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Does Clinical Psychology Education Enhance the Clinical Competence of Practitioners?

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Abstract

Until now there has been little evidence that graduate programs in clinical psychology make any difference to our abilities as practitioners. We present a quasi-experimental study designed to evaluate the effectiveness of postgraduate education in clinical psychology. Clinical psychology students from Australian universities were compared with psychology graduates who had elected to practice under Australian provisional registration rules (i.e., without a postgraduate education). Results showed that, following one extra year of education, postgraduate trainees performed better than those with no postgraduate training, but only to a modest degree. The implications for the quality of graduate programs are explored.

Does a Clinical Psychology Education Enhance the Clinical Competence of Practitioners?

Does postgraduate clinical training make a difference to therapeutic practice effectiveness? The answer must surely be “yes”. Why else would trainees spend large amounts of money and time on training, trainers spend all that time teaching, supervising, assessing, and mentoring, and employers give preference to professionally trained psychologists? Why else would governments provide considerable funding to postgraduate counseling and clinical courses? Whatever the reason, it is not because we have conclusive evidence of the effectiveness of training. In fact, the literature provides the willing reader with a murky and contradictory picture as to the effectiveness of postgraduate training. Some studies find it makes a difference, while others find it does not. Before deciding to invest in shares rather than do a postgraduate course, join us in an investigation of the effectiveness of training, made possible by the relatively unique training situation provided by Australian procedures for becoming a registered psychologist.

There is little consistent evidence that advanced training programs in psychology are effective in enhancing the clinical skills of students or in making them more effective practitioners (Atkins & Christensen, 2001; Sherman, 1999; Stein & Lambert, 1995). If we were to apply the standards that accrediting bodies use to define evidence-based procedures to our educational practices, we would have to conclude that our educational procedures are neither ‘well-established’ nor ‘probably efficacious.’ The simplest explanation for the failure to observe so-called training effects is that there may not have been any training effects to observe. Our reason for not accepting this explanation is that many reviewers have argued that research purporting to measure training effects has not been sufficiently well designed or executed to demonstrate those effects. Reviewers consistently identify substantial problems in how independent variables like training and experience are defined (Christensen & Jacobson, 1994; Stein & Lambert, 1995), and how dependent variables like psychological therapy

(including therapist variables, treatment variables, and client variables; Beutler & Kendall, 1995) are defined. There also have been criticisms of the methodological rigor of much training research (e.g., small samples, unreliable measures, lack of comparison groups; Robiner, Arbisi & Edwall, 1994; Stein & Lambert, 1995). Because the minimum requirement for evidence-based procedures is that the evidence is obtained in studies with good experimental designs, the methodological problems in research on education in psychology mean that the results of this research cannot establish whether our educational procedures are, or are not, efficacious. Even if it is not possible to measure education effects accurately, procedures for minimizing methodological constraints on estimating these effects have been identified.

In our view, research on the effectiveness of clinical education has been so flawed because the domain precludes randomized experimental research. Evaluations of effectiveness will always be constrained by such factors as (a) our limited knowledge of the critical conditions that students need most to understand [e.g., which conditions are responsible for the effectiveness of psychotherapy (cf. Andrews, 2001; Avis & Sprenkle, 1990; Richards, 2001)], (b) ethical concerns [e.g., the inappropriateness of random assignment of prospective students to training and no-training conditions, resulting in selection biases (cf. Pilgram & Treacher, 1992; Roth & Leiper, 1995; Shiffman, 1987)], and (c) the tension between imposing adequate experimental controls (e.g., exposing trainees to the same test conditions) and maintaining ecological validity [e.g., exposing trainees to real test conditions (Sharpley & Ridgway, 1992)].

Australia – The Natural Experiment

As Lambert and Bergin (1994) have noted, in order to be confident that changes in outcomes are attributable to the formal education process (rather than to experience or to informal on-the-job training), it is essential that the performance of students be compared with

that of otherwise comparable non-students. However, as noted earlier, ethical and practical constraints mean that research participants—prospective students self-selected from a population of graduates—cannot be randomly assigned to experimental (training) and control (no-training) conditions. Nevertheless, the way that the profession of psychology is constituted in Australia means that a quasi-experimental design can be constructed from extant groups. Following completion of a four-year undergraduate degree in psychology in Australia, aspiring psychologists choose one of two routes to becoming a registered psychologist. The first option is to pursue an additional two years or more of specialized postgraduate education in psychology (e.g., a masters or doctoral degree in clinical psychology). The second option is to pursue a professional apprenticeship, which involves at least two years of approved, supervised, workplace experience. Both options include clinical practice from the beginning of the program. Selection (and self-selection) processes *may* mean that the people who pursue these different options differ from each other on factors other than the independent variable (specialized training), but it is possible to control for some of these differences statistically (e.g., analysis of covariance).

Evaluation of Training Effectiveness

Our general aim was to assess whether postgraduate training in clinical psychology leads to enhanced performance as a clinical psychologist. If training in clinical psychology is effective, training effects should be evident in significantly enhanced performance on measures of clinical knowledge and on measures of clinical practice ability. Moreover, these positive changes in performance should be evident both within participants (positive change from pre-training to post-training) and between participants (trainees better than non-trainees). To date the literature has focused on whether training makes a difference to all students' competence. The question of the potential differential impact of training on trainees has to our knowledge not been addressed; educators seem to presume that training benefits all trainees

equally. However, knowing whether training benefits some trainees more than others may be of value in designing courses and selecting trainees, and is an important question to address as part of this study.

Seventy participants were recruited at the beginning of the study, and 61 participants completed the study. The trainees were 32 persons, about 10% of the total number of students enrolled in clinical psychology courses at their universities, who were beginning postgraduate study in clinical psychology at the commencement of the study. Of the 31 trainees who completed the study, 22 were women. Non-trainees were 38 recent graduates from four-year undergraduate psychology courses. Of the 30 non-trainees who completed the study, 19 were women. The trainee and non-trainee groups did not differ in sex, grade point average in the fourth year of their initial degree, or experience working as a psychologist (including type of experience, number of contact hours, and amount of supervision). Participants were recruited from 7 universities, about one fifth of the total number of Australian universities providing clinical psychology education. We think that our sample is representative of clinical students and clinical programs in Australia, but it may be less representative of clinical students and programs in the USA, UK, and elsewhere.

In our view (see also Stein & Lambert, 1995), it is important to ensure that the definition of education is sufficiently specific so that replication is possible, but sufficiently general so that the results can be expected to generalize to other education providers. In the Australian context, we have accepted the definition of our accrediting body, which stipulates that clinical psychology courses must ensure that students obtain knowledge and skills in several content areas. All clinical psychologists in Australia are expected to have expertise in psychological disorders, psychological assessment, and psychological treatments. Courses may have different theoretical orientations so long as course content is science and evidence-based.

Measures of the effectiveness of a training program should be closely related to the goals of that training program. In the Australian context, the scientist-practitioner model has been adopted as the basis of training (Sheehan, 1994), with the consequence that two potentially distinct knowledge domains may be relevant: research-based clinical knowledge and practice-based clinical acumen. As Binder (1993) has observed, although this distinction between clinical knowledge and practice ability is frequently highlighted in reviews of clinical training, outcomes in the two domains are seldom specifically assessed in evaluations of training effectiveness. In our view, there are two reasons why both domains need to be assessed. First, doing so means that we are sampling from the competence domains in which change can most reasonably be expected. Second, the distinction between knowledge and skill appears to parallel the divide between scholars who argue for the primacy of knowledge in psychotherapy training (e.g., Richards, 2001) and scholars who argue for the primacy of relationship skills in psychotherapy training (e.g., Andrews, 2001). We suggest that it is important to assess whether training causes significant change in either domain. While assessing change in each domain, it will be possible also to assess whether the two domains are empirically as well as conceptually distinct.

Participants were individually assessed on two occasions: at the beginning of the first year of their postgraduate course and one year later. The assessment consisted of: a questionnaire accessing basic demographic information, including amount of experience and previous training; a measure of knowledge of psychological assessment, treatment and evaluation (ATE); a measure of diagnostic skills (DIAG); a 30 minute client interview which was video-taped; completion by the client and therapist of the respective Client and Therapist Working Alliance Inventory (WAI, Horvath & Greenberg, 1986, 1989); a yes/no decision by the client whether she would return to this therapist for a second session if that option was available (drop-out rating); completion by the client of the Barrett-Lennard Relationship

Inventory (BLRI, Barrett-Lennard, 1986); and a questionnaire regarding conceptualization pertaining to this interview (CASE). For the ATE, CASE and DIAG, the principal investigator scored all the results, with random checks conducted by the third investigator. On all checks there was a 100% inter-rater agreement.

Before beginning their interview, whether at pre-test or post-test, participants were told that it was to be an intake interview, that it would have to be completed within 30 minutes, and that it would be videotaped. They were informed that because the client's problem was a genuine one, confidentiality rules would apply to the interview. Participants were reminded that intake interviews commonly include building rapport, learning about the client and the problem, and establishing goals. Participants were also told that there was no set format for the interview and so they were to conduct the session as they would any first contact with a client, and to use whatever skills and processes they would normally use.

There were two research confederates who acted as standardized clients. Standardized clients presented with a real problem that is directly affecting their wellbeing and is sufficiently worrisome that they would consider obtaining help in dealing with the problem (Sharpley, Guidara, & Rowley, 1994). We adapted Sharpley and Ridgway's (1992) work on standardized clients in selecting and training two clients. One client was used for all pre-training interviews, and the other client was used for all post-training interviews. It was necessary to use two clients to ensure that both pre and post-training interviews were initial interviews. The two clients were chosen for: (a) their similarity to each other, (b) their non-reactance, (c) their ability to be consistent in terms of problem presentation and their ability to understand and respond appropriately to the range of interventions introduced during the session, (d) their emotional stability, (e) their histories of excellent interpersonal relationships, and (f) their capacity to become highly engaged by the interview. In summary, both clients had problems that were sufficiently severe and salient to keep them motivated to discuss their

problems, but not so overwhelming as to be disabling. Use of a standard client addresses concerns that have been raised about client comparability in effectiveness research (Peterson, 1995). Because clients presumably differ in how likely they are to respond positively to therapy, it is essential to keep effects related to client variability to a minimum. This minimum can be achieved by using the same client in all interviews, provided the by-products of repeated interviewing can be attenuated. By keeping client variables more-or-less constant, variability in interview effectiveness will mainly be a function of variability in the skill levels of therapists (Sharpley & Ridgway, 1992) or trainees (Burlingame, Fuhriman, Paul, & Ogles, 1989).

Pre-training group equivalence

The quasi-experimental design of this study required that, at pre-test, individuals who constitute the training group not differ significantly from individuals who constitute the non-training group. Group differences on the clinical knowledge and practice ability measures prior to training were assessed with t-tests, none of which were significant. However, because there was an age difference between those trainees and non-trainees who completed the study, the main data were analyzed with analyses of covariance with age as the covariate. No change to the results was observed, but the covariance-based findings are reported nonetheless. It is also important to note that the lack of random allocations precludes any inference of causation. Even if we demonstrate trainees are better than non-trainees, we cannot definitively say that the difference is the result of training. Any group difference may be the result of a placebo effect, or the fact that the trainees (given their ongoing postgraduate training) were simply more practiced at being assessed in the way that our study assessed their ability, or even due to some other characterological differences between the groups not captured within the study. Some caution in interpreting our findings is therefore warranted.

Client-specific effects

Several dependent measures used in this study (BLRI, WAI client ratings, drop-out likelihood) were specific to one (pre-test) or the other (post-test) client. This meant that there was a possibility that any pre/post differences on these measures could reflect client differences rather than training effects. For example, among all participants who completed the study (trainees and non-trainees), comparison of pre and post-test scores indicated significant differences for the BLRI (t (60) = 2.15, $p < 0.05$) and WAI Bond (t (60) = 4.32, $p < .001$); in each case the ratings were significantly lower at post-test than they were at pre-test. These differences may indicate that the post-test client used a more stringent subjective standard in evaluating the interview than the pre-test client. For this reason, client-ratings were used only for between group comparisons.

Therapists are poor judges of their own ability

Ratings on some dependent measures were obtained from two or more sources: the therapist (participant), the client and the observer (first author) on the WAI scales; and the client and observer on the dropout scale. Agreement was strong between the client and observer both at pre-test (r = .84 for WAI Bond, .85 for WAI Task, and .83 for WAI Goal) and at post-test (r = .76 for WAI Bond, .79 for WAI Task, and .80 for WAI Goal). However, there was no statistically significant relationship between the ratings obtained from the therapist and from the other two sources. We concluded that the therapist ratings were unreliable and excluded them from further consideration.

The Effects of Clinical Training

We assessed whether training effects were evident by first conducting a multivariate analysis of covariance (controlling for age) in which clinical knowledge measures and client-rated practice ability measures were the dependent variables. The results indicated that the two groups differed significantly on the canonical variable [Wilk's Λ = .695, F (8, 51) = 2.79,

$p < .05$, 1-β=.8874]. As Table 1 shows, follow-up univariate analyses of covariance (controlling for age) indicated that trainees achieved significantly higher scores than non-trainees on 4 measures: knowledge of assessment, treatment, and evaluation (ATE); knowledge of diagnosis (DIAG); and the client-rated and observer-rated Goal scale of the Working Alliance Inventory (WAI-Goal).

Insert Table 1 about here

For those non-client variables where between-group differences were observed, we conducted paired t-tests to assess whether there was a significant change pre-to-post in the performances of trainees and non-trainees. For trainees, there was a significant increase in knowledge of assessment, treatment and evaluation (ATE; t (30) = 5.948, p <.01) and in observer-rated WAI Goal scores (t (30) = 2.10, $p < .05$), but there was no significant increase in diagnostic knowledge. For non-trainees, there was a significant decrease in diagnostic knowledge (t (29) = 4.23, $p < .01$).

We also checked whether the changes just reported were moderated by the pre-test performance levels of participants, to consider whether training may have different effects on those who were relatively strong or weak to begin with. To this end, participants were divided at the pooled median scores on the ATE, DIAG and WAI-Goal variables, and the pre-to-post changes were re-evaluated for each sub-group so formed (Table 2). As is evident in Table 2, trainees with both above and below median knowledge of assessment, treatment and evaluation (ATE) significantly improved. The pattern of effect was, however, more complex for WAI-Goal scores and diagnostic knowledge (DIAG) scores. Trainees with below median ability for WAI-Goal Observer scores and DIAG scores significantly improved (a similar pattern was evident but not significant for WAI-Goal Client scores), while those with above median ability did not change. The opposite picture is evident for Non-Trainees where those

with below median ability did not change, and those with above median ability significantly declined.

Insert Table 2 about here

Although trainees obtained higher scores than non-trainees on two clinical knowledge measures at post-test, there is evidence that trainees actually improved on their pre-test clinical knowledge on only one measure: ATE. This result may mean that training does not enhance the ability to solve problems in differential diagnosis or to conceptualize the presenting problems of a person one has just interviewed; alternatively, this result may mean that our approach to measuring these knowledge domains was flawed.

Like other investigators (e.g., Horvath & Symonds, 1991), we observed that how well a therapist is able to develop a working alliance with a client depends on who rates the quality of the alliance. The alliance ratings of therapists were unrelated to those of clients and observers, but very strong relationships between the ratings of clients and observers were evident. Sadly, there is no evidence that a therapist's ability to judge the quality of the working alliance improves as a function of training: no significant correlations between therapist and client or observer ratings were observed at pre-test or at post-test. There is very little evidence that the ability of trainees quickly to develop a good working alliance with a client is enhanced by one year of clinical training. Both the client and the observer rated trainees as more able than non-trainees to work with the client to establish therapeutic goals, and the observer rated trainees as more able at agreeing with the client on therapeutic tasks at post-test than they were at pre-test. Otherwise, trainees did not differ from non-trainees on the remaining WAI scales (whether client or observer rated), on client-rated empathy, or on the client's estimation of how likely it was that she would not remain in treatment with the therapist; nor did trainees improve their performance on any of these other scales.

The Structure of Clinical Competence

The dependent measures in this study have thus far been classified as clinical knowledge or practice ability measures on the basis of their nominal content, but the extent to which this distinction is supported by empirical evidence remains to be established. The latent structure of the variables was assessed with a principal components analysis of correlations between the post-test measures. Two components with latent roots greater than unity (λ_1 = 5.16, λ_2 = 1.31) accounted for 80% of the total variance. These components were rotated with the Oblimin procedure (Table 3), and it was evident that the two components corresponded to the *a priori* difference between clinical knowledge (component 2) and practice ability (component 1). Both principal components accounted for 74% of the lower order variance.

Insert Table 3 about here

For heuristic reasons, we reanalyzed the post-test data substituting component scores for the original measures. No substantial changes in outcome were evident. Age and fourth year GPA were significantly related to pre-test clinical knowledge, practice ability, and global clinical ability. Trainees were significantly different from non-trainees on clinical knowledge and global clinical ability, but not on practice ability, after covariance correction for age and honors GPA. How does this apply to our training? The ostensible function of the scientist-practitioner model is to integrate psychological science and psychological practice (Belar, 2000). In pedagogical practice, a distinction can be drawn between the acquisition of clinical knowledge and the acquisition of practice or relationship skills. We assessed whether these two domains are, in fact, independent of each other. Our results indicate that so-called clinical knowledge and practice ability do represent distinguishable knowledge structures. But our results also indicate that both clinical knowledge and practice ability contribute to a higher-order knowledge structure that we call global clinical ability. The present study found a

moderate correlation of .48 between the two factors. These results are similar to those of Tori (1989) who observed similar primary factors that were moderately (r = .46) correlated with each other. These results may be important because they illustrate something about the ingredients of clinical practice that, although obvious, is frequently overlooked. Clinicians can only use or apply their clinical knowledge in the context of the relationships that they have with their clients; the relationships that clinicians develop with their clients always develop in tandem with the clinicians' application of their clinical knowledge to helping clients achieve their aims (cf. Binder, 1993; Freedheim & Overholser, 1998).

Although measurement of practice ability will always entail measurement of clinical knowledge, the extent to which variance is shared across these domains will vary substantially as a function of a client's needs (and hence as a function of the knowledge domain that the clinician will bring to bear on the problem). But whether the clinical psychologist is administering a standardized psychological test or participating in psychotherapy, content and process are inseparable. Because they are inseparable, conditions or variables that limit performance in one domain will also serve to limit performance overall. For trainees there was an improvement in correlation between Clinical Knowledge and Practice Ability from .17 to .32 (pre to post). There was no change in correlation for non-trainees.

Comparative Ability between Trainees and Non-trainees

Results from the present study suggest that knowing whether training impacts on trainees' competence is only part of the picture. We can also ascertain which trainees benefit from clinical training – as well as what happens to those individuals who do not pursue further training. Results indicated that all trainees, regardless of initial pre-training ability, benefited from training in knowledge of assessment, treatment and evaluation. However, only trainees who were below median pre-training ability in the WAI and diagnostic ability benefited from further training. Thus, in some areas it would seem that training will not add to

the skills of above the median trainees. On the other hand, not participating in training resulted in a significant decline for above median non-trainees, and made no difference to those who were below the median. Training may thus serve at least a 'holding' environment for above average ability students.

Insert Figure 1 about here

Can we assume that any given trainee is more effective than any given non-trainee? The histograms in Figure 1 demonstrate that the competencies of trainees and non-trainees largely overlap. The most skilled individuals tend to be trainees and the less skilled tend to be non-trainees, but some trainees are clearly less effective than some non-trainees. Training does not guarantee superior post-training ability.

Drop-out Ratings

There was no significant difference in the second client's ratings of their intension to return to therapy when comparing trainees and non-trainees. (t (59) 1.72, n.s.). There was however a significant difference in this regard for observer ratings (t (59) 2.06, $p< 0.05$, $d=0.51$), with likelihood to return higher for trainees. Overall indications from both sources were that in about a third of cases, the client would not have returned for a second session.

Implications

In Australia, graduates of 4-year psychology courses can obtain professional registration by one of two routes: postgraduate training or supervised practice. These alternative professional development pathways afforded us an opportunity to assess the effectiveness of postgraduate training courses by comparing the clinical performance of individuals who opt for (and are selected for) postgraduate training with the clinical performance of individuals who do not enter postgraduate training. Our results indicate that individuals who obtain post-graduate training in clinical psychology demonstrate greater

clinical competence as a consequence of training, and their performance is better on average than individuals who have not obtained such training.

Before considering what these results mean, we need first to consider whether they are likely to generalize to other students, other universities, and other countries. Our greatest concern is whether our participants were representative of clinical students and clinical apprentices. Our study imposed substantial demands on participants, not only in terms of time, but in terms of allowing their professional competence to be scrutinized and evaluated by others. In this context, willingness to participate may mean that our samples were more open to experience and less defensive, more confident of their professional skills, and/or more committed to research of this kind than their peers. We know that our participants were broadly representative of their peers in terms of age, gender, and academic ability, but how or if they may have differed from other trainees or apprentices cannot be known, which means that we cannot be sure that similar effects would be observed with other student samples.

We are much more confident that our results would generalize to other Australian universities, and to universities in other countries. In Australia, course accreditation requirements ensure that courses are relatively uniform in content and teaching methods. Our samples are too small to allow comparisons between universities, but inspection of our data shows that variability in achievement within universities far exceeds variability between universities. Similarly, clinical psychology education in Australia has a much briefer history than in the USA, and so Australian educators borrowed the scientist-practitioner model of education, standards of evidence-based practice, and course structures from their international colleagues (reference APS accreditation requirements). Legal requirements for psychological practice differ profoundly in Australia and the USA, a difference that made this study possible, but there is no reason to believe masters-level education in clinical psychology differs substantially in content or method in the two countries.

Assuming that our results do generalize to similar students in other universities and countries, do our findings mean that educators, trainees and employers can rest assured that training is effective? Not necessarily. Clinical training increases clinical knowledge, but not clinical practice skills, in some, but not all trainees. Indeed, after one year of postgraduate training, the competence of some trainees is substantially less than that of peers who have pursued a professional apprenticeship.

This result is a modest one, but appears less so when we consider the effects of pursuing a professional apprenticeship, which is recognized in Australia as being an acceptable alternative to postgraduate education. After one year of apprenticeship, apprentices did not show an increase in any competence and showed significantly less knowledge of diagnosis than they had a year earlier. Supervised work experience appears to be ineffective even in maintaining prior knowledge, let alone adding significantly to prior knowledge. Against this dismal result, even the modest effectiveness of clinical training looks good, but not so good that we can avoid thinking about how the effectiveness of clinical training can be enhanced. There are two clear weaknesses in clinical training programs that need to be addressed: their inability to enhance the skills of all trainees, and their inability to enhance the practice skills of trainees.

Why does training enhance the performance of below median trainees but not trainees with superior skills? One possibility is that educators focus on ensuring minimum levels of competence in students rather than helping all students to maximize their performance. The competence of students varies markedly at the beginning of training and educators need always to decide at what level to pitch their teaching. We suspect that, in most teaching practices other than clinical supervision, the level of education is set by the least able rather than the most able students. The effect of education, then, is to increase average performance by bringing the less competent students closer to the level of the more competent students.

Skovholt and Ronnestad (1995) suggested that mixed-ability cohorts could be advantageous if the stages of professional development were well understood and if courses actually provided stage-appropriate training. Our results suggest that even if clinical educators understand that different students have different needs, clinical programs are not effective in providing for the needs of the more competent trainees.

A more confronting possibility is that educators do not possess the qualities and skills necessary to increase the competence of more able students. In most universities, educators are selected for their research skills rather than their clinical or teaching skills. The literature provides many examples of how educator incompetence and/or negative personal characteristics adversely affect the quality of training, and especially the quality of clinical supervision (e.g., O'Donovan, Dyck & Bain, 2001; Ramos-Sanchez, et al., 2002). Stricker (2000) suggested that in the USA, the better training schools are those where faculty members are practicing clinicians who routinely demonstrate the competencies in which they provide training. Whether or not this is true is open to debate, but it is true that educators who are unable to demonstrate or model competencies are precluded from using what is, in most cases, a highly effective educational tool (Walsh, 1990).

The research literature indicates that the therapeutic relationship plays a key role in determining treatment outcome, but training does not affect performance in this area. The failure to observe improvement in relationship skills is common in training research. There are at least two explanations for this finding. Hollon (1996) has suggested that the content of training courses cannot be expected to enhance the ability of trainees to bond with their clients. If true, then educators need to re-examine their course structure. Perhaps courses place too great an emphasis on basic science and not enough emphasis on the development of relationship skills (Nixon, 1994; O'Gorman, 1994).

A second possibility is that the characteristics needed to establish an effective bond may not be trainable (Henry & Strupp, 1994; Mallinckrodt & Nelson, 1991; Martin, 1990). If this is true, educators will need to ensure that they select for training individuals who possess the necessary personal characteristics. As Safinofsky (1979) suggests, a trainee "… must already be a concerned, compassionate, intelligent, and sensitive human being before this training even begins. Training may mature and refine the experience of his concern and empathy, but it cannot supply what does not exist in the first place (p. 195).

In conclusion, our research suggests that a postgraduate education in clinical psychology does increase the clinical skills of students and facilitates the maintenance of pre-training skills. But much work remains to be done to ensure that postgraduate training programs are effective for all students and across a broader range of skills.

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Table 1

Differences Between Trainees and Non-Trainees at Post-Test in Clinical Knowledge and Practice Ability, Controlling for Age

	Trainees		Non-Trainees					
Variable	*Mean*	*SD*	*Mean*	*SD*	*F*	*df*	*p*	*d*
Clinical Knowledge								
ATE	11.90	4.36	8.50	4.86	5.77	1, 58	.02	.74
DIAG	8.45	3.09	5.23	3.19	11.77	1, 58	.001	1.03
CASE	7.51	2.66	6.23	2.92	2.45	1, 58	ns	
Client Ratings								
BLRI	25.03	15.60	15.43	20.31	2.31	1, 58	ns	
WAI-Bond	58.93	8.76	56.30	10.56	0.59	1, 58	ns	
WAI-Goal	58.77	8.24	51.80	11.21	4.80	1, 58	.03	.72
WAI-Task	59.09	6.84	54.36	11.89	1.98	1, 58	ns	
Observer Ratings								
WAI-Bond	63.22	12.17	58.93	17.09	0.45	1, 58	ns	
WAI-Goal	61.54	9.00	53.13	12.58	4.30	1, 58	.04	.78
WAI-Task	62.03	10.34	53.80	14.97	3.32	1, 58	ns	

Abbreviations: ATE = Assessment, Treatment, Evaluation; DIAG = Diagnosis; CASE = Case Conceptualization; BLRI = Barrett Lennard Relationship Inventory; WAI = Working Alliance Inventory.

Table 2

Change from Pre-Test to Post-Test on Selected Dependent Measures[a] *as a Function of Training Status and Initial Level on Each Dependent Measure*

Training status	*DV*	*Initial level on DV*	*Change (pre to post)*	*t*	*p*	*d*
Trainees	ATE	Low	4.07	4.36	.001	1.16
		High	3.59	3.99	.001	0.97
	DIAG	Low	2.25	3.47	.003	0.87
		High	-1.87	-2.09	n.s.	-
	WAI-Goal (client)	Low	4.82	1.86	n.s.	-
		High	-0.64	-0.37	n.s.	-
	WAI-Goal (observer)	Low	9.71	4.20	.001	1.02
		High	-2.14	-0.76	n.s.	-
Non-trainees	ATE	Low	2.36	1.69	n.s.	-
		High	-2.06	-2.08	n.s.	-
	DIAG	Low	-1.56	-1.61	n.s.	-
		High	-4.36	-5.48	.000	1.46
	WAI-Goal (client)	Low	4.08	1.18	n.s.	-
		High	-9.53	-3.87	.001	0.94
	WAI-Goal (observer)	Low	7.82	1.66	n.s.	-
		High	-12.95	-3.61	.002	0.83

[a]The dependent measures reported are those for which there were significant group differences reported in Table 1

Table 3

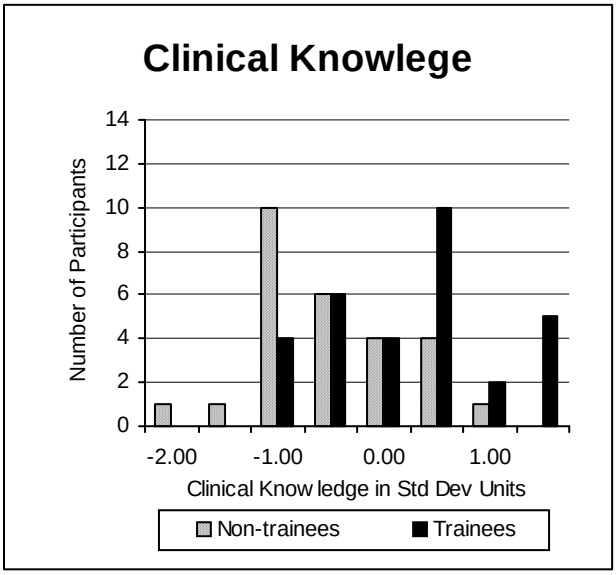
Oblimin-Rotated Pattern Matrix for Two Components Extracted from Eight Post-Test Dependent Measures

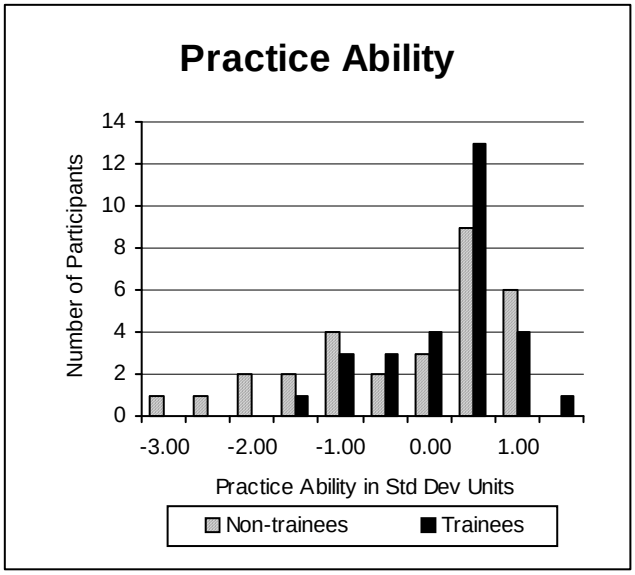
Variable	Component 1	Component 2
ATE	-.010	.883
DIAG	-.070	.859
CASE	.178	.631
BLRI	.851	-.060
WAI-Bond	.992	-.080
WAI-Goal	.985	-.020
WAI-Task	.971	.010
Dropout	.913	.080

Abbreviations: ATE = Assessment, Treatment, Evaluation; DIAG = Diagnosis; CASE = Case Conceptualization; BLRI = Barrett Lennard Relationship Inventory; WAI = Working Alliance Inventory.

Figure Caption

Figure 1. Comparative ability.


Clinical Knowlege
Number of Participants
14
12
10
8
6
4
2
0
-2.00
-1.00
0.00
1.00
Clinical Know ledge in Std Dev Units
Non-trainees
Trainees


Practice Ability
Number of Participants
14
12
10
8
6
4
2
0
-3.00
-2.00
-1.00
0.00
1.00
Practice Ability in Std Dev Units
Non-trainees
Trainees