Basic and Applied Psychology: Ph.D. and Psy.D.

Victor R. Bullock

Longwood University

Abstract

In the field of research there has been a debate as to whether research should be basic or applied. Basic research is used to further develop knowledge in a given field. Applied research is used to solve a practical problem. Higher education, within the field of psychology, carries on this debate. The Doctorate of Philosophy (Ph.D.) is based on basic research, while the Doctorate of Psychology (Psy.D.) is based on the application of psychology to actual problems. Despite the differences between the two degrees, the differences have diminished and the two degrees are becoming more similar.

*Keywords*: doctorate of philosophy, doctorate of psychology, graduate school, Ph.D., Psy.D.

Basic and Applied Psychology: Ph.D. and Psy.D.

There are many motives that drive a student to continue their higher education past their undergraduate years. For some the motives are present from the first day of classes. Some feel as though they want to learn more about a certain area, contribute original work to an area, or they just believe that is what they are meant to do. For others it is just another option in the event that they are unable to find a job or do not want to look for a job. These people may not be able to find a job after graduating from an undergraduate program, received influence from people in their families, or even just want to postpone joining the working world for a while. For those that do decide to go to college for psychology there are two choices for degrees, which might combine into the same degree one day.

**Difference between Basic and Applied Research**

There is an argument in the field of psychology over which is more important, basic or applied research. Basic research is best used for better understanding human nature. Basic research does this by developing theories and paradigms. This type of research provides people with a simplified idea that can explain consistencies in human life. When testing these explanations experimental designs can be used to control for cofounding variables. Critics of basic research argue that it is not useful enough since it is not applicable to the problems of the world. Researchers have attempted to adjust the goals of research to make basic research was more problem oriented (Salomon, 1987). Since basic research is used to develop theories (Hoffman & Deffenbacher, 1993).

Applied research is used to solve actual problems using studies that were designed using the scientific method to practically solve problems. Using applied research, decisions on how to solve problems can be determined using the results from the studies. Critics of applied research argue that it should be made more scientific and contribute more to the basic science of psychology. This would then give applied research stronger internal validity (Salomon, 1987). Since applied research is used to solve a specific problem applied research is often less generalizable to other problems (Hoffman & Deffenbacher, 1993).

Despite having different goals, the results of basic and applied psychology can influence each other(Salomon, 1987). Basic research can be used to generate general ideas and the methods for testing those ideas while applied research uses those generalizations to develop practical solutions to problems (Hoffman & Deffenbacher, 1993). For example, the tentative theory of midleness is an example of basic research; it serves as no solution to any specific problem. However using this theory a new solution for improving nursing homes was developed. The success or failure of this solution can then lead to the redesign of the theory. Working in this manner, basic and applied research exists in a reciprocal relationship where one can influence the work of the other (Salomon, 1987).

**Ph.D.**

The scientist-practitioner model for psychology was developed at a conference for the training of clinical psychologist that was held in Boulder, Colorado (Peterson, 2007). This model is the model that is used in teaching the Ph.D. The Ph.D. is based on the traditional model of training for psychologists. The traditional model is also known as the scientist-practitioner model or Boulder model, named after the location of the conference. The conference determined that the focus of the training for professional psychologist should be to train professional psychologist as both scientists and practitioners. Training as a scientist means to do basic research rather than applied. At the same time though, Ph.D. candidates train as practitioners, in order to provide psychological service. It is the goal of the traditional model to get the student to gain new knowledge, scientist portion, and go out and apply that knowledge, practitioner portion (Scheirer, 1983).

Similar to most graduate school programs, a graduate student starts his/her career working with a professor. While working with a professor graduate students learn how to conduct research. Typically this process will remain continuously throughout the student’s years as a graduate student. While the student is learning and practicing how to conduct research they also take courses specific to their school of psychology (Scheirer, 1983). A de-emphasis was placed on applying the principles to everyday problems mainly because the belief was that there was not enough time to adequately teach it and that learning about science was more important than learning about another person (Frederick et al, 1984).

Issues were found with the Boulder model. In the early 1960’s there were not enough practitioners were graduating from programs based off the Boulder model to keep up with the demand for their services. Another criticism of the model was that it tried to cover too much area in a span of time that did not allow for students to adequately learn the material. The model did not give adequate training as a practitioner in a student’s area of interest. An early critique of the Boulder model was that the students were not advancing the field of psychology with their research since zero publications were published (Scheirer, 1983). The final critique of the model was that the practitioner portion of the model was not given enough attention, which was a problem since those using the model considered themselves in the mental health profession (Peterson, 2007). Since the professional, who was in charge of supervising the Ph.D. candidate, was trained as a researcher people felt that the supervisors teaching were focusing too much on the scientist portion of the teaching. The ways in which the classes were taught when then neglecting the practitioner portion. Using these critiques an argument was made for the establishment of another program to train professional psychologists (Scheirer, 1983).

**Changes in the Ph.D.**

Prior to the Boulder conference changes were already underway in the Ph.D. programs. These changes started near the end of World War II. Needing nearly 4,700 clinical psychologist, the Veterans Administration lobbied for changes in the training of clinical psychologist (Woody & Robertson, 1997). The reason for this was that the Veterans Administration knew that after the war thousands of soldiers would be returning home emotionally damaged. The belief was that the emotional distress of the veterans would reach its peak in the 1970’s, so if the administration started recruiting psychologists early the problem would be reduced (Trierweiler & Stricker, 1998). This administration wanted to take the psychologist that had been employed by them during the war and give them the training necessary to assist with this problem (Korchin, 1976). Joining with the U.S. Department of Public Health and the Institute of Mental Health changes were made to the way graduate schools taught their clinical psychology students (Trierweiler & Stricker, 1998).

Up until this point clinical students were trained in a manner that made them suited best for work in an academic setting. There was little emphasize on actually applying the skills they were learning. Unless the students went to a site to conduct a program similar to an internship or found a professor to individually supervise them, almost no application of the skills occured (Trierweiler & Stricker, 1998). To promote going to an institution with one of the new clinical psychology programs the Veterans Administration gave stipends and provided internship opportunities to students who attended one of these institutions. To get the assistance from the federal government schools had to teach how to diagnose, conduct psychotherapy, and be able to competently conduct research. By 1950 almost half of the Ph.D. students that were clinical psychologists were coming through these new programs (Korchin, 1976).

Another change in the Ph.D. came from a conference that was held in the summer of 1949 to standardize the program of graduate clinical psychologist in America. The focus was on the training of clinical psychologists. For fifteen days seventy three people from various psychology institutions and people in fields related to psychology attempted to look at current requirements and the requirements that were going to be needed in the future by professional services to develop a new model of training (Baker & Benjamin, 2007). Factors such as how much access undergraduates would have to clinical courses, requirements for institutions that offered internships, financial aid for graduate students, and how to train students for future careers were some of the factors that were discussed during the conference. Out of this conference came the scientist-practitioner model, which was used as the training model for graduate programs across the country for the next twenty years (Peterson, 2007).

The idea for this model came from a report filed two years earlier by the Committee on Training in Clinical Psychology. This report would later be known as the Shakow report, named after the head of the committee. The Shakow report included a basic outline for accreditation of programs for graduate schools (Peterson, 2007). In order to determine accreditation a few issues had to be resolved. First the outline the goals of clinical psychology the report first defined the role of clinical psychologist. The report defined the role of a clinical psychologist as someone who works to gain knowledge about a person’s personality and develop methods that can be utilized to increase the quality of life for the individual. The report called clinical psychology a science and an art. For this reason the report focused on a need for both applied and theoretical knowledge. The focus of the combination of these two items would be in three areas: diagnosis, therapy, and research (Peterson, 2007). It was not the intention of the APA, at the time, to separate applied and theoretical knowledge. The intention of the APA was to be able to give a student both tools as a practitioner and researcher instead of people specializing as a practitioner or researcher (Brotemarkle, et al., 1945)

A new goal was then developed in order to outline what the scientist-practitioner goals were. As a practitioner the person should be able to understand responses and actions clients demonstrate during a session. As a scientist, students are expected to be able to complete all the steps of the scientific method. When both pieces are put together the person should be able use one to develop the other. For example, through observation the person should be able to formulate a hypothesis and test the hypothesis (Peterson, 2007). This also marks a change in psychology from a mental health profession to a health profession with knowledge and services (Belar, 2000). Both, students who train as a scientist and those that are practitioners are limited by a code of ethics with this the practitioner side ensure that only the most effective treatments are used on clients (Peterson, 2007).

**Creating a Separate Degree**

The APA recognized that the requirements for the Ph.D. did not fully train students that wanted to practice after graduate school. Only the minimum requirements were being met by the standards for a Ph.D. (Wertheimer, 2000). For many years the scientist-practitioner model was the main model used for the training of doctorate level students. The scientist-practitioner model was upheld after reexamination sixteen years after its creation at a conference in Chicago. However criticism of the model began to rise after the Vietnam War, this was not the first time the model was criticized. There were four main issues with the model (Scheirer, 1983).

The first was that programs that used the model were not generating enough practitioners to meet the rising demand, caused by the return of WWII veterans. From one state only 20 doctorate graduate students were graduating per year (Peterson, 1982). The next criticism had to do with the quality of the model. Students being trained were not being trained as fully as they should have as either scientists or as practitioners. Due to the amount of time students have to complete the program, it was difficult to fully teach students how to capably serve as both a scientist and practitioner. Also based on student survey information, the model did not encompass the students interest nor allow the students to apply their strengths in the field of applied psychology (Scheirer, 1983).

The third critique of the model was that it was not providing any knowledge to improve upon what was already known about psychology (Levy, 1962). The final critique of the model focused on the professionals who were teaching the scientist-practitioner model. Those who trained students were academics who had been trained as scientists, not practitioners. It was believed that the educators for the programs using the model were training their students as just as scientist and cared little about the training as a practitioner. For this reason a split began in the hopes of ensuring that the training of psychologist did not lose the practitioner piece (Scheirer, 1983).

The two degrees vary differently in their purposes. The Ph.D. is awarded to those who make contributions of new knowledge. The Doctorate of Psychology, or Psy.D. is awarded to those that train in a program that prepares them for apply skills in a clinical setting. While the original hope was that this separation would exist on a continuum, the separation has actually created a dichotic relationship. Thus the separation widened the gap between basic and applied psychology (Stricker, 1975). To compensate for this Ph.D. programs that were for developmental psychologist recognized the importance of application of principles. For this reason developmental programs adjusted their teaching methods. The change focused a shift in the professional values. To make the change programs placed an emphasis on courses that focus on research design and knowledge of advanced statistics (Frederick et al., 1984).

**Psy.D.**

In 1951 to prevent the loss of practitioner training, practitioner oriented programs were developed at the Department of Psychology at Adelphi University. The University of Illinois then became the first graduate program to offer a Psy.D. (Scheirer, 1983). Nearly 25 years before, L. Crane came up with the idea for a professional training program that offered a Psy.D., but his idea was ignored by the APA at the time (Woody & Robertson, 1997). These programs later became known as professional schools. Programs that offer the Psy.D. often enroll larger classes than other programs. The reason for the larger class size is that these program are only focusing on one or a couple areas of psychology compared to the others who are focusing on multiple areas (Scheirer, 1983). Compared to the scientist-practitioner model whose students graduate in roughly five and a half years, the Psy.D. student graduates in three and a half years to four years (Gaddy, et al., 1995).

Professional schools have different standards than other programs. Many students enrolled in the professional school have previous work experience in an applied field. Frequently the students who have a Master’s degree are the applicants in this program. Having already shown that one can demonstrate applied skills, something that the Master’s degree students have done, is a trait highly valued in the professional programs (Shannon, 1982).

There are negatives and positives to joining a Psy.D. clinical program over a Ph.D. clinical program. The first is that Psy.D. programs offer limited financial support. Students in these programs often are responsible for paying most if not all of the tuition fees themselves. In addition to tuition fees the institution does not cover finding a place to live while completing the program. A positive of the Psy.D. program is that there is a higher acceptance rate, around 17% for those that apply. Also there is a balance between psychodynamics and research among the faculty (Norcross, et al., 1998)

**Vail Conference**

In 1963, after the Boulder Conference, the Committee on the Scientific and Professional Aims of Psychology reevaluated the current graduate level psychology models. After two years of examining the models the committee concluded that the scientist-practitioner model was failing to produce a combination of researchers or practitioners (McConnell, 1984). The committee wanted to be able to bring psychotherapy into the field of psychology so the people on the committee proposed a new model. This new model took aim at allowing clinical psychologists to learn psychotherapy as a part of a doctoral program (Stricker, 1974). Seeing that none of the modern training models could adequately prepare students for the new model the committee proposed changes to current doctorate level programs (McConnell, 1984). The original idea for the Psy.D. did not begin with the Vail conference, but instead came from the Shakow reports. The Shakow reports were the first investigations into how a new degree would work. After World War I, a group known as the American Association of Clinical Psychologist became a part of the APA (Reisman, 1996). The Shakow report called for the development of a four year degree. This four year program would influence the a new program. The plan listed first year of graduate school should be dedicated to learning about psychology as a science. The second and third years focused on making students practice their skills by having students participate in and complete a practicum or internship. The Veterans Administration offered many students internship opportunities to promote the use of institutions that were taching their model. Once a student completed the program the Veterans Administration would offer the graduate a job. The final fourth year would be for completing a written doctoral dissertation (Reisman, 1996).

With help from the Veteran’s Administration and U.S. Public Health Service the money to start training clinical psychologist was gathered (Reisman, 1996). In 1965 at the Chicago Conference the new model was tested on a clinical psychology program in at the University of Illinois (Stricker, 1975). By making changes within the already existing program researchers were able to evaluate the effectiveness of the model to determine how well the new model worked. Changes included the hiring of new clinical staff. New staff were brought in on the bases of their clinical merit and capability. This was a change from making hiring decisions based on research contributions and publications. At the conference the attendees decided that this new model should not be a part of medicine, and that it should instead be a training of professional psychologists by other professional psychologists. This was done to avoid having research oriented professors influencing the students to conduct more research rather than actual application (McConnell, 1984).

In 1973, after receiving pressure from the professionals and politics the American Psychological Association called for a conference in Vail, Colorado. The conference had many topics to address such as where training or classes would be taught and what a new degree would be called. The decision was made that psychology had grown and developed enough to support an additional program. The professional program thus became the second type of program offered to graduate students. The conference recognized that creation of the professional program would mean a new set of training which promoted the committee to make the new degree in America. Thus the Doctorate of Psychology, or Psy.D., emerged. To earn this degree the focus of a program must have been to provide direct professional care and evaluations. The new focus differentiated the Psy.D. from the Ph.D. in that the Ph.D. was for the development of new knowledge (McConnell, 1984).

The Vail conference created professional programs within the field of psychology. The basis of these programs lies in the ideological and theoretical parts of psychology. A common feature of professional schools is that they train their students to provide services to the community instead of focusing on the research aspect of psychology. The orientation of the training varies between schools. This variation is based on the needs, priorities, qualities of the institution where the program is offered, and also the needs of the population at the time (Stricker, 1975).

At the Vail conference it was determined that training for the Psy.D. could not be conducted through current graduate level psychology programs. Therefore a professional school program was developed to cover the training. The focus of the training for Psy.D. programs is broader than the training of a Ph.D. student (Stricker, 1975). Instead of focusing on one subsection of psychology, a professional school demands a broader understanding of psychology so that more principles may be applied to issues and the students can be better prepared (Peterson, 1976).

In the notes from the Vail conference no reason is given as to why a new degree needed to be made. Support is given to the notion that a new degree would mean that certain requirements like the foreign language and thesis requirements could be thrown out. To replace these requirements three new requirements were formulated. An increase in the training of evaluation skills of patients was the first new criteria added. Since the dissertation was going to be kept the standards for writing one became more flexible. And the final recommendation was that a wider range of people could serve as dissertation chairpersons to allow for more professional psychologists to participate. All of these recommendations were able to be combined with the requirements for the Ph.D. Since the requirements could be merged into Ph.D. programs the decision to separate the Ph.D. was caused by a disagreement on the focus of the training of students (Stricker, 1975).

In order for a school to be able to have a professional program certain criteria must be met. Approval must be gained from several different places. The first is the department that will be responsible for the training, this is usually a psychology department. From the university, approval must be gained from a committee that is in charge of graduate programs and from the board of trustees. Some form of student run legislative body must approve the program. A body that oversees the financial concerns and educational policy must also approve the acceptance of a professional school. A few states require that evaluations of the program get conducted by a regional accrediting organization. Using a regional accrediting organization is not mandatory in all states, however for the states that do require one approval must be attained before institution of the program (Peterson, 1976).

**Which Degree is Better**

Since both degrees focus on different ways to apply psychology, concerns have been brought up as to whether or not those that earn one degree are as capable as those that earn the other degree. For example, one concern is that those that earn the Ph.D. cannot understand, evaluate, or properly apply their findings since their training does not teach them how to do so independently. Another concern about Ph.D. students was that the training as a scientist-practitioner did not prepare students to be interact with clients in a clinical setting. This created a difference in the ability of clinical psychologists, depending on what type of program they were taught (Green & McNamara, 1994).

Students that follow a Ph.D. program have shown greater ability to utilize methodological reasoning when compared to students in Psy.D. programs. This has to do with the way Ph.D. students are trained. Ph.D. students frequently apply control-group concepts and identify confounding principles in their work as graduate students. On top of applying those concepts to their own work the Ph.D. student evaluates other people’s work. The overall the frequency of applying these skills may then be giving Ph.D. students advanced knowledge in methodological reasoning (Green & McNamara, 1994).

In the field of statistical reasoning, students in Psy.D. programs score higher. To many this comes as a surprise since Ph.D. programs require more graduate statistics courses than Psy.D. programs. Despite their lack of statistical courses, Psy.D. students do learn about how to apply statistical values to clinical practices. With such a strong emphasis on application to clinical concerns Psy.D. students may be showing carry over effects from the practical setting to a more scientific setting (Green & McNamara, 1994).

Students in Ph.D. programs have shown greater success in the field of conditional probability than those in Psy.D. programs. While students in both programs take courses that expose them to a probabilistic science, Ph.D. students take more of these courses than Psy.D. students. Ph.D. students are also more exposed to this through the examination of causation in their research. They also use this in informal ways to solve other problems that are not as directly related to research (Green & McNamara, 1994).

**Future Direction**

Coursework between the two degrees is fairly similar. Introductory courses for both degrees are fairly similar as well. Both degrees require an introduction to statistics and measurements class, courses in experimental design, and regression. These courses train the students in research methods. Both degrees also learn about operating a statistical software program (Rossen & Oakland, 2008). Even though the Psy.D. was meant to focus more on the application of principles, the course work is relatively equal to that of the Ph.D.. Those completing a Psy.D. are still required to conduct research and work on a dissertation that is similar to the requirements of a Ph.D. Although the amount of work may be similar between the two degrees, the topics of the research are different and the research productivity is different. An example of this is how those in the Ph.D. programs do not focus as much on mental illnesses (Morgan & Cohen, 2008).

The popularity of the Psy.D. is growing in professional school programs. In 2004 roughly 25% of the people receiving a doctorate degree were receiving the Psy.D. However that number increases, when looking at the number of people who are receiving a doctorate degree in clinical psychology, to 40% (*Graduate study in psychology*, 1992). After receiving a degree, those that attain a Psy.D. still have a chance to get a job in a field that is research oriented. When it comes to working in the academic field those that received a Psy.D. are just as likely as those that received the Ph.D. to be in that field (Morgan & Cohen). For this reason the Ph.D. programs have also changed so that the students that graduate with a Ph.D. are able to work in a field that requires them to effectively service clients (Peterson, 2007). To do this certain schools in psychology have added a new requirement for the Ph.D.. Ph.D. developmental psychology programs use this new requirement that gives their students a chance to practice their skills. Developmental psychology students have to complete a practicum during in their first year. During that time the students would go to day cares or schools for children that are deaf. However this is the only experience that many graduate students gain in their time in graduate school (Freferick et al., 1984).

Although there are many similarities between the Ph.D. and Psy.D. programs, there are still a few differences. Since the Psy.D. was originally developed to focus on applying clinical psychological principles in a practical setting, programs that offer the Psy.D. often offer external professional training. They can do this by offering credit for inpatient care or allowing the student to practice in a medical setting. The Ph.D. programs do focus nor advertise to prospective students the option of participating in external training as much as the Psy.D. Another difference between the two programs is that Ph.D. programs do not necessarily focus their research on the treatment of mental illness (Morgan & Cohen, 2008). After the completion of the introductory level courses in research methods, both degrees do not require more advanced courses. Those that are involved in a Ph.D. program do often take the advanced courses such as factor analysis, while those in the Psy.D. program took more classes on qualitative analysis (Rossen & Oakland, 2008).

Basic and applied research has had a short history in psychology but the impact of the two sides still remains. The Ph.D. has been around longer and had a reputation of being the top degree. Yet the programs that offer the Ph.D. have gone under a set of alterations to give the students a set of skills to prepare them for application while retaining the ability to produce students for an academic setting; while the Psy.D. was developed to give students the skills necessary to be able to practice. Both degrees have their advantages, but for careers in a clinical setting the Psy.D. is better while an academic and research setting is better suited for those with the Ph.D.. As the years have passed the requirements have become increasingly similar. However as the degree requirements are becoming more similar there will always be two degrees, until the prestige and reputation of the Doctorate of Psychology becomes equal with that of the Doctorate of Philosophy.

References

*Applied developmental psychology*. (1984). Orlando, Florida: Academic Press.

Baker, D. B., & Benjamin, L. R. (2000). The affirmation of the scientist-practitioner: A look back at Boulder. *The American Psychologist*, (2), 241.

Belar, C. D. (2000). Scientist-practitioner ≠ science + practice: Boulder is bolder. *American Psychologist*, *55*(2), 249-250. doi:10.1037/0003-066X.55.2.248

Brotemarkle, R., Doll, E., Kinder, E., Moore, B., Smith, S., & Shakow, D. (1945). Graduate internship training in psychology – report by the subcommittee on graduate internship training to the other committees on graduate and professional training of the American psychological association and the American association for applied psychology. *Journal Of Consulting Psychology*, *9*(5), 243-266.

Brožek, J. (1984). *Explorations in the history of psychology in the United States.* Bucknell University London; East Brunswick, NJ: Associated University Presses.

Gaddy, C. D., Charlot-Swilley, D., Nelson, P. D., & Reich, J. N. (1995). Selected outcomes of accredited programs. *Professional Psychology: Research And Practice*, *26*(5), 507-513. doi:10.1037/0735-7028.26.5.507

Gaddy, C. D., Charlot-Swilley, D., Nelson, P. D., & Reich, J. N. (1995). Selected outcomes of accredited programs. *Professional Psychology: Research and Practice*, *26*(5), 507-513. doi:10.1037/0735-7028.26.5.507

*Graduate Study in Psychology*. (1992). Washington, D.C.. American Psychological Association.

Green, J. P., & McNamara, J. R. (1994). Reasoning abilities in Psy.D. and Ph.D. clinical graduate students: A preliminary study. *Journal Of Clinical Psychology*, *50*(6), 965-972.

Hoffman, R. R., & Deffenbacher, K. A. (1993). An analysis of the relations between basic and applied psychology. *Ecological Psychology*, *5*(4). 315.

Korchin, S. J. (1976). *Modern clinical psychology: Principles of intervention in the clinic and community*. New York: Basic Books.

McConnell, S. C. (1984). Doctor of psychology degree: From hibernation to reality. *Professional Psychology: Research And Practice*, *15*(3), 362-370. doi:10.1037/0735-7028.15.3.362

Milivojević, T., & Stamatović, M. (2011). Subjective experience of the process of gaining a Ph.D. degree. *Megatrend Review*, *8*(2), 525-538.

Morgan, R. D., & Cohen, L. M. (2008). Clinical and counseling psychology: Can differences be gleaned from printed recruiting materials?. *Training & Education In Professional Psychology*, *2*(3), 156-164. doi:10.1037/1931-3918.2.3.156

Norcross, J. C., Sayette, M. A., Mayne, T. J., Karg, R. S., & Turkson, M. A. (1998). Selecting a doctoral program in professional psychology: Some comparisons among Ph.D. counseling, Ph.D. clinical, and PsyD clinical psychology programs. *Professional Psychology: Research And Practice*, *29*(6), 609-614. doi:10.1037/0735-7028.29.6.609

Petersen, C. A. (2007). A historical look at psychology and the scientist-practitioner model. *American Behavioral Scientist*, *50*(6), 758-765. doi:10.1177/0002764206296453

Peterson, D. R. (1976). Need for the doctor of psychology degree in professional psychology. *American Psychologist*, *31*(11), 792-798. doi:10.1037/0003-066X.31.11.792

Reisman, J. M. (1966). *The development of clinical psychology*. New York: Appleton-Century-.

Rossen, E., & Oakland, T. (2008). Graduate preparation in research methods: The current status of APA-accredited professional programs in psychology. *Training & Education in Professional Psychology*, *2*(1), 42-49. doi:10.1037/1931-3918.2.1.42

Salomon, G. (1987). Basic and applied research in psychology: Reciprocity between two worlds. *International Journal Of Psychology*, *22*(4), 441.

Scheirer, C. (1983). Professional schools: information for students and advisors. *Teaching Of Psychology*, *10*(1), 11.

Stricker, G. (1975). On professional schools and professional degrees. *American Psychologist*, *30*(11), 1062-1066. doi:10.1037/0003-066X.30.11.1062

Trierweiler S, Stricker G. *The scientific practice of professional psychology*. New York: Plenum Press.

Wertheimer, M. (2000). *A brief history of psychology*. Fort Worth, TX: Harcourt College Publishers.

Woody, R., & Robertson, M. (1997). *A career in clinical psychology: From training to employment*. Madison, Connecticut: International Universities Press.