 1995*). The IRQ has shown high correlation with the SERM (Self Efficacy in Research Measure) with a correlation of  $r=.57$  indicating good construct validity [9].

### d) Research Self-Efficacy Scale:

Revised (RSES) is a 51-item inventory designed to assess an individuals’ perceived ability to engage in various research activities [10]. This scale includes 4 subscales: early tasks (the individual’s efforts to brainstorm and identify a research idea), conceptualization (the individual’s efforts to develop one’s own thoughts and rationale for a research idea), implementation (the tasks necessary to carry out a research project) and presenting the results (the steps necessary to organize and both write and orally present the results from a research project). Reliability data showed internal consistency ranging from moderate to high for both the total scale ( $r=.96$ ) and for each of the four subscales ( $r=.75$  to  $.96$ ) [11].

## Results

(Table 1) represents mean scores and standard deviations for the total PsyD sample for each measure and sub scale.

**Table 1:** Descriptive statistics of research aspirations of PsyD students (n=137).

Variables	Sample Ranges	Sample Means	Sample Standard Deviations
<b>SPI (7 subscales)</b>			
Research	14-46	30.2	6.2
Therapy	25-74.5	56.3	5.9
Teach	18-Apr	10.8	2.9
Expert	25-Sep	18.8	3.2
Ideas	15-Feb	8.7	2.4
Test	15-May	10.9	2.1
Statistics	Apr-40	8.5	4.2
<b>Scientist Total</b>	27-94	57.9	12.5
<b>Practitioner Total</b>	57-104.5	86.2	8
<b>ROEQ</b>	37-88	68.4	12.3
<b>IRQ</b>	16-72	48.5	12.2
<b>RSES (4 subscales)</b>			
Early Task	10 - 100	77.4	16.5
Conceptualization	10 - 98.125	69.2	16.7
Implementation	Oct-96	61.7	18.6
Presenting Results	10 -101.25	66.3	17.8
<b>Total Score</b>	10 - 95.29	67.3	15.6

For the interpretation of these scores, we examined available published literature on these inventories for other graduate student populations. (Table 2) presents comparison scores from previous research (PhD, EdD, counseling and school psychology) using the SPI, the IRQ, the ROEQ and the RSES. Results indicate that PsyD students are less interested in research and are much more interested in applied practitioner aspects than other doctoral students except for the scores reported by [12]. On the ROEQ, our PsyD Clinical students had slightly higher scores when compared to doctoral counseling psychology students.

In order to examine the concurrent validity of the selected scales, a correlational analysis was conducted. (Table 3) indicates extremely high correlations for all research related measures, ranging from  $r=.77$  (SPI Science Subscale and the IRQ) to  $r=.246$  (ROEQ and IRQ). The only non-significant correlations were between the SPI Practitioner Scale and the Research Self Efficacy Scale ( $r=.172$ ), and the Research Outcome Expectations and Research Self-Efficacy Scale ( $r=.055$ ).

In order to examine differences in research competencies for students entering a doctoral psychology training program with a master’s degree already in hand, scores between the two groups were compared. This comparison of students entering a clinical PsyD doctoral training program with (n=46) and without (n=91) a master’s degree revealed no differences in Research Outcomes Expectations (ROEQ) or Interests in Research (IRQ) between groups. Although there were no significant differences in S-P Scores (Scientist-Practitioner Inventory) on either the Scientist Total Score or the Practitioner Total Score between these groups, there was one significant difference found within subscale scores. All of the subscales revealed higher mean scores for those entering with a master’s degree (n=46) but only the significant difference was found in the Research Activities subscale. On the Research Activities subscale, the students without a master’s degree (n=91) had a mean of 29.38, whereas the mean of students with a master’s degree (n=46) was 32.07. This difference had a significance level of  $p=.016$  using a 2-tailed t-test. For the Research Self-Efficacy Scale (RSES), (Table 4) presents a number of differences between those PsyD students entering with and without a master’s degree on two of the four subscales.

**Table 2:** Comparisons of means to previous research on doctoral students.

	SPI Scientist Mean Score	SPI Practitioner Mean Score	RSES Mean Score	IRQ Mean Score	ROEQ Mean Score
<b>LIU Post Clinical Psychology Doctoral Program</b>					
Clinical Psychology PsyD (n=137)	57.9	86.2	67.3	48.5	68.4
<b>Leong &amp; Zachar (1991) [7]</b>					
Clinical Psychology PhD (n=32)	58.7	72.9			
Experimental Psychology PhD (n=19)	76.1	47.1			
<b>Bieschke, Bishop, &amp; Garcia (1996) [11]</b>					
Various Doctoral Programs (n=136)			71.05		
<b>Martin et al. (2007) [13]</b>					
Counseling Psychology PhD (n=82)	68.03	84.03			
School Psychology PhD (n=59)	77.54	77.66			
Educational Psychology EdD (n=11)	78.18	52.82			
<b>Lambie &amp; Vaccaro (2011) [14]</b>					
Counseling Psychology PhD(n=89)			76.92		
<b>Kahn (2001) [12]</b>					
Counseling Doctoral PhD (n=149)			74.55	55.17	61.47

**Table 3 :** Pearson Correlation results for concurrent validity of measures used to assess research interests PsyD students (n=137).

Measure	1	2	3	4	5
SPI: Scientist Scale		.349**	.564**	.261**	.783**
SPI: Practitioner Scale	.349**		.359**	0.055	.331**
ROEQ (Research outcome expectations)	.564**	.359**		.127	.672**
RSES Total Score (Research self-efficacy)	.261**	0.055	0.127		.243**
IRQ (Research interest)	.783**	.331**	.672**	.243**	

Source: \*Correlation is significant at the 0.05 level (2-tailed).

\*\*Correlation is significant at the 0.01 level (2-tailed).

**Table 4:** Significant difference in subscale score of RSES between students with (n=46) and without (n=91) Master's degrees.

Subscale of RSES		Mean Subscale Score	2-Tailed t-Test Sig.
Early Task	MA	83.5	p = .001
	BA	74.71	
Conceptualization	MA	75.32	p = .002
	BA	66.51	

Results indicate that students entering doctoral training already with a master's degree start with a greater report of research self-efficacy, specifically on the early steps involved in a research project. Likely, their prior graduate training has already included greater involvement with research activities as well as a more thorough understanding of methods and aims of psychological research. These attitudes about research do not, however, seem to be the case in terms of entering PsyD students' interests in research or their own expectations of doing research. Regardless of previous graduate training, all PsyD students in our sample had similar interests and expectations.

## Discussion

Over the course of 7 entering cohorts of doctoral students in a PsyD program, the current sample had the lowest score for the Scientist Scale of the SPI (Scientist-Practitioner Inventory) and the highest scores for the Practitioner Scale of the SPI for all reported studies using this measure. This provides evidence for the notion that PsyD applicants have a much greater interest in the practice side of the clinical psychology arena. However, the notion that PsyD students were not interested in conducting research or were research avoidant was not supported. Given this, more accurate information about the research components and the dissertation requirements in PsyD program should be available to those applying to doctoral programs. Further, employers of clinical psychologists might use these data to make determinations about best fit for positions with and without research expectations. Doctoral admissions committees who consider those applicants who have already achieved a master's degree in a mental health or applied field should consider that having had previous research experience might not automatically lead to higher research outcome expectations or greater interest in research. All PsyD student are similarly interested in research whether or not they have previous research experience, yet it seems that previous research experience does boost self-efficacy and actually thinking that it can be accomplished. PsyD programs might better target issues related to beliefs in their abilities to conduct research and create more opportunities to engage in clinical research at the outset of their doctoral education

In terms of the availability of appropriate measures and the reliance on self-reported attitudes and beliefs about research, there is much to be developed. All of the self-report measures used in this study were highly correlated with one another. The only non-significant correlations were between the SPI Practitioner Scale and the Research Self Efficacy Scale ( $r=.172$ ), and the Research Outcome Expectations and Research Self-Efficacy Scale ( $r=.055$ ). So, maybe the myth of PsyD students only interested in practice is not associated with their research self-efficacy. Further, expectations of outcome were not correlated with their reported research self-efficacy. A study of undergraduates reported by *Sizemore and Lewandowski (2009)* indicated that knowledge and attitudes about research might be independent aspects and therefore might need to be measured differently [15]. Their pre-post results from 139 undergraduates completing a course in research methods and statistics indicated that although knowledge increased significantly, there was a notable decline in perceived utility of and interest in conducting research. Future research might examine attitudes and knowledge as different aspects impacting the actual participation in research endeavors while in graduate training.

Of course, there are many other variables associated with research outcomes that



are more influential than knowledge, attitudes and self-reported expectations. PsyD students likely benefit from being in a program where there is research activity and faculty scholarship, enabling them to become involved with research projects early on. Having access to data sets, becoming a part of a research team and collaboration with advanced doctoral students all combine to enhance early research involvement and build research interests. Interestingly, there is very little research that has been focused on achieving good outcomes for research in doctoral programs in psychology. A recent review systematically assessed research on the psychology doctoral dissertation, particularly in the health service fields of clinical, counseling, and school psychology [16]. A comprehensive literature search focused on the doctoral dissertation in psychology. The search yielded 18 articles that were then sorted into 6 categories: dissertation development in the field, dissertation mentorship, dissertation method, students' dissertation experiences, dissertation authorship credit, and post-dissertation research activity. Only one article in their review discussed the impact of a dissertation preparatory course that included issues such as topic, advisor, committee selection, dissertation politics and procedures, dissertation writing, and research methods which would seem to have the greatest positive impact on research outcomes [17]. The reviewers (Vidair *et al* 2019) suggest that future research address topic selection, types of research questions, traditional vs. alternative research methods and the advisor-graduate student relationship as predictors of research completion in clinical programs [16].

The reviewers (Vidair *et al*, 2019) also indicate the need for research on relations between factors associated with the dissertation experience (e.g., early research experiences, prerequisite courses, topic selection, methodology used, program requirements, early proposal completion, mentoring experiences, internship support) and proximal and distal outcomes (e.g., research satisfaction, dissertation performance, quality of the completed dissertation, timely completion, publication, career success) [16]. Hopefully, their review will spur on researchers in clinical programs to conduct reliable and valid research on the research process for doctoral students [18-20].

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